

# KNOWLEDGE ORGANISERS

## YEAR 9



# SCHOOL DAY

08:50am Tutor Time

09:25am Lesson 1

10.40am Break 1

11:10am Lesson 2

12:25pm Lesson 3

1.40pm Break 2

2.10pm Lesson 4

3.25pm End of School Day



# EQUIPMENT



School Bag



Knowledge Organiser



Black and Purple Pens



Pencil Case



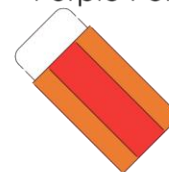
Knowledge Organiser



Calculator



Pencil



Rubber

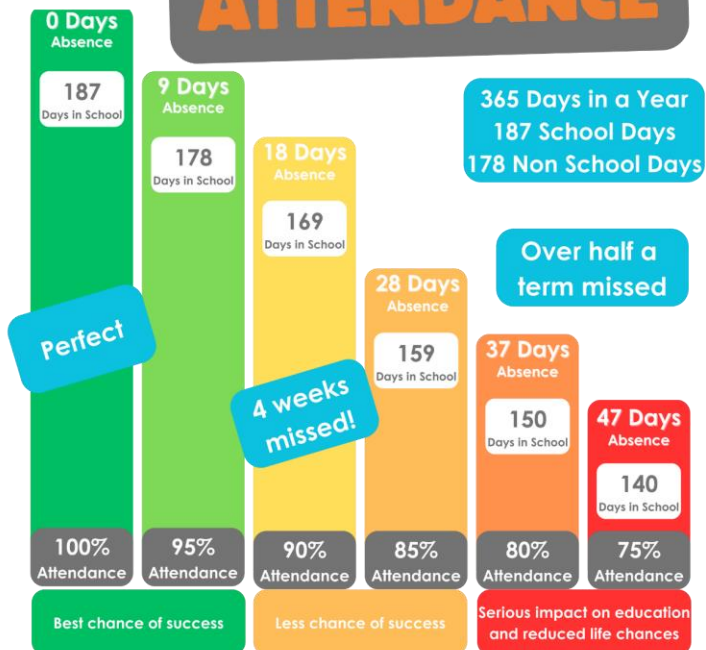


Ruler

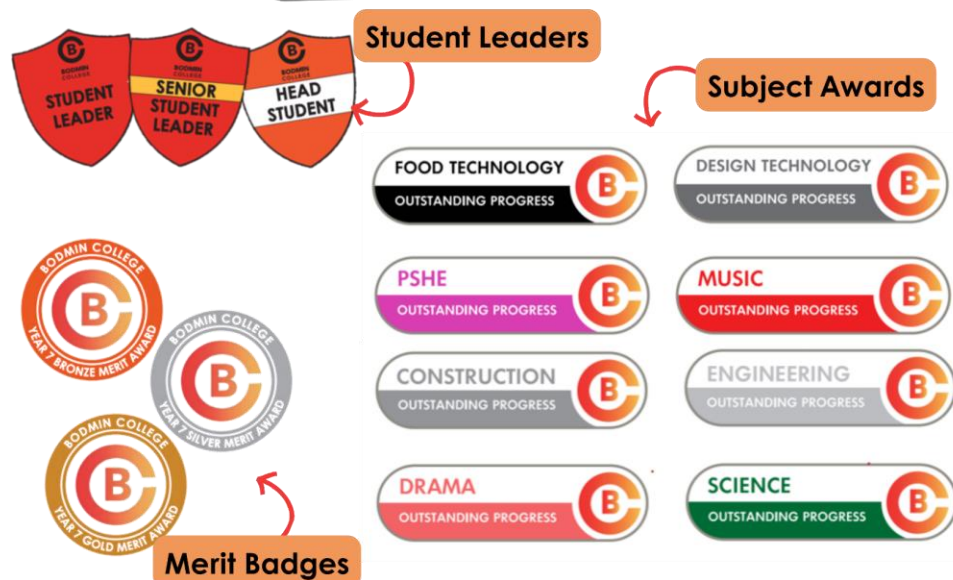


Whiteboard and whiteboard pen

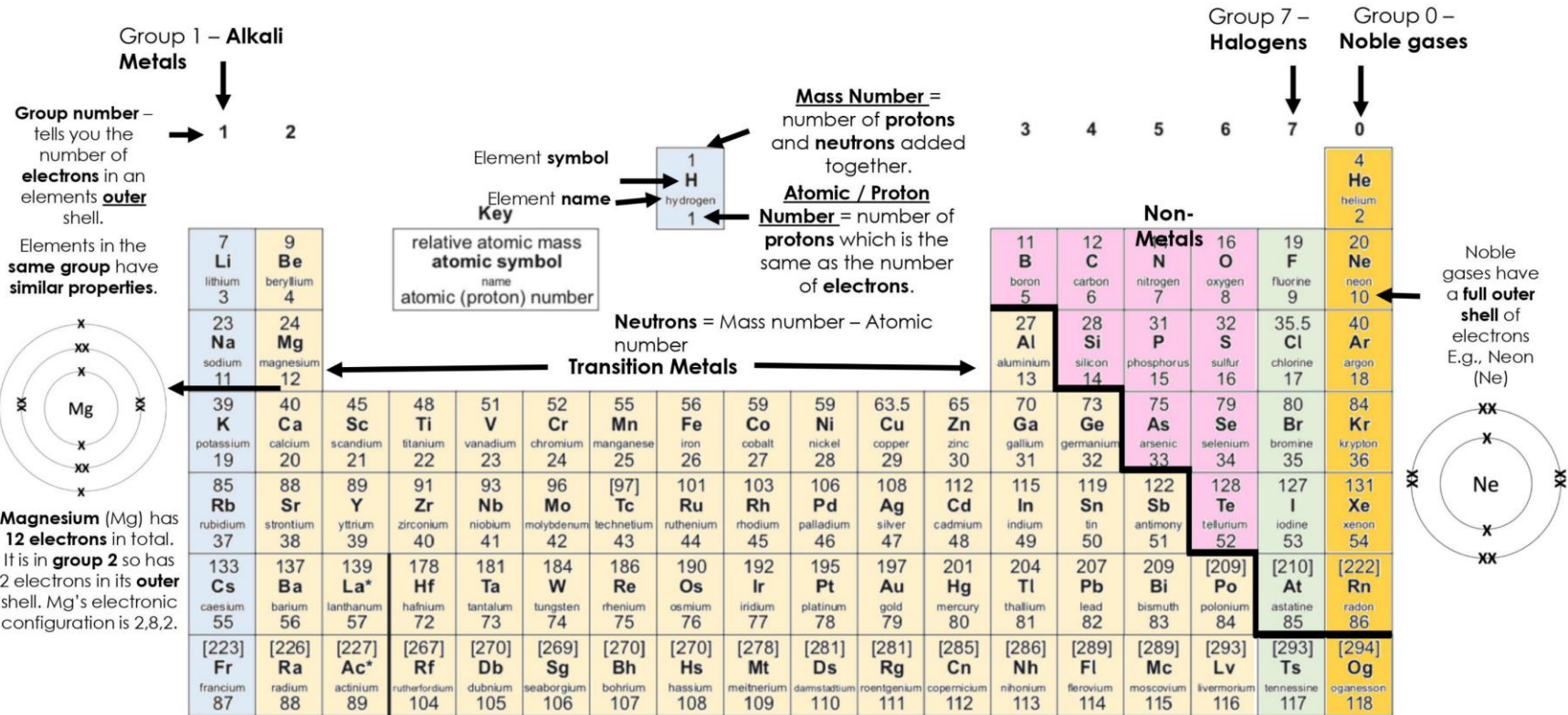
# ATTENDANCE



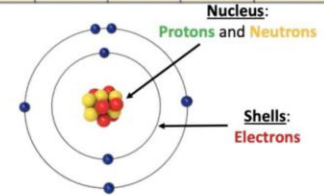
# REWARDS



# THE PERIODIC TABLE OF THE ELEMENTS



Subatomic Particle	Mass	Charge
Proton	1	+1
Neutron	1	0
Electron	Negligible	-1



# HOW CAN I USE THE PHYSICS EQUATION SHEET?

## Triple only equations

HT = Higher Tier only equations

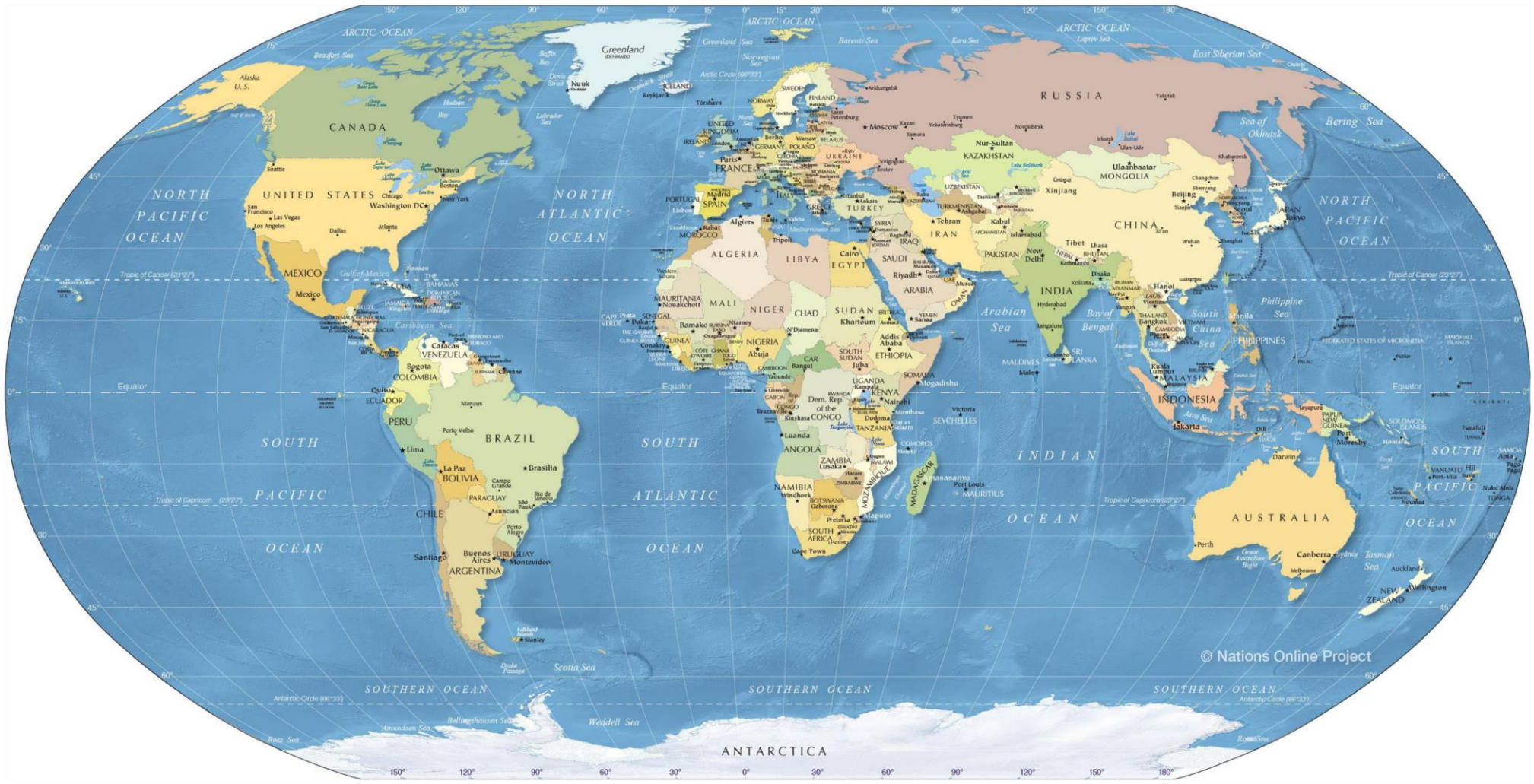
kinetic energy = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
elastic potential energy = $0.5 \times \text{spring constant} \times (\text{extension})^2$	$E_e = \frac{1}{2} k e^2$
gravitational potential energy = $\text{mass} \times \text{gravitational field strength} \times \text{height}$	$E_p = m g h$
change in thermal energy = $\text{mass} \times \text{specific heat capacity} \times \text{temperature change}$	$\Delta E = m c \Delta \theta$
power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
charge flow = $\text{current} \times \text{time}$	$Q = I t$
potential difference = $\text{current} \times \text{resistance}$	$V = I R$
power = $\text{potential difference} \times \text{current}$	$P = V I$
power = $(\text{current})^2 \times \text{resistance}$	$P = I^2 R$
energy transferred = $\text{power} \times \text{time}$	$E = P t$
energy transferred = $\text{charge flow} \times \text{potential difference}$	$E = Q V$
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

	thermal energy for a change of state = $\text{mass} \times \text{specific latent heat}$	$E = m L$
	For gases: $\text{pressure} \times \text{volume} = \text{constant}$	$p V = \text{constant}$
	weight = $\text{mass} \times \text{gravitational field strength}$	$W = m g$
	work done = $\text{force} \times \text{distance}$ (along the line of action of the force)	$W = F s$
	force = $\text{spring constant} \times \text{extension}$	$F = k e$
	moment of a force = $\text{force} \times \text{distance}$ (normal to direction of force)	$M = F d$
	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
HT	pressure due to a column of liquid = $\text{height of column} \times \text{density of liquid} \times \text{gravitational field strength}$	$p = h \rho g$
	distance travelled = $\text{speed} \times \text{time}$	$s = v t$
	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
	$(\text{final velocity})^2 - (\text{initial velocity})^2 = 2 \times \text{acceleration} \times \text{distance}$	$v^2 - u^2 = 2 a s$
	resultant force = $\text{mass} \times \text{acceleration}$	$F = m a$
HT	momentum = $\text{mass} \times \text{velocity}$	$p = m v$
HT	force = $\frac{\text{change in momentum}}{\text{time taken}}$	$F = \frac{m \Delta v}{\Delta t}$
	period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
	wave speed = $\text{frequency} \times \text{wavelength}$	$v = f \lambda$
	magnification = $\frac{\text{image height}}{\text{object height}}$	
HT	force on a conductor (at right angles to a magnetic field) carrying a current = $\text{magnetic flux density} \times \text{current} \times \text{length}$	$F = B I l$
HT	$\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$	$\frac{V_p}{V_s} = \frac{n_p}{n_s}$
HT	potential difference across primary coil $\times$ current in primary coil = potential difference across secondary coil $\times$ current in secondary coil	$V_p I_p = V_s I_s$

Give  
Give  
Want

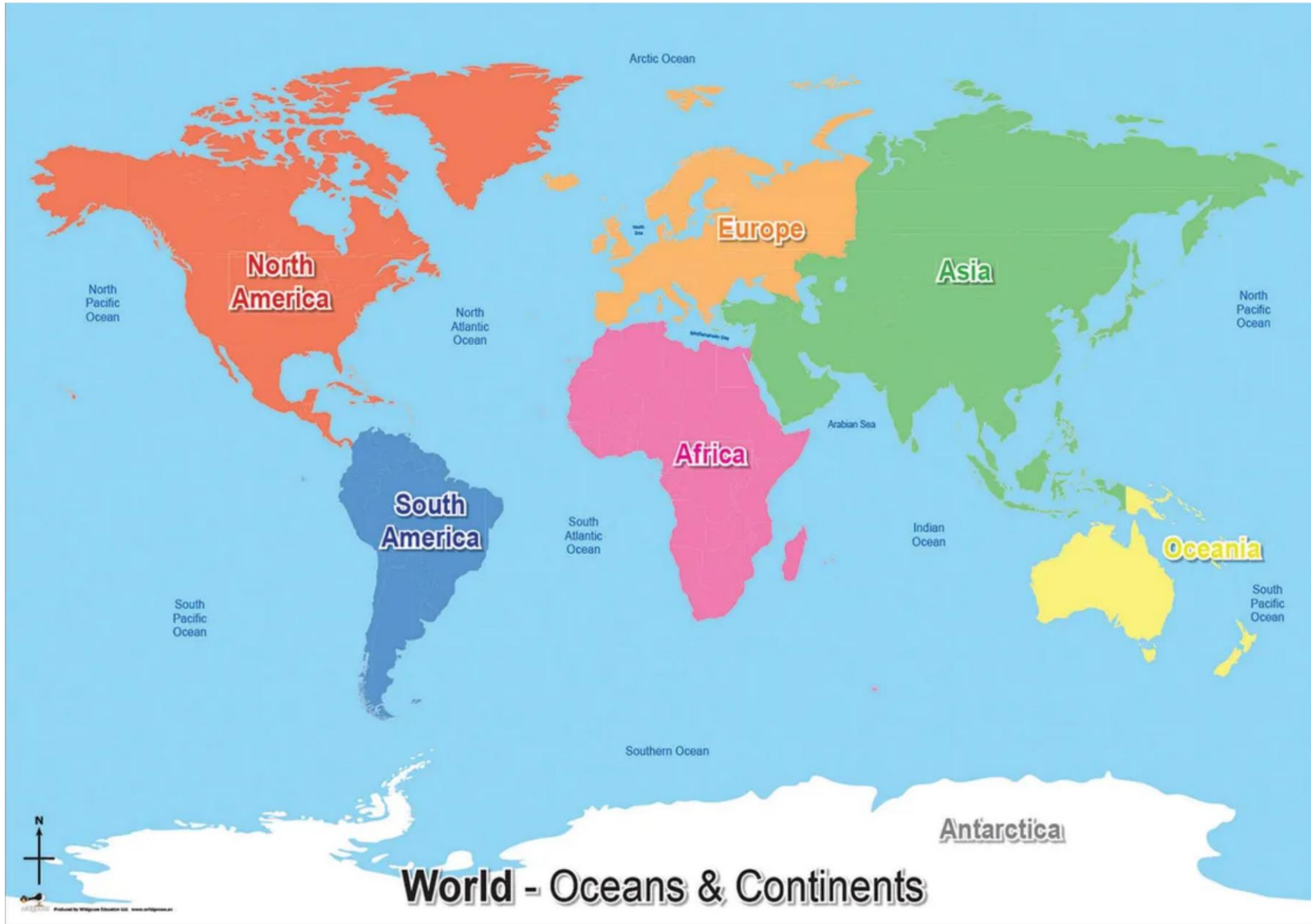
1. What does it give you? What does it want you to calculate?
2. Do you need to rearrange?
3. Do you need to convert?
4. Include the figures
5. Do you need to put it into standard form?
6. Do you need to include the unit?
7. Do you need to give the answer in significant figures?

# WORLD MAP



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# CONTINENTS AND OCEANS



# PROTECTED CHARACTERISTICS



Sex



Sexual Orientation



Age



Disability



Gender Reassignment



Marriage and Civil Partnership



Pregnancy and Maternity



Race



Religion or belief

# BRITISH VALUES



## Democracy

- I can **influence** the decisions that affect me in the school
- I can work **effectively** with others in the school

- I am **free to think** as I see fit

- I have the freedom to **make choices** that affect me but I **recognise** I am **accountable** for **all my actions**

## Liberty



## Respect

- I recognise that **everyone is entitled** to their opinion as long as it **does not promote extremism**
- I understand that everyone is **entitled to a voice** within the classroom and I will **listen to others**

- I understand that the school **rules** are used to mirror **society laws** and must be respected
- I recognise that there will be **consequences for my actions**

## Law



## Responsibility

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

## Tolerance

- 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**



## STAYING SAFE AT SCHOOL

At Bodmin College we want to ensure that all of our students feel happy, safe and supported at all times. Everyone has a duty of care to safeguard your physical and mental health when at school.

During tutor and PSHE lessons you will be taught how to stay safe both in school, outside of school and online. There is always someone from the 'Safeguarding Team' to talk to during school hours, should you need to. However, you can talk to any member of staff that you feel comfortable talking to.

## FULL STOP

Bullying is not ok and we need to work together to stop it from happening. 'Full Stop' is our online bullying report form, that allows you to report any occurrences of bullying, either in school, out of school, or online. You can complete the form through the QR code. A member of the pastoral team will then investigate the incident and behaviour sanctions will be issued if bullying has happened.

## LANYARDS

All staff, visitors and sixth form students wear lanyards whilst on the college campus.



The purpose of lanyards are to keep our college campuses safe places to work and learn in. It is essential that all post-16 students, staff and visitors when on the college premises are easily identified and that we are aware of who everyone is on our campuses during all periods of the day. This is an important employability skill that you need to understand, as many sectors always require visible ID as a safeguarding requirement and a way of registering attendance.



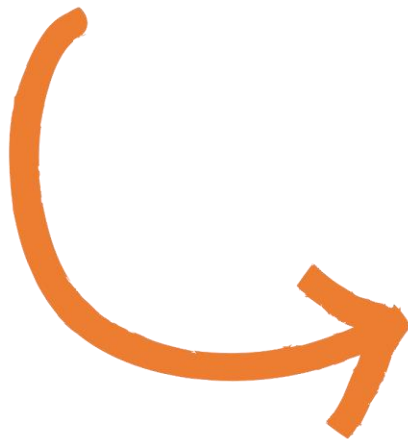


# ONLINE SAFETY

Staying safe online is really important, especially now that we have smartphones and devices connected to the internet all of the time.

In school we use a system called **Smoothwall** so monitor the use of computers and devices connected to the internet. This helps us to keep you and our school community safe.

There are lots of tips to help you keep safe online. Checkout out the SMART Rules here.



## Staying Safe Online

Follow the SMART Rules

**S**

Do not **SHARE** or **SEND** personal information, passwords, images or videos of yourself. If anyone asks you for images or videos tell an adult straight away

**M**

Do not **MEET** anyone who you have only become friends with online. Even a friend of a friend is a stranger

**A**

Do not **ACCEPT** messages, images, videos or friend requests from people you do not know

**R**

Not everything you see online is **RELIABLE**. Find at least 3 different sources to check information is correct

**T**

**TELL** a trusted adult if something happens online that makes you feel worried or uncomfortable

# MENTAL HEALTH & WELLBEING

Five self care tips

Wellbeing

**Internal Pastoral Support**  
Tutor, Director of Key Stage,  
Year Manager, Safeguarding Team

Signposting

**CLEAR**  
Emotional Trauma & Therapy Specialists  
clearsupport.net

External Support  
See websites below:

  
Youngpeoplecornwall.org

**kooth**  
Kooth.com

  
Penhaligonfriends.org.uk


**YOUNGMINDS**  
fighting for young people's mental health  
Youngminds.org.uk

  
Cornwallcarers.org.uk/  
young-carers

**childline**  
ONLINE, ON THE PHONE, ANYTIME  
Childline.org.uk

**withyou**  
wearewithyou.org.uk

**Intercom Trust**  
Intercomtrust.org.uk

 **Get plenty of sleep**  
Teenagers need 8-10 hours of sleep per night

 **Maintain a healthy diet**  
Eating well – a balanced diet full of vegetables and nutrients – can improve your sense of well-being and mood 

 **Exercise regularly**  
Even if it's just a walk around the block or to school - you'll feel better 

Talking can provide stress relief, and can lighten the load of a concern you might be having. Talking about a problem can help to stop you from feeling so overwhelmed.

**"Talk to someone"**

**Make time for yourself**  
Whether it's reading, watching a film or having a bath, making time for yourself is essential 

# Art

## Weeks 1 & 2

- **Monotype** - A monotype is a simple printmaking process that is used to create one off prints.

<https://www.monoprints.com/page/direct-tracing-monotypes>

- **Composition** - Composition is the way in which different elements of an artwork are combined or arranged.

- **Representation** - A type of description or portrayal of someone or something.

- **Ghost print** - A ghost print refers to the faint impression left on a surface after the initial print has been made, often resulting from leftover ink or residual material. This can sometimes transfer onto the next print by mistake.



## Weeks 3 & 4

- **Layering** - Layering in art is the process of building up different elements on top of each other to develop an artwork.
- **Background** - Background in art refers to the background space or setting that an image is placed within. This background can include different objects and textures and can be used to create interesting visual effects.
- **Foreground** - The area of the picture space nearest to the viewer, immediately behind the picture plane, is known as the foreground. An understanding of perspective developed in the early 15th century allowing painters to divide space behind the picture plane into foreground, middle ground and background.
- **Registration** - Registration marks are added to printing plates to ensure proper alignment of colours during the printing process.

## Weeks 5 & 6

- **Balance** - Balance is the distribution of the visual weight of objects, colours, texture, and space.
- **Focal point** - Think of the focal point as the star of your piece. The focal point of a painting is the main thing that you want the viewer to see or understand. Everything else becomes a supporting character visually.
- **Contrast** - Contrast in art is all about creating major visual differences between multiple elements.
- **Harmony** - Harmony in art refers to the use of colours, shapes, and other elements to create a pleasing or balanced effect.
- **Rule of thirds** - the subject matter isn't centred; rather, the main focal point can be to one side or at the top or bottom of the image.

## Weeks 7 & 8

- **Proportion** - The relative size of an object when compared to other objects in the same image.
- **Observation** - Carefully looking at the subject and noticing and recording the shapes, details and tones that you see.
- **Anthropomorphism** - Means attributing human characteristics to something that is not human, or vice versa. It usually takes the form of a melding of human and animal, bird, insect or plant forms.
- **Surrealism** - Is an artistic cultural movement that portrays a wide array of themes of the imagination.

## Weeks 9 & 10

- **Gargoyle** - Gargoyles are carved stone creatures known as grotesques. Often made of granite, they serve an important purpose in architecture.
- **Depth** - Making objects appear closer or farther away and making a two-dimensional image seem three-dimensional.
- **Detail** - Showing care for and attention to every feature or aspect, no matter how small or insignificant.
- **Attribute** - Is a quality, character, or characteristic ascribed to someone or something.



## Weeks 11 & 12

- **Collage** - **Collage** describes both the technique and the resulting work of art in which pieces of paper, photographs, fabric and other ephemera are arranged and stuck **down**.
- **Planning** - The process of organizing thoughts and actions in order to create a visual artwork or design.
- **Process** - Process art is all about creating something new by experimenting with different materials and seeing what happens.

# Computer Science

## Week 1 & 2

### The Print Command

The print() script is set up like this:

*text displayed to user*

```
print("Hello World")
```

- When it is executed (run), the text inside the brackets will display on the screen.
- Unlike the input() script, there will be no pause and the program will immediately execute the next line of code in the program.

## Week 3 & 4

### Input and Variables

When we code, we often need our programs to receive and store inputs from the user. For example, if our program is to add two numbers provided by the user, we need our program to request these numbers and store them, so it can later find their sum.

In python, this is achieved using the input() script, assigned to a variable.

The input() script is set up like this:

*'name' represents a memory location, which will store in the user input*

```
name = input("What is your name?")
```

*text displayed to user*

variable                      input statement

## Week 5 & 6

### Data Types and Maths

Data comes in different forms and in order for computers to store data efficiently and process data correctly, it must be made aware of the type of data that it is storing/processing at any given time.

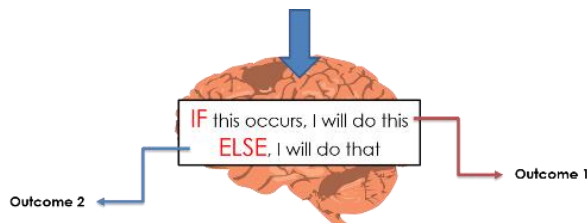
Data Type	Description
String	Combination of different keyboard characters
Integer	Whole number
Real / Float	Decimal number
Boolean	True / False
Character	Single keyboard character

## Week 7 & 8

### Selection

Selection is a programming construct which allows programs to take different pathways (execute different lines of code), depending on a condition. In other words, it allows programs to make decisions.

This is achieved using IF statements.



## Week 9 & 10

### The IF-ELSE statement

IF-ELSE statements are set up like this:

```
1 password = "pa$$wrd"
2 password_attempt = input("Enter your password: ")
3
4 if password == password_attempt:
5     print("Success!")
6 else:
7     print("Incorrect Password")
```

Condition being checked

Code executed if condition is TRUE

Code executed if condition is FALSE

In the program above, the contents of the two variables (password and password\_attempt) are being compared.

- If they match, the program will run the code under the if statement.

## Week 11 & 12

- If they do not match, the program will run the code under the else statement.

A double equals sign is used to see if the contents of the variables match. Remember, the single equal sign operator is used to assign values into variables and so it cannot also be used as a comparison operator – so we use 'double equals'.

The colon that ends the IF statement line, and the indentation of code underneath. These are vital, so remember the colon and indentation when you write IF statements!

# Design & Technology

## Weeks 1 & 2

We are manufacturing our final design in the workshop accurately.

Tools that can help ensure accuracy:

### Steel rule

It is used for measuring lengths and drawing straight lines.

### Tri-square

It is used to mark and measure 90-degree angles on materials such as wood or metal. It helps ensure that cuts are perpendicular and that assemblies are square.

### Centre punch

It is typically used to mark the centre of a point before drilling, preventing the drill bit from slipping.

### Scribe

It is used to mark lines on materials such as metal or plastic. The sharp point scratches the surface to leave a visible mark for cutting or machining.

### Marking Gauge

It is used to mark out lines for cutting or other operations. The gauge can be adjusted to set the distance from the edge, ensuring consistent measurements across a workpiece.

## Weeks 3 & 4

We are manufacturing our final design in the workshop using hand tools safely.

### Cutting tools commonly used in the workshop: Tenon Saw

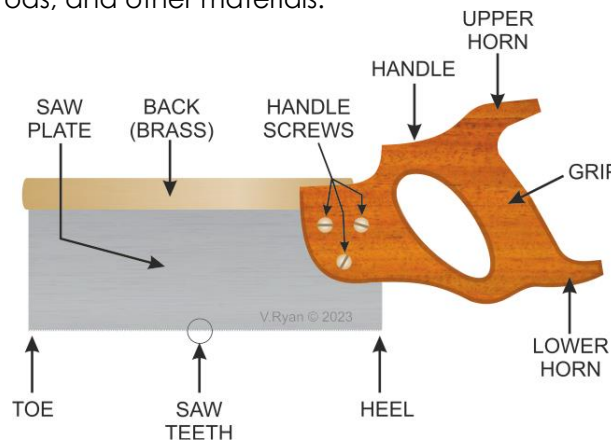
A tenon saw is a small, fine-toothed saw with a stiffening rib along its back, used for making precise cuts in woodworking, especially for tenons and other joints.

### Coping Saw

A coping saw is a saw with a thin, flexible blade held in a U-shaped frame, designed for cutting intricate shapes and curves in wood, plastic, or metal.

### Hack Saw

A hack saw is a hand tool with a fine-toothed blade, used primarily for cutting metal pipes, rods, and other materials.



## Weeks 5 & 6

We are manufacturing our final design in the workshop using power tools safely.

### Power tools commonly used in the workshop: Pillar Drill

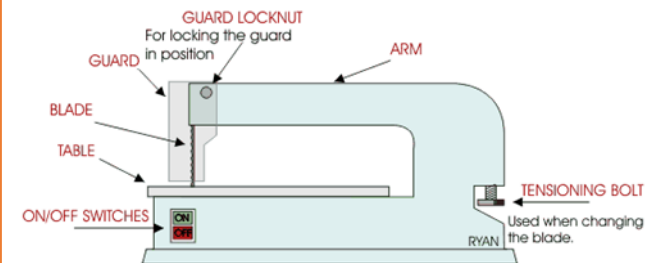
A pillar drill, also known as a drill press, is a stationary machine with a vertically aligned drill bit used for making precise holes in various materials.

### Belt Sander

A belt sander is a power tool with a continuous loop of abrasive sandpaper, used for rapidly sanding and smoothing large surfaces of wood or other materials.

### Scroll Saw

A scroll saw is a small electric or pedal-operated saw with a fine blade, used for making intricate cuts and detailed curves in wood.



# Design & Technology

Weeks 7 & 8

**We are decorating our final product.**

## **CAD (Computer-Aided Design)**

CAD (2D & 3D) is the use of computer software to create, modify and test a design digitally.

## **CAM (Computer-Aided Manufacturing)**

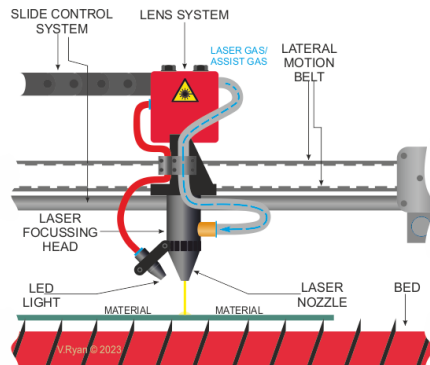
Using computer software and machinery to control and automate the manufacturing process, converting designs from CAD into manufacturing instructions.

## **CNC (Computer Numerical Control)**

A method of automating control of machine tools through computer programming, where pre-programmed software dictates the movement of factory tools and machinery to create precise parts and products.

## **Laser Cutting**

Laser cutting is a technology that uses a high-powered laser beam to cut materials with high precision and speed, commonly used for metals, plastics, wood, and other materials.



Weeks 9 & 10

**Assessment week:**

- Identify key equipment and technical skills
- Recognise H&S rules
- Recall 'the manufacturing process
- Consider environmental issues

Weeks 11 & 12

**We are applying a finish to our product.**

**Common types of wood finishes:**

## **Varnish**

Varnish is a clear, hard protective finish that is typically applied over wood stains to provide a durable, glossy, and sometimes UV-resistant coating.

## **Oil Finish**

Oil finishes, such as linseed oil, penetrate the wood to provide a rich, natural appearance while offering protection from moisture.

## **Stain**

Wood stains are used to change the colour of the wood while highlighting its natural grain, typically followed by a protective topcoat like varnish or polyurethane.

## **Wax**

Wax finishes provide a soft, natural sheen and light protection, often used as a topcoat over other finishes for added depth and sheen.

## **Acrylic Finish**

Acrylic finishes are water-based and provide a clear, durable coating that resists yellowing over time, available in various sheens.

GRADE	GRIT SIZE	DENSITY
EXTRA COARSE	60 TO 40	S.2, 2, 3
MEDIUM COARSE	80 TO 100	
MEDIUM	120 TO 180	1, F.2, m.2
FINE	220 TO 280	2/0, 0, 1
VERY FINE	320 UPWARDS	FLOUR

# Drama

## Weeks 1 & 2

### Key Words

- Physical Theatre – a style of theatre that uses predominantly movement to tell the story
- Safety
- Movement
- Collaboration – working together
- Ensemble – a group of performers working together to achieve the same goal.



## Weeks 3 & 4

### Key Words

- Control – demonstrating focus and strong command over your movement
- Facial Expression – using your facial movements to express an emotion
- Gesture – movement of your hands, head or body to express something
- Projection – performing out to the audience
- Levels – Different heights e.g. standing or sitting to convey meaning on stage.

## Weeks 5 & 6

### Key Words

- Choreography – the gathering and organization of movement into order and pattern.
- Proxemics – the use of space between actors and how that use of space communicates their relationship to the audience.

## Weeks 7 & 8

### Key Words

- Physical Theatre
- Safety
- Movement
- Collaboration
- Control
- Facial Expression
- Gesture

## Weeks 9 & 10

### Key Words

- Imagination – the ability of the mind to be creative and resourceful
- Soundscape – using sound to create atmosphere or location
- Monologue – a speech by one character
- Antagonist – the opposer or combatant working against the protagonists main goal and creating conflict.

## Weeks 11 & 12

### Key Words

- Performance
- Physical theatre
- Movement
- Facial expressions
- Gesture
- Text

## Week 1

### Chapter One – The Sound of the shell

**Utopia** – an imagined state or society in which everything is perfect.

**Dystopia** – an imagined state or society in which there is great suffering and injustice, typically one that is totalitarian.

**Microcosm** – a community, place or situation regarded as encapsulating the characteristics of something larger than itself. For example, a village could be a microcosm for a city.

**Symbolism** – when a writer uses a character, object or setting to represent something much wider. *For example, Piggy's glasses become a symbol of his intelligence.*

**Author** – William Golding

#### **Historical Context:**

- Having witnessed the true horrors of war, Golding (the author) lost faith in the idea that humans are inherently good and innocent. He believed that even children could be evil.
- LOTF was published in 1954, therefore, Golding was inspired/affected by:
  - Time served in the Navy during WWII
  - The atomic bomb (Hiroshima & Nagasaki)
  - The Cold War
  - British Imperialism & Colonialism

#### **Key Quotations:**

- "In colour the shell was deep cream, touched here and there with fading pink (...) covered with a delicate embossed pattern."
- "The toy of voting was almost as pleasing as the conch. Jack started to protest but the clamor changed from the general wish for a chief to an election by acclaim of Ralph himself."

## Week 2

### Chapter One – The Sound of the shell

**Foreshadowing** – when a writer predicts something to happen later in the story.

**Democracy** - a system of government by the whole population or all the eligible members of a state, typically through elected representatives.

**Civilisation** – the stage of human social development that is considered its most advanced.

#### **The seven aspects of civilisation:**

1. Economy & trade
2. Religion
3. Social structure & family
4. Geography & agriculture
5. Government & leaders
6. Arts & education
7. Science & technology

**Garden of Eden** – a reference to a biblical paradise, almost like the island.

**Climax** – the highest point of tension in a story which often leads to a turning point.

#### **Context:**

- 'Lord of the Flies' is a phrase that translates to Beazelbub; the 'Prince of Demons'.
- Biblical reference: Jesus exorcises a demon into a herd of pigs.
- Set with the backdrop of war.

#### **Key Quotations:**

- "In colour the shell was deep cream, touched here and there with fading pink (...) covered with a delicate embossed pattern."
- "The toy of voting was almost as pleasing as the conch. Jack started to protest but the clamor changed from the general wish for a chief to an election by acclaim of Ralph himself."

## Week 3

### Chapter Two – Fire on the mountain

**Dichotomy** – a division or contrast between two things that are or are represented to be entirely different. There is a dichotomy between Jack and Ralph, savagery and civilisation and good and evil.

**Savagery** – the condition of being cruel, primitive and uncivilised.

#### **Symbols:**

- Fire – hope, rescue and security
- The Conch – power, democracy, free speech
- Piggy's Glasses – intelligence
- The Beast – boys' fear of being on the island without any 'grownups'.

**Rising action** – the moment when tension begins to increase. This is when the boys realise one of them is 'missing'

**Chasm** – a profound difference between two people, ideas and feelings. There is a chasm between Jack's ideas and Ralph's ideas.

**Hierarchy** – a system in which members of an organization or society are ranked according to relative status or authority. The boys begin to create a hierarchy by establishing Ralph as leader and Jack to lead the hunters.

**Primal** – relating to an early stage of evolutionary development. Jack becomes more primal as he becomes obsessed with hunting.

#### **Key Quotations:**

- Piggy "Here – let me go!" His voice rose to a shriek of terror as Jack snatched the glasses off his face. "Give 'em back! I can hardly see! You'll break the conch!"
- The separate noises of the fire merged into a drumroll that seemed to shake the mountain.



## Week 4

### Chapter Three – Huts on the beach

**Characterisation** – the creation and construction of a fictional character.

**Contrast** – when character/setting are presented or constructed differently. There is contrast between the way Jack and Ralph are characterised. Jack is more primal, whereas Ralph is more civilised.

**Darwin's theory of evolution** – Darwin put forward the theory that all life, including humans, has evolved from more primitive forms.

- The transformation of Jack to more primitive, animalistic forms links to this theory.

**Primitive** – something or someone in the very early stages evolutionary or historical development. Jack is considered primitive because he is obsessed with hunting, rather than developing shelter or helping to get rescued.

**Devolution** – to descend to a lower or worse state.

**Devolve** – to pass into a worse state; to degenerate.

**Society** – a group of people living together in a more or less ordered community.

#### **Key Quotations:**

- Jack himself shrank at this cry with a hiss of indrawn breath, and for a minute became less a hunter than a furtive thing, ape-like among the tangle of trees.
- 'Green candles,' said Jack contemptuously, 'we can't eat them. Come on.'
- Simon dropped the screen of leaves back into place.

## Week 5

### Chapter Four – Painted faces and long hair

- Sigmund Freud developed a psychological theory of: **The Superego, the Ego and the Id.**
- The Id drives us to fulfil our basic urges and needs as quickly as possible; these urges are usually aggressive, perhaps even savage. Golding characterised Jack and Roger to represent this.
- The Superego is the part of the brain known as the conscience. It is completely focused on doing what is right. This is usually enforced through guilt. Golding characterised Simon and Piggy to represent this.
- The Ego is the part of the mind that makes sure the ID is satisfied, but that it is satisfied in a realistic way which doesn't upset the morality of the superego. Golding characterised Ralph to represent this.

**Demise** – the death or gradual decline in something. Civilisation on the island suffers a demise as the boys begin to ignore the rules created at the beginning. As a result, the boys become more and more savage. The following aspects of civilisation start to crumble:

- Social structure & family
- Geography & agriculture
- Government & leaders
- Arts & education
- Science & technology

#### **Key Quotation:**

- "Roger gathered a handful of stones and began to throw them."

## Week 6

### Chapter Five – Beast from water

**Metaphor** – when a writer literally compares one thing to another.

- The beast continues to be used as a metaphor for the boy's fear and their inherent evil.
- In a religious reading, for instance, the beast recalls the devil
- In a Freudian reading, it can represent the id, the instinctual urges and desires of the human unconscious mind.
- The monster rising from the sea terrifies the boys because it represents the beast's emergence from their own unconscious minds.

**Allegorical tale** – when a story has a literal meaning and a deeper, hidden meaning, usually a moral that teaches us something.

- **Literal meaning:** boys on an island who strive for survival, power and leadership.
- **Deeper meaning:** the story is a message of society and humanity as a whole.

#### **Key Quotation:**

"Bollocks to the rules! We're strong – we hunt! If there's a beast, we'll hunt it down! We'll close in and beat and beat and beat - !" – Jack

### Chapter 6 (half) – Beast from Air

**Mankind's essential illness** – this is the evil side that Golding believes resides in every human. Golding intentionally reminds his readers of the backdrop of the war that is happening elsewhere in the world and the real savagery/'beast' that exists in man-kind.

## Week 7

### Chapter Six (second half) – Beast from air

**Three-Part Thesis** – a body of writing at the beginning of an essay that explores:

1. The overall purpose of the literature
2. What the writer uses to achieve this purpose and your overall arguments
3. Explore how the focus is presented at the beginning and end of the story

#### **How to write a three-part thesis for Lord of the Flies:**

1. In William Golding's **allegorical tale** 'Lord of the Flies', he explores how the **absence of civilisation can lead humankind to savagery**.
2. Golding utilises the characterisation/theme of \_\_\_\_\_ as a vehicle to express/illuminate/criticise/magnify/manipulate/chastise...
3. At the beginning...at the end...

### Chapter Seven – Shadows and tall trees

#### **Key Quotation:**

"Robert snarled at him. Ralph entered into the play and everybody laughed. Presently they were all jabbing at Robert who made mock rushes... The circle moved in and round. Robert squealed in mock terror, then in real pain... The butt end of a spear fell on his back as he blundered among them."

**Golding's purpose:** Golding implies that every individual, however strong his or her instinct toward civilization and order, has an undeniable, innate drive toward savagery as well.

## Week 8

### Chapter Eight – Gift for the darkness

**Juxtaposition** – two things being seen or placed near to each other with contrasting effect. Civilisation and savagery are two juxtaposed ideas, and Jack and Ralph are two juxtaposed characters who embody these ideas.

**Epitome** – a person or thing that is the perfect example of particular quality or type, e.g, Jack becomes the epitome of savagery whereas Piggy becomes the epitome of civilisation.

**Catalyst** – something that speeds up the reaction of other events. This chapter, the divide of the two groups of boys, becomes a **catalyst** for the decline of civilisation.

#### **Golding illuminates:**

- "Humanity is inherently wicked and destructive"
- "Humanity requires rules and law. Without it, humans return to their natural primitive, savage state."
- "Fear is a catalyst for violence and the destruction of civilisation."

**Morality** – principles concerning the distinction between right and wrong or good and bad behaviour. Jack is obsessed with killing and showing aggression which suggests he is of poor morals, whereas Ralph, Simon and Piggy wanted to the right thing to get rescued.

#### **Key Quotations:**

"And about the beast. When we kill we'll some of the kill for it. Then it won't bother us, maybe."

At last Simon gave up and looked back; saw the white teeth and dim eyes, the blood – and his gaze was held by that ancient, inescapable recognition.

## Week 9

### Chapter Nine – A view to death

**Foreboding** – a feeling that something bad will happen; fearful apprehension. For example, a dark and gloomy night can create a sense of foreboding.

**Anarchy** – a state of disorder due to an absence or non-recognition of authority or rules. This is clear when the boys are out of control.

**Mob mentality** – the idea that people will adjust their own personal views in order to fit the group they are in. Some of the characters are seen to shift their morals in order to fit into the crowd.

**Irony** – when words or actions provide the opposite outcome that what was intended. The boys have ended up on the island having been evacuated from a warzone and a time of division, only to recreate this themselves on the island.

**Pathetic fallacy** – when a writer manipulates the description of weather to represent the mood in the story.

#### **Key Quotations:**

So they had shifted camp then, away from the beast. As Simon thought this, he turned to the poor broken thing that sat stinking by his side. The beast was harmless and horrible; and the news must reach the others as soon as possible.

Simon was crying out something about a dead man on a hill... The sticks fell and the mouth of the new circle crunched and screamed. The beast was on its knees in the centre, its arms folded over its face. It was crying out against the abominable noise, something about a body on the hill... At once the crowd surged after it, poured down the rock, leapt on to the beast, screamed, struck, bit, tore.

## Week 10

### How to write a three-part thesis for Lord of the Flies:

1. In William Golding's **allegorical tale** 'Lord of the Flies', he explores how the **absence of civilisation can lead humankind to savagery**.
2. Golding utilises the characterisation/theme of \_\_\_\_\_ as a vehicle to express/illuminate/criticise/magnify/manipulate/chastise...
3. At the beginning...at the end...

### How to layer analysis for the main body of a literature essay

- **Contextualise quotation:** *At this moment in the story...*
- **Explain what quotation suggests:** *This could suggest that...*
- **Single word quotations analysis:** *The word "\_\_\_\_\_" could tell the reader that...*
- **Multiple interpretations analysis:** *While on the one hand the word could suggest \_\_\_\_\_ on the other hand it may also imply that...*

### Character

- **Ralph** – leader, ineffective, confident, protagonist, immature, democratic, passive
- **Piggy** – victim, intelligence, guide, caring, lower class, unchanged,
- **Jack** – violent, bully, leader, antagonist, irresponsible, dictator, active, animalistic
- **Simon** – sacrifice, perceptive, weak, appreciative of the natural world
- **Sam and Eric** – Sam'n'Eric, samneric, identity, hopelessness,
- **Roger** – sadistic, reckless, brutal, irresponsible

## Week 11

### WHY/Authorial Intent Verbs to use in analysis

**Illuminate** – to make something visible/to shine a light on something.

**Emphasise** – to place special importance on something.

**Educate** – to give intellectual, moral and social instruction.

**Promulgate** – to make widely known.

**Communicate** – to share information, ideas and ideologies.

**Reveal the importance of...**

**Foreground** – to make something more visible.

**Manipulate** – to handle and control something in a skilful way

**Criticise** – to indicate the faults in something in a disapproving way

**Expose** – to make something visible by uncovering something.

**Galvanise** – shock or excite an audience into action against something.

**Advocate** - publicly recommend someone or something.

## Week 12

### Success criteria for an English essay:

- Construct a three-part thesis and approach the essay in four parts.
- Main body with two different areas of exploration/arguments
- Front load with writer's name and intention. (use the intent verbs. Warns, illuminates, foregrounds, depicts, suggests, resonates...)
- Use the academic essay phrasing. "It could be argued...in many ways this suggests"
- Layer analysis using "further, alternatively, also....."
  - Zoom in on single word quotations "The word "\_\_\_\_\_" could foreground the notion that..."
  - Offer multiple interpretations "While it could suggest...it might also suggest that..."
- Clear and concise conclusion
  - Overall..
  - Ultimately..
  - This leaves us as readers to assume that...because...

### How to write your paragraphs:

1. Begin with writer's name
2. Answer the question
3. Include a quotation
4. Explore writer's intent of words and phrases with subject terminology
5. Explore/focus on writer purpose
6. Link back to thesis/question

# Food

## Weeks 1 & 2

**Practical** – Sausage Rolls

**Puff Pastry** - A light, flaky pastry made by layering dough with butter and folding it several times.

**Egg wash** - A mixture of beaten egg and sometimes water or milk, brushed onto pastry before baking.

**Secondary processing** - is when the primary product is changed to another product

**Iron** - Needed to make haemoglobin in the red blood cells, requires Vitamin C for absorption

**Basic equipment** –

**Chopping board** – use for cutting and preparing food items on

**Sharpe knife** – used to cut ingredients

**Mixing bowl** – used for mixing items

**Baking tray** - is a flat, rectangular metal pan placed in an oven and used for baking.

**Greaseproof paper** – paper which is used to line tins and baking trays with to prevent food items from sticking

**Iron deficiency - anaemia** is caused by lack of iron, often because of blood loss or pregnancy. It's treated with iron tablets and by eating iron-rich foods.

## Weeks 3 & 4

**Practical** – Lemon Curd

**Basic equipment** –

**Sharpe knife** – used to cut ingredients

**Saucepan** – used for heating foods on the hob

**Wooden spoon** – used for mixing items

**Chopping board** – use for cutting and preparing food items on

**Lemon juicer** – used to extract juice from lemons or other citrus fruit.

**Coagulation** - The setting or joining together of lots of denatured protein molecules during heating or change in PH. An irreversible change to the appearance and texture of protein foods.

**Denature** - Chemical bonds in the protein food have broken, causing the protein molecule to unfold and change shape.

**Setting** – when a liquid set form/to a solid

**Poultry** – A domesticated bird used for food. Varieties include chicken, turkey, goose, duck etc

**Curd** - is a cooked mixture of eggs, lemon juice and zest, sugar, and butter. It's a versatile lemony spread or citrusy topping

## Week 5 & 6

**Practical** – Chicken Tikka Curry

**Basic equipment** –

**Mixing bowl** – used for mixing items

**Sharpe knife** – used to cut ingredients

**Saucepan** – used for heating foods on the hob

**Wooden spoon** – used for mixing items

**Chopping board** – use for cutting and preparing food items on

**Masala** - Definitions of key terms - A mixture of spices ground into a paste or powder, used in Indian cooking. The tikka masala sauce is made with a tomato base and a blend of spices.

**The Maillard reaction** - is the reaction between sugars and proteins from the impact of heat.

**Yogurt** - yogurt is a food produced by bacterial fermentation of milk

**Cross contamination** - the process by which bacteria or other microorganisms are unintentionally transferred from one substance or object to another, with harmful effect.

**Nutritional requirements** -the amount nutrients needed to support normal health, growth and development

# Food

## Weeks 7 & 8

### Practical – Lemon Posset

**Lemon posset** - Lemon posset, a classic British dessert made with just three ingredients -cream, sugar, and lemon juice

Lemon juice acidifies the cream, causing the proteins in the cream to clump.  
The sugar adds viscosity, giving the posset

**Pasteurisation** – the process of heating foods to a specific temperature of a certain amount of time, in order to kill any bacteria

**Cream** - Cream is a dairy product composed of the higher-fat layer skimmed from the top of milk before homogenisation.

**Boiling** – a liquid which is at 100c and has visual bubbles

### Basic equipment –

**Chopping board** – use for cutting and preparing food items on

**Mixing bowl** – used for mixing items

**Grater** – Used to grate foods into fine pieces.

**Sharpe knife** – used to cut ingredients

**Lemon juicer** – used to extract juice from lemons or other citrus fruit.

## Weeks 9 &10

### Assessment Week

- Identify where food comes from and its classification
- Recall practical techniques
- Consider food safety and scientific terms
- Recognise dietary conditions and basic nutrition

## Weeks 11 &12

### Theory

**Homogenisation** - a process by which the fat droplets from milk are emulsified and the cream does not separate.

**Cheese categories** – fresh, soft, semi, hard, blue and processed

**Omega 3** – types of fatty acids which the body cannot make itself, good for the heart

### Freshness of fish

- Bright red gills
- Good fresh smell -should not smell of fish, just of the sea.
- Fins and scales in good condition.
- Firm flesh

### Evaluation –

- The quality of the products that you have made.
- The skills that you have developed.
- Equipment that you have learned how to use.
- Skills or processes that you need to improve.
- How you could improve the way in which you work in practical lessons.

**Reflect** – What went well?

**React** - Even better if

**Retain** – Embedding knowledge

# French

## Week 1 – School subjects

Qu'est-ce que tu étudies?	What do you study?
étudier	to study
apprendre	to learn
le théâtre	drama
les sciences	science
le commerce	business studies
le dessin	art
les langues	languages
l'EPS	PE
la religion	RE
la technologie	DT
actif/active	active
animé(e)	lively / animated
pratique	practical
inutile	useless / pointless
utile	useful
difficile	hard / difficult
facile	easy
passionnant(e)	exciting
heureux/heureuse	happy
strict(e)	strict
travailleur/travailleuse	hard working
ça m'est égal	I don't mind
la classe	class
le cours	course
les études	studies

## Week 2 – School description

Qu'est-ce qu'il y a?	What is there?
dans mon lycée, il y a...	In my school there is
mon collège a...	My school has
une cour	a playground
un gymnase	a gym
une piscine	a pool
une bibliothèque	a library
un terrain de football	a football field
un bureau	an office
le bâtiment	a building
public/privé	state/private
nouveau/nouvelle	new
ancien/ancienne	old
moderne	modern
spacieux/spacieuse	spacious
petit(e)	small
ni...ni...	it is neither...nor
non plus	neither
un élève	a pupil
un étudiant/une étudiante	a student
un(e) professeur(e)	a teacher
un(e) directeur/rice	a headteacher
un stylo	a pen
un cahier	an exercise book
les devoirs	homework
une chaise	a chair
une table	a table

## Week 3 – School Uniform

Qu'est-ce que tu portes?	What do you wear?
porter	to wear
mettre	to put on
une chemise	a shirt
une cravate	a tie
une veste / un blazer	a jacket / blazer
une jupe	a skirt
un t-shirt	a t-shirt
un chapeau	a hat
une robe	a dress
le pantalon	trousers
les chausseuses	shoes
confortable	comfortable
pratique	practical
cher	expensive
nécessaire	Necessary

# French

## Week 4 – School Rules

Les règles	The rules
les règles	the rules
il n'est pas permis	it is not permitted
nous devons	we have to
c'est interdit	it is forbidden
on ne doit pas	one must (not)
on ne devrait pas	one should (not)
utiliser le téléphone portable	use a mobile phone
menacer	threaten
enregistrer	record
envoyer des messages	send messages
porter des bijoux	wear jewellery
être ponctuel	to be on time
le comportement	behaviour

## Week 5 – Ideal School

Dans mon collège idéal	In my ideal school
si c'était possible	if it were possible
j'aimerais	I would like
il y aurait	there would be
il aurait	it would have
je pourrais	I could / it could
The conditional tense – no chop just add	
I	ais
You (singular)	ais
He / she	ait
We	ions
You (plural)	iez
They	aient

## Week 6 – Future Study

Tes projets	Your plans
le baccalauréat	A Levels
l'option	choice
le succès	success
l'échange	exchange
la liberté	freedom
le travail	work
la note	grade / mark
les stages professionnels	work experience
le test	test
l'examen	Exam

## Week 7 – Future Aspirations

Tes rêves	Your dreams
voyager	to travel
prendre une année sabbatique	to take a sabbatical year
fonder une famille	to start a family
avoir des enfants	to have children
travailler	to work
comme bénévole	as a volunteer
avec des enfants	with children
à l'étranger	abroad

## Week 8 – The Imperfect tense

Qu'est-ce que tu faisais?	What did you do?
j'allais	I used to go / I went
j'étais / ils étaient	I was / it was / they were
je voyais	I used to see
il y avait	there was / were
The imperfect tense – chop and swap	
I	ais
You (singular)	ais
He / she / it	ait
We	ions
You (plural)	iez
They	aient

## Week 9 – Describing a picture

Décris la photo	Describe the photo
il y a	there is / are
je vois / je peux voir	I see / I can see
il est / ils sont	he / she is / they are
dans le salon / à la campagne	in the lounge / countryside
dans la ville / le bureau	in the town / office
il fait chaud / soleil	it is hot / sunny
il pleut	it is raining
il neige	it is snowing
un homme	a man
une femme	a woman
un garçon / une fille	a boy / girl

# French

## Week 10 - Comparing Schools

Comparisons	
plus ... que	more ... than
moins ... que	less ... than
aussi ... que	as ... as
mieux que	better than
pire que	worse than
Superlatives	
le meilleur	the best thing
le pire	the worst thing
le plus ...	the most ... thing
le bon	the good thing
le mauvais	the bad thing

## Week 11 – Developing our answers

High-level connectives	
parce que	because
étant donné que	because / as
puisque	
comme	
cependant	however
donc	so / therefore
de même	also / likewise
en outre	furthermore

## Week 12 – Easter

Le Pâques	Easter
la Semaine Sainte	Holy Week
le Carême	<i>Lent</i>
le printemps	Spring
le chocolat	chocolate
l'œuf	egg
le lapin	rabbit
une bougie	a candle
un char	a float (in a procession)
une croix	cross
un crucifix	<i>a crucifix</i>
les fleurs	the flowers
un pénitent	<i>a penitent</i>

## Preparing for the speaking assessment

Before the assessment:

Experiment with the following techniques to revise the vocabulary and structures in this knowledge Organiser

- Use the look-cover-write-check technique to test yourself
- Create flashcards with the English on one side and the Spanish on the other – test yourself and get a friend to test you
- Practise bringing the vocabulary together to create your own written and spoken answers
- Give the Knowledge Organiser to a friend and get them to test you
- Practise the vocabulary on Quizlet

During the test:

- Describe the people, location and activity
- Remember the rule of 3 – develop your answer
- Give an opinion, a reason and a contrasting opinion
- Be brave! Say something! More marks are awarded for communication than anything else – just go for it!



# Geography

## Week 1

**Climate change:** a long-term change in the Earth's climate, especially due to an increase in the average atmospheric temperature.

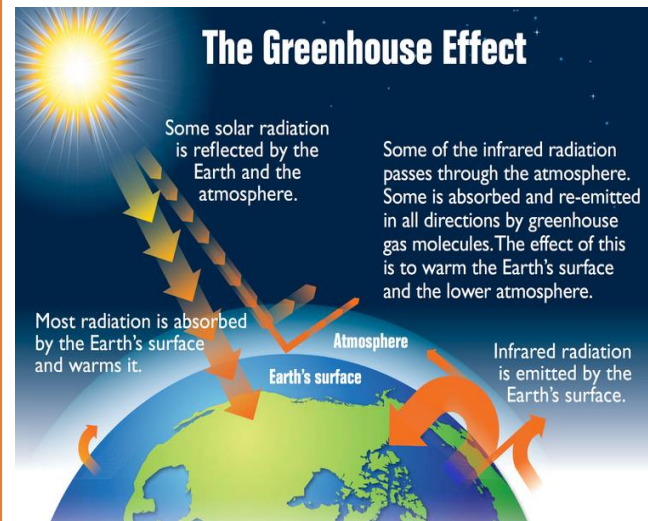
**Carbon footprint:** a measurement of the greenhouse gases individuals produce through burning fossil fuels.

**Natural causes of climate change:** orbital change; solar output and volcanic activity.

**Human causes:** burning of fossil fuels, deforestation and the greenhouse effect.

**Deforestation:** the cutting down of trees for human benefit.

## Week 2



## Week 3

**Mitigation:** actions to reduce or prevent the emission of greenhouse gases, such as alternative renewable energy production, using new technologies such as carbon capture, planting trees and international agreements.

**Adaptations:** actions by individuals, communities and national/international authorities to manage the unavoidable impacts of climate change such as changing agricultural systems, managing water supply and reducing the risk from sea level rise.

**Afforestation:** planting trees to mitigate the effects of climate change and support biodiversity.

## Week 4

**Ecosystem:** a natural system made up of plants, animals and the environment that are symbiotic (work together) to survive.

**Producers:** convert energy into food from the natural environment. E.g. grass.

**Consumers:** get energy from the producer. E.g. snail.

**Decomposers:** break down plant and animal material and return the nutrients to the ecosystem. E.g. bacteria.

**Food chain:** a simple diagram showing the connection between producers and consumers.

## Week 5

**Biotic factors:** factors in an ecosystem that are living e.g. fish.

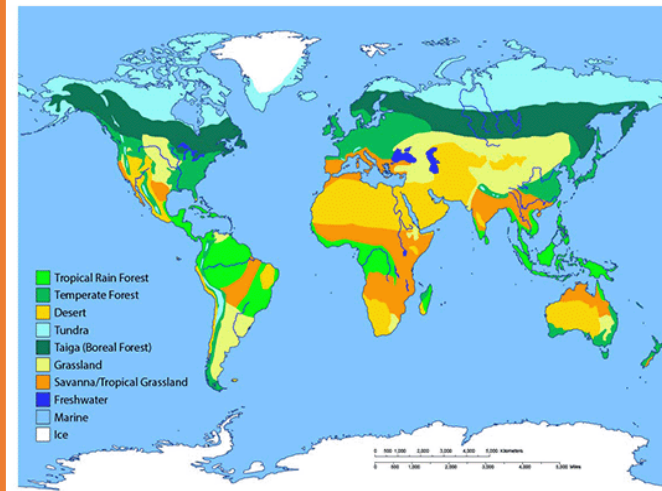
**Abiotic factors:** factors in an ecosystem that are not living but still effect it e.g. soil, temperature and light.

**Natural changes to ecosystems:** disease and extreme weather events.

**Human changes to ecosystems:** fertilisers and eutrophication, ponds drained for human consumption, woods cut down, hedgerows removed.

Change in an ecosystem will affect the balance.

## Week 6



# Geography

## Week 7

**Adaptation:** changing a characteristic to be able to survive in a location.

**Ferns:** have no flowers to not expend energy, have big leaves to get in as much light as possible, have waxy leaves to get water to their roots.

**Kapok trees:** grow tall to reach sunlight, thin to not waste energy and have smooth bark to allow water to get to roots.

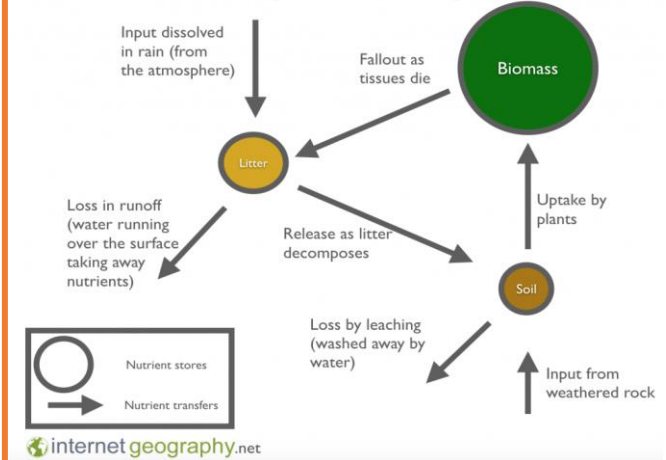
**Sloth:** has brown fur to be camouflage, claws to protect itself from predators and moves slowly to not be seen.

## Week 8

- Deforestation in Malaysia happens for logging, commercial farming, mineral extraction, population growth and subsistence farming.
- The impacts on the natural environment include economic losses, soil erosion and the contribution to climate change.
- TRFs are important as they provide homes for people, habitats for animals, food, medicine, control the climate and for water sources.
- Selective logging, conservation, education, ecotourism, international agreements and hardwood forestry helps to protect them.

## Week 9

### The nutrient cycle in the tropical rainforest



## Week 10

- Hot deserts are found approximately 30 degrees north and south of the Equator. Notable examples include the Sahara Desert in North Africa and the Thar Desert in India and Pakistan.
- To be considered a desert an area must receive less than 250mm of rainfall per year.
- Although hot deserts reach high temperatures of around 45C in the day during summer they can be very cold at night.
- Camels have adapted to have long eyelashes to keep out sand, tough hooves to prevent burning and brown fur to blend in.

## Week 11

**Opportunities for development:** businesses that help people to make money and therefore improve the place they live.

- **Tourism** – safaris on camels and jeeps, local guides and festivals.
- **Mineral extraction** – gypsum for plaster, phosphorite for fertiliser.
- **Coal, oil, wind and solar energy.**
- **Farming** – wheat and cotton due to canals being built.

**Challenges to development:** Things that make it difficult for businesses in the desert e.g. accessibility, extreme temperatures, water supply and population.

## Week 12

**Desertification:** the process of land being turned into a desert, due to the soil eroding. This can be natural or by human activities.

### Managing desertification:

- Water and soil management projects.
- Creation of national parks to protect biodiversity from population growth.
- Planting trees to hold soil structure.
- Using appropriate technology for an area and its income e.g. stone walls to trap water and soil.

**Biodiversity:** the variety in different plants and animals in an ecosystem.

# History

## Week 1

### What problems did enslaved Africans face after emancipation?

- President Lincoln announced the end of slavery in 1863, it became law under the 13th amendment.
- 'Jim Crow' Laws were passed in each state throughout the South of the USA. It established **segregation** which kept Black Americans separate from White Americans.
- The brutalities of white race prejudice continued. It was illegal for Black African Americans to serve on juries, testify against White Americans or serve in state militias.
- Many living in the South lived in rural poverty, forced to rent land from former slave owners.

## Week 2

### What did early activists achieve for African-Americans?

- **WEB Du Bois** – an early Civil Rights Activist that helped establish the NAACP (National Association for the Advancement of Coloured People).
- **Booker T Washington** – built the Tuskegee Negro Normal Institute. He became a national figure, that would advise the American Government on Civil Rights.
- **Marcus Garvey** – figurehead of the early Civil Rights movement from Jamaica. He founded the UNIA (Universal Negro Improvement Association).

## Week 3

### What did the NAACP achieve for African-Americans?

- Founded by WEB Du Bois.
- The organisation aimed to fight for the abolition of segregation, discrimination in housing, education, employment, voting and transportation.
- **Montgomery Bus Boycott (1955)** - outlawed the segregation of public transportation services.
- **Brown vs Board (1954)** - outlawed the segregation of public schools.
- **Little Rock Crisis (1957)** - highlighted that segregation was still an issue despite being outlawed.

## Week 4

### What did Martin Luther King achieve for African-Americans?

- Found the SCLC (Southern Christian Leadership Conference). An organisation that drew on the power and independence of black churches to support their Civil Rights campaigns.
- Aimed to use peaceful protest to reach their goals of Civil Rights for all.
- He organised marches like the **Birmingham Campaign and the March on Washington** to highlight the need for a Civil Rights Act.
- In 1964, he got what he had campaigned for – The Civil Rights Act, which ended segregation of public places, banned employment discrimination and gave Black Americans the right to vote.

## Week 5

### What did Malcolm X achieve for African-Americans?

- After 1965, many Civil Rights Activists began to turn towards a more violent approach to achieve their goals of equality.
- Malcolm X provided an alternative form of protest.
- He believed that violence could be used to some extent to gain further equality for Black African Americans.
- Malcolm X initially was part of the Nation of Islam but left the organisation in 1964. He felt that the Nation of Islam were not making enough progress.
- Malcolm X was assassinated in 1965 by three members of the Nation of Islam.

## Week 6

### What methods did leaders of the Civil Rights movement use in their campaigns?

- **Non-violent protest** – used largely by the NAACP and SCLC. Peaceful protests such as marches, speeches or using the judicial system to gain Civil Rights for African Americans.
- **Violent protest** – used by Malcolm X, the Nation of Islam and the Black Panthers. Violent protest using force and causing chaos on the streets to provoke change.

# History

## Week 7

### What did the Black Panther Party achieve for African-Americans?

- Founded and led by **Huey P Newton, Bobby Seale and Eldridge Cleaver**.
- The Black Panthers led marches and campaigns against police brutality, they produced newsletters and newspapers exposing racism and discrimination.
- They focused on strengthening their communities, building pride in Black identity **The Black Power Movement**.
- The Party provided help, such as education, legal aid, ambulance services and distribution of necessary items for free.

## Week 8

### How did American presidents support the Civil Rights movement?

**John F Kennedy (1960-63)** - he openly supported the Civil Rights Movement.

- He was prepared to intervene if there was evidence of state governments not implementing Civil Rights laws.
- In 1963, he gave a speech supporting Civil Rights.
- Before his assassination, Kennedy was trying to get Congress to pass a law ending segregation.

**Lyndon B Johnson (1963-68)** - he continued to support the Civil Rights Movement.

- Pledged \$800 million to tackle poverty for African Americans. Provided aid in housing and medical support.
- Continued legislation of the 1964 Civil Rights Act.

## Week 9

### How did the Civil Rights Movement fit in with the wider social changes of the time?

#### **The Vietnam War and Muhammed Ali –**

Muhammed Ali risked his boxing career to protest the Vietnam War. He was drafted into the US Army in 1966. During the induction call Ali refused to step forward when his name was called.

**Feminism and Shirley Chisholm** – Founded the National Women's Political Caucus in 1971. In 1977 she became the first Black woman and second woman ever to serve on the House Rules Committee.

**Hidden figures and the Space Race** – female computers involved in NASA's Project Mercury during the 1960s. These African American women calculated the mathematics and physics needed to put men into space.

## Week 10

### Clever Connectives to use in your writing

#### **To add information:**

Furthermore  
Moreover  
In addition  
Additionally  
Also  
Besides  
As well as  
Not only... but also

#### **To compare:**

Similarly  
Likewise  
Just as  
In the same way  
Compared to  
As opposed to

#### **To show Cause and Effect:**

Therefore    As a result    Consequently  
Because of    Thus    Hence  
Due to    For this reason    So

## Week 11

### What are primary sources?

Primary sources give you direct access to the subject that you're researching or learning about. They contain raw information. They can provide you with a first-hand account of an event or time-period, represent original thinking and give you new information. They're usually the centre of a piece of research.

#### **Examples of primary sources include:**

- diaries
- biographies and autobiographies
- interviews
- speeches and oral histories
- government data

## Week 12

### What are secondary sources?

Secondary sources provide second-hand information and often offer explanations for primary sources. They were made after the event.

#### **Examples of secondary sources include:**

- textbooks
- dictionaries and encyclopaedias
- biographies
- Films or songs made about the event after it happened
- A documentary about the history of an event or a person

# Maths

- 1) Go to [sparxmaths.uk](http://sparxmaths.uk)
- 2) Login using your username and password
- 3) Complete your compulsory homework as follows:
  - Write the bookwork code
  - Write the question and then your workings and your answer
  - Mark your answer in a different colour
  - If you are struggling, **watch the video**
  - Your homework is complete when you have answered **every** question correctly.
  - If you are really struggling with one question, complete the other questions and ask your Maths teacher for help the next day or attend the Sparx Clinic.

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

Homework Thursday 1<sup>st</sup> June 2027

Task 1

D40  $12 + 13 = \underline{25}$  ✓

E50  $4 \times 3 + 2 \times 5 =$   
 $12 + 10 = \underline{22}$  ✓

F60  $\begin{pmatrix} 12 & 18 \\ 2 & 3 \end{pmatrix} \div 6$

H70  $\frac{1}{14} + \frac{1}{7} = \frac{1}{\underline{14}}$  ✗

J90  $\frac{1}{8} + \frac{1}{4} = \frac{1}{8} + \frac{2}{8}$   
 $= \frac{3}{8}$  ✓

A01  $\begin{array}{r} +493 \\ 162 \\ \hline 655 \end{array}$  ✓

B11 Area =  $3 \times 14$   
 $\times 14$   
 $\frac{42}{1}$   
 Area =  $42 \text{ cm}^2$  ✓

CL1  $\frac{1}{33} + \frac{1}{11} = \frac{1}{33} + \frac{3}{33}$   
 $= \frac{4}{33}$  ✓

D31  $3^2 = 3 \times 3$   
 $= \underline{9}$  ✓

E41  $P(\text{yellow}) = \frac{3}{6}$  ✗

F51  $P(\text{black}) = \frac{4}{8}$   
 $= \frac{1}{2}$  ✓

Task 2

G61 All the marbles are green  
 The probability of choosing a purple marble is impossible ✓

H71  $P(\text{odd}) = \frac{3}{5}$  ✓

Task 3

J22 False ✓

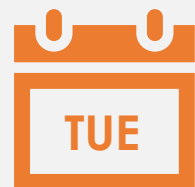
K32 Unlikely ✗

L41 B, A, C ✓

C03 4 more blue balls ✓

D13 4 black, 2 red, 2 blue  
 The probability of picking black is even: Buy 5 ✓

E23 B ✓



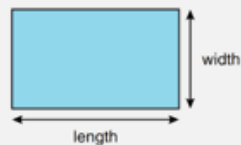
Sparx Maths is set at 9am on a Tuesday and is due in by 7am on a Tuesday.



You can get help with Sparx every Break 1 in BL07.

# Maths – Points of reference

## Area of a Rectangle



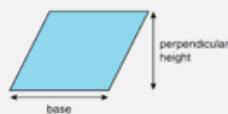
$$\text{length} \times \text{width} = l \times w$$

## Area of a Triangle



$$\frac{1}{2} \times \text{base} \times \text{perpendicular height} = \frac{bh}{2}$$

## Area of Parallelogram



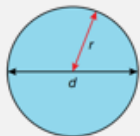
$$\text{base} \times \text{perpendicular height}$$

## Area of Trapezium



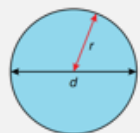
$$\frac{1}{2}(a + b)h$$

## Circumference of a circle



$$C = \pi \times d$$

## Area of a circle



$$A = \pi \times r^2$$

## Arc Length



$$\frac{\text{angle}}{360} \times \pi \times d$$

## Area of a Sector

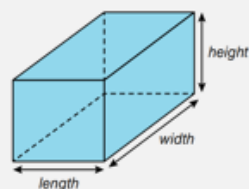


$$\frac{\text{angle}}{360} \times \pi \times r^2$$

## Parts of a circle

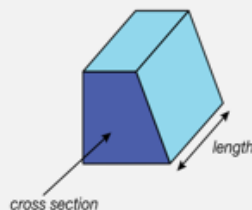


## Volume of a Cuboid



$$\text{Length} \times \text{width} \times \text{height} \\ V = l \times w \times h$$

## Volume of a Prism



$$\text{Area of cross section} \times \text{length}$$

## Square Numbers

$$\begin{aligned} 1^2 &= 1 \\ 2^2 &= 4 \\ 3^2 &= 9 \\ 4^2 &= 16 \\ 5^2 &= 25 \\ 6^2 &= 36 \\ 7^2 &= 49 \\ 8^2 &= 64 \\ 9^2 &= 81 \\ 10^2 &= 100 \\ 11^2 &= 121 \\ 12^2 &= 144 \\ 13^2 &= 169 \\ 14^2 &= 196 \\ 15^2 &= 225 \end{aligned}$$

## Cube Numbers

$$\begin{aligned} 1^3 &= 1 \\ 2^3 &= 8 \\ 3^3 &= 27 \\ 4^3 &= 64 \\ 5^3 &= 125 \\ 6^3 &= 216 \\ 7^3 &= 343 \\ 8^3 &= 512 \\ 9^3 &= 729 \\ 10^3 &= 1000 \end{aligned}$$

## Prime Numbers

2,3,5,7,11,13,17,  
19, 23, 29, 31,  
37,...

HCF: Highest  
Common  
Factor  
LCM: Lowest  
Common  
Multiple

## Index Rules

$$x^a \times x^b = x^{a+b}$$

$$\frac{x^a}{x^b} = x^{a-b}$$

$$(x^a)^b = x^{a \times b}$$

$$x^0 = 1$$

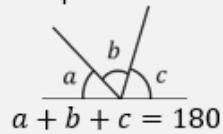
$$x^{-a} = \frac{1}{x^a}$$

$$x^{\frac{1}{a}} = \sqrt[a]{x}$$

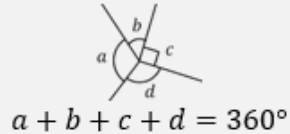
# Maths – Points of reference

## Angle Rules

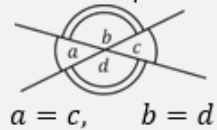
Angles of straight line add up to  $180^\circ$



Angles at a point add up to  $360^\circ$

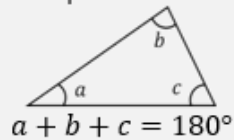


Vertically opposite angles are equal

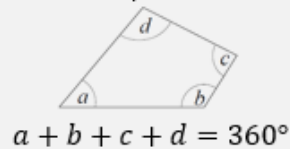


## Angle Rules

Angles in a triangle add up to  $180^\circ$



Angles in a quadrilateral add up to  $360^\circ$

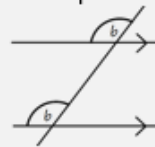


All exterior angles in a polygon sum to  $360^\circ$

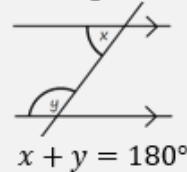
One exterior angle + one interior angle =  $180^\circ$

## Angle Rules

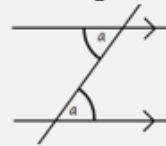
Corresponding angles are equal



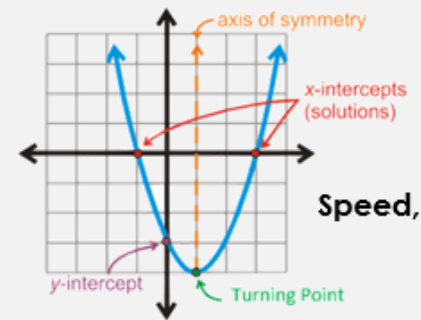
Co-interior angles add to  $180^\circ$



Alternate Angles are equal



## Quadratic Graphs



**Distance, Time**



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

**Gradient**

$$= \frac{\text{change in } y}{\text{change in } x}$$

## HIGHER TIER ONLY

**General linear line equation**

$y = mx + c$   
Where  $m$  is the gradient and  $c$  is the y-intercept.

**Frequency Density**

Frequency density =  $\frac{\text{Frequency}}{\text{Class width}}$



# Music

## Weeks 1 & 2

### Reggae

- Reggae music started in Jamaica in the 1960s, mixing different styles like ska and rocksteady.
- It was influenced by African rhythms, American jazz, and R&B music.

**Offbeat rhythm:** when the beats are played on the "and" between the main beats, creating a bouncy or unexpected feel.

**Bass lines:** the part that plays the low, deep notes, usually with a bass guitar or another bass instrument.

**Instrumentation:** the way different instruments are used in a song - the melody, rhythm, or harmony.

## Weeks 3 & 4

### Three Little Birds

**Cultural Element:** The song comes from Jamaican reggae music, which is known for its upbeat rhythm and messages of peace, love, and hope. Bob Marley, who was from Jamaica, used reggae to spread messages of positivity and unity around the world.

**Thematic Element:** The song's main message is about staying positive and not worrying. It tells the story of three little birds who sing a song to remind you that everything will be okay, even when things seem tough. It's all about keeping a hopeful attitude, no matter what happens.

## Weeks 5 & 6

**Ensemble:** a group of musicians who play different instruments together to make music as a team.

**Chord progression:** a series of chords played one after the other in a certain order. It's like a musical "story" where each chord leads to the next one, creating a feeling or mood in the song.

**Riff:** a short, catchy series of notes or chords that are repeated throughout a song.

**Syncopation:** when the rhythm goes against what you might expect, making the beats feel a little off or surprising.

## Weeks 7 & 8

**Percussion:** refers to instruments that make sound by being hit, shaken, or scraped. These include drums, tambourines, cymbals, and even things like maracas or a xylophone. Percussion instruments help keep the rhythm and add excitement to the music.

**Syncopation:** when the rhythm goes against what you might expect, making the beats feel a little off or surprising.

**Melodic riff:** a short, catchy tune or pattern of notes that is repeated throughout a song. It's often played on instruments like the guitar or piano.

## Weeks 9 & 10

### Assessment Fortnight, applying knowledge of:

**Bass lines:** the part that plays the low, deep notes, usually with a bass guitar or another bass instrument.

**Offbeat rhythm:** when the beats are played on the "and" between the main beats, creating a bouncy or unexpected feel.

**Melodic riff:** a short, catchy tune or pattern of notes that is repeated throughout a song. It's often played on instruments like the guitar or piano.

## Weeks 11 & 12

### Improvement Week: Steps to Success

**Focus on Rhythm:** Learn the offbeat strumming pattern, emphasizing the "upstroke" on 2 and 4.

**Listen to Classics:** Study songs by Bob Marley, Toots and the Maytals, and Peter Tosh for style and feel.

**Explore Basslines:** Understand reggae's signature bass grooves and how they drive the music.



## Weeks 1 & 2

### Continuous Training

- This type of training involves a steady but regular pace at a moderate intensity which should last for at least 30 minutes. Activities can include running, walking, rowing or cycling.
- Heart rate should be kept between 60-80 % of maximum heart rate.
- This type of training is good for long-duration sports including team games.



## Weeks 3 & 4

### Fartlek Training

- This means Speed Play in Swedish.
- It is a combination of different intensities
- Works on both aerobic and anaerobic fitness due to the varying intensities
- Fartlek training is used by team games performers as it suits the movements necessary for a game. This can be completed over different terrains, woods, hills and roads.



## Weeks 5 & 6

### Interval Training

- This training involves periods of work followed by periods of rest.
- This type of training can be adapted to any sport that has a change in intensity, for example racket sports

### HIIT Training

- High-Intensity Interval Training (HIIT) involves periods of high intensity work and rest breaks. This anaerobic burst is typically for 30-40 seconds with 15-20 seconds rest.

## Weeks 7 & 8

### Circuit Training

- Circuit training is a series of exercises completed one after another
- Each exercise is called a station. Each station should work a different area of the body to avoid fatigue.
- Stations can be designed to suit any sport
- When training for muscular endurance the focus should be on high repetitions and low load.



## Weeks 9 & 10

### Plyometric training

- Explosive power
- Plyometrics training refers to any exercise that enables the muscle to reach maximal force in the fastest possible time.
- Plyometrics exercises cause the muscle to lengthen (eccentric action) before a maximal muscle shortening (concentric action)



## Weeks 11 & 12

### Weight/resistance training

- Strength training uses progressive resistance against a muscle group to cause hypertrophy.
- Free weights are not attached to a machine. They allow a constant resistance but the risk of injury is higher than fixed-resistance machines.
- Fixed resistance machines use stacks of weights attached through pulleys to offer resistance

## Weeks 1 & 2

### Where to get help about... Alcohol and Drugs

#### FRANK

[talktofrank.com](http://talktofrank.com)

03001236600

Information, help and advice about drugs

#### NHS Smokefree

[nhs.uk/smokefree](http://nhs.uk/smokefree)

NHS smoking cessation support service

#### Nacoa

[nacoa.org.uk](http://nacoa.org.uk) 08003583456

Information and support for anyone affected by a parent's drinking

## Weeks 3 & 4

### Where to get help about... Mental Health

**Shout:** the UK's free, confidential and 24/7 mental health text service for crisis support Text 85258

[www.youngminds.org.uk](http://www.youngminds.org.uk) A charity designed to support young people with their mental health

[www.childline.org.uk](http://www.childline.org.uk) A charity designed to help young people with all sorts of issues, including mental health. You can phone for free on 0800 1111

If you need help with your mental health, you can also speak to our safeguarding team

## Weeks 5 & 6

### Where to get help about... Peer Pressure

- **Know Your Values:** Be clear about what matters to you and what you believe in. This helps you stay firm in your decisions, even when others try to influence you.
- **Practice Saying No:** It can be helpful to have a simple, assertive response ready, like "No, thanks" or "I'm not interested."
- **Find Supportive Friends:** Surround yourself with people who respect your choices and share similar values.
- **Avoid Tempting Situations:** If you know something is likely to lead to pressure, try to avoid it or leave before you feel uncomfortable.
- **Be Confident:** Trust your own judgment and remember that it's okay to say no, even if it's difficult.

## Weeks 7 & 8

### Where to get help about... Relationships

[www.actonitnow.org.uk](http://www.actonitnow.org.uk) A website to support young people in their relationships

[www.brook.org.uk](http://www.brook.org.uk) Sexual Health and wellbeing website

[www.youngminds.org.uk](http://www.youngminds.org.uk) Has a really good section on developing relationships you could read

If you need help with any of your relationships, you can also speak to our safeguarding team

## Weeks 9 & 10

### Where to get help about... Stress

- **Take Deep Breaths:** Slow, deep breathing helps calm your nervous system and reduce immediate stress.
- **Take Breaks:** Step away from stressful situations for a few minutes.
- **Exercise:** Physical activity, even a short walk, can help release built-up tension and improve your mood.
- **Stay Organized:** Break tasks into smaller steps, and prioritize what needs to be done to avoid feeling overwhelmed.
- **Talk to Someone:** Sharing your thoughts with a friend or family member can help you feel supported and understood.

## Weeks 11 & 12

### Where to get help about... Bullying

[www.youngminds.org.uk/young-person/coping-with-life/bullying](http://www.youngminds.org.uk/young-person/coping-with-life/bullying)

[www.childline.org.uk](http://www.childline.org.uk) A charity designed to help young people with all sorts of issues, including mental health. You can phone for free on 0800 1111

Remember you can report bullying on the Bodmin College website under the tab "Parents and Students". You can also speak to any member of staff.

## Weeks 1 &amp; 2

**Lesson 1 - Waheguru and Guru Nanak****Waheguru:**

The Sikh word for God, it translates as 'wonderful lord'.

**Guru:**

A human teacher sent by God to bring His word to the world.

**Guru Nanak:**

The first Guru, chosen by God to bring his message to the people. Having met with God in heaven, Guru Nanak undertook 4 great journeys to spread the new word of God.

**Sewa:** Sikh principle of selfless service to others

## Weeks 3 &amp; 4

**Lesson 2 - The Living Gurus**

The 10 living Gurus who established Sikhism and Sikh traditions.

**Guru Nanak:** The first Guru and founder of the religion.

**Guru Gobhind Singh:** The final living Guru who established the Khalsa community.

**Singh:** Surname all Sikh men are given, it means Lion.

**Kara:** The name all Sikh women are given, it means Princess.

## Weeks 5 &amp; 6

**Lesson 3 - The Khalsa and Vaisakhi**

The establishment of the community of inducted Sikhs by Guru Gobhind Singh

**The Panj Pyare:** The 5 beloved ones who showed their faith in God by offering to die for the Guru.

**Khalsa:** The community of Sikhs who wear the 5Ks

- Kirpan - sword
- Kalra - steel bangle
- Kesh - uncut hair
- Kanga - wooden comb
- Kachera - loose fitting underwear

**Vaisakhi:** The Sikh festival celebrating the formation of the Khalsa.

## Week 7-8

**Lesson 4 - Guru Granth Sahib and the Gurdwaras**

**Guru Granth Sahib:** The Sikh Holy book containing the combined wisdom of the 10 living Gurus.

**Gurdwaras:** Sikh place of worship, it has 4 doors facing North, South, East and West so everyone is welcome.

**Granthi:** Person who runs the Gurdwara

**Langar:** The community kitchen in the Gurdwaras

## Week 9-10

**Lesson 5 - Living as a Sikh**

**Naming Ritual:** Sikhs use the Guru Granth Sahib to help choose the name of their child

**Dastar Bandi:** The Sikh turban-tying ceremony

**Amrit:** The Sikh initiation ceremony used to join the Khalsa. It involves stirring a mix of sugar and water with a kirpan

**Funeral Rites:** Sikhs believe in rebirth and the reunion of the soul with God

## Week 11-12

**Lesson 6 - Assessment**

A question paper worth 40 marks that should take 30 minutes to complete. It will consist of:

- 20 multiple choice questions worth 1 mark each
- 5 'state two' questions where you have to give examples of key words. These are worth 2 marks each
- 2 'describe and explain' questions where you must explore a religious view on an issue covered in this Learning Cycle. These are worth 5 marks each.

You will need to know the key words and ideas of Hinduism and Sikhism.

In your 5 mark answers you will be expected to give examples and key words

# Science

## Week 1

### Energy stores, the Particle model and Radiation

- Energy is stored in matter. There are 7 types of energy store:
  - **Kinetic**, stored in moving objects. The faster the movement, the greater the store.
  - **Thermal** (internal), stored in all objects. The hotter the object, the more thermal energy stored.
  - **Chemical**, stored in bonds.
  - **Gravitational potential**, stored in all objects in a gravitational field.
  - **Elastic potential**, stored in stretched or compressed objects.
  - **Electrostatic**, stored when charged objects interact.
  - **Magnetic**, stored when magnetic fields interact.
  - **Nuclear**, stored in the nuclei of atoms.
- Energy is transferred between stores by four methods:
  - **Mechanically**, when objects move.
  - **Electrically**, when charge flows.
  - By **heating**, when thermal energy is transferred from a hotter to a colder object.
  - By **radiation**, transmitted by light or sound waves.
- Energy **cannot be created or destroyed**, only **transferred** from one store to another.
- The amount of **kinetic energy** stored in an object depends on the **mass and the velocity** of a moving object.

$$\text{Kinetic energy} = 0.5 \times \text{mass} \times \text{velocity}^2$$

- The amount of **gravitational potential energy** stored in an object depends upon its **mass, its height** and the strength of the **gravitational field** acting on it. On Earth the gravitational field strength (g) is **9.8 N/Kg**.

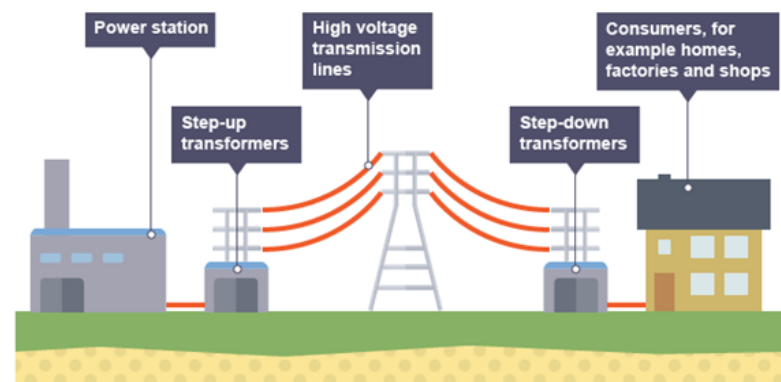
$$\text{Gravitational potential energy} = \text{mass} \times \text{gravitational field strength} \times \text{height}$$

## Week 2

### Energy stores, the Particle model and Radiation

- The amount of **elastic potential energy** stored in a **stretched spring** depends on its **spring constant and its extension**.
- When stretched past its **limit of proportionality** a stretched spring **no longer returns to its original length**.
- Electricity is generated when a **wire moves in a magnetic field**.
- Electricity can be generated by **burning a fuel**. **Chemical** energy stored in the fuel is transferred to a **thermal** store in water. The steam transfers the energy to a **kinetic** store, turning a turbine which moves wires through a magnetic field.
- Electricity flows through complete circuits. **Direct Current (DC)** flows in **one direction** only whilst **Alternating Current (AC)** flows in **both directions**.
- **The National grid** distributes energy across the UK. Energy is generated in a power station at approximately 25000 volts. A **step up transformer** increases this to 400000 volts before it flows through **transmission lines**. At the other end a **step down transformer** reduces the voltage to a **safe 230 volts**.

### The National Grid

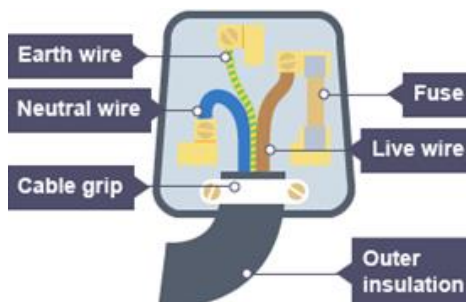


# Science

## Week 3

### Energy stores, the Particle model and Radiation

- Electrical appliances are dangerous. Precautions to protect us include:
- **Circuit breakers** detect surges in the supply and cut the supply off.
- Appliances are connected using 3 core cables. These are copper wires wrapped in differently **coloured plastic to insulate us from the current in the wire.**
- The **brown wire** is **live** and carries current at **230V**.
- The **blue wire** is **neutral** and at 0V.
- The **green and yellow wire** is the **Earth** wire and is also at 0V. It **prevents the appliance from becoming live** in the event of a fault.
- Energy stored in resources can be used to generate electricity.
- **Non renewable** energy resources include **fossil fuels** (coal, oil and gas) and **nuclear fuels** since they will all run out.
- **Renewable energy** resources will not run out. They include wind, solar, wave and tidal, hydroelectric and geothermal.
- Renewable energy resources are **less reliable** than other sources, for example **wind turbines do not work unless its windy** and **solar produces no energy at night.**
- **Bio fuels** are renewable energy resources. They are usually produced from **crops**, which **absorb carbon dioxide through photosynthesis** whilst growing. They are theoretically **carbon neutral** because **burning biofuels releases carbon dioxide.**
- **Deforestation** to grow crops for biofuels can cause **habitat loss.**
- Combusting fossil fuels **increases carbon dioxide in the atmosphere.** Carbon dioxide is a **greenhouse gas** and contributes to **global warming.** This leads to **climate change, unpredictable changes in weather patterns.**



## Week 4

### Energy stores, the Particle model and Radiation

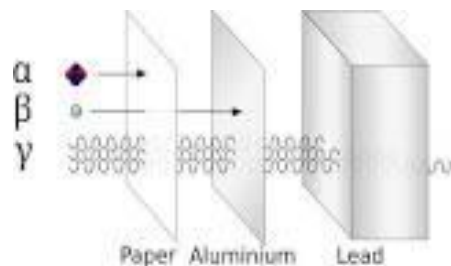
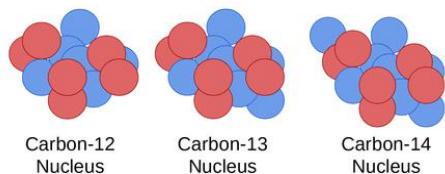
- Nuclear fuels are **radioactive** after use and **extremely hazardous**. The spent fuel needs to be stored safely for thousands of years.
- The **forces of attraction** between particles in a **solid** are **strongest** compared to a liquid or gas
- The particles in a **gas** have the greatest **kinetic energy** compared to a liquid or solid.
- Solids have the **highest density** since the particles are closest together.
- **Density** is the ratio of **mass (in Kg) to volume (in m<sup>3</sup>)**. Its units are **kg/m<sup>3</sup>**.
- **Internal energy** is the total energy stored by particles. It is made up of their **kinetic energy** and the **potential energy stored in the forces of attraction between particles.**
- **When heated** particles **gain kinetic energy** and if they gain enough they **overcome the forces of attraction and change state.**
- Changes of state are **physical changes** since **no new products are formed** and they are **easily reversed.**
- **Specific latent heat** is the amount of energy needed to **change the state of 1Kg** of substance **without changing its temperature.**
- **Latent heat of fusion** is the amount of energy needed to **melt or freeze** a substance.
- **Latent heat of vaporisation** is the amount of energy needed to **boil or condense** a substance.
- **Specific heat capacity** is the amount of energy needed to **raise the temperature of 1Kg** of substance **by 1°C.**
- **Gas pressure** is caused by particles in a gas **striking the surface of a container.**
- The **more frequently** the particles strike the surface, the **greater the pressure.**
- **Increasing the temperature** of a gas **increases its pressure** since the particles have **greater kinetic energy**, so move faster and strike the surface of the container **more often.**
- **Compressing** a gas also **increases its pressure** since the particles are **less spread out** and strike the surface of the container **more often.**
- Compressing a gas **increases its temperature** since energy is **transferred to the particles**, increasing their **internal energy.**

# Science

## Week 5

### Energy stores, the Particle model and Radiation

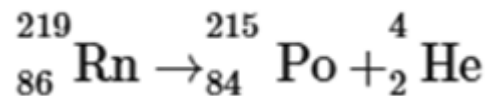
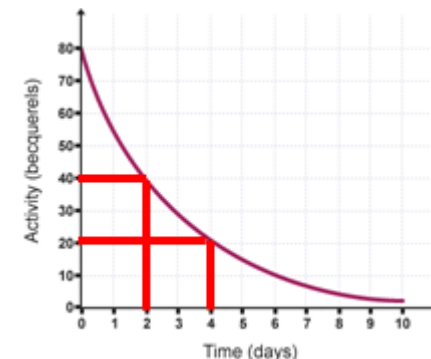
- **Atoms** are made up of a **nucleus of protons and neutrons** with **electrons orbiting in electron shells** of specific **energy levels**.
- **Isotopes** are atoms of an element which have the **same number of protons but different numbers of neutrons**. This means they have the **same atomic number** but **different mass numbers**.
- Some isotopes are **unstable**. They can undergo **radioactive decay, a random process** which emits **ionising radiation**.
- **Ionising radiation** emitted from an atom can **knock an electron off another atom, forming an ion**.
- **Alpha radiation** is the **most ionising** and therefore the **most damaging** but can only travel a **few cm in air** and is **stopped by a sheet of paper**.
- An **Alpha particle** is a **Helium nucleus, 2 protons and 2 neutrons with a 2+ charge**.
- **Beta particles** are electrons **released from the nucleus** of an atom when a **neutron becomes a proton**. Beta particles are much **less damaging** but can travel much **further (a few metres in air)** and are **absorbed by 5mm of aluminium**.
- **Gamma radiation** has no mass or charge. It is **weakly ionising** because it tends to pass through materials **without hitting atoms**. It is only stopped by very thick lead or concrete.
- **Decay equations** are written to represent nuclear decay. Like balanced equations, the **atomic numbers and mass numbers** on each side of the equation **are equal**.



## Week 6

### Energy stores, the Particle model and Radiation

- A **Geiger-Muller (GM) tube** can be used to **measure radioactivity**, in **Becquerels (Bq)**.
- **Half life** is the time taken for the **number of nuclei** in a radioactive sample to **halve**. It varies hugely – from less than a second for some materials to thousands of years for others.
- An **activity-time** graph can be used to find half life. The time taken for **activity to halve** will be consistent.
- **Background radiation** is all around us and is contributed to by:
  - Natural sources (eg isotopes in rocks)
  - Radiation from space (eg cosmic rays)
  - Radiation from human contamination (eg from nuclear weapons tests)Levels vary according to where you are and your occupation (eg a radiographer working with X ray machines).
- **Irradiation** occurs when an object is near a radioactive source. The object **does not become radioactive** but may be damaged.
- **Contamination** occurs when radioactive isotopes come into contact with an object, which will also be irradiated.
- **Gloves** should be worn and **tongs** used to handle radioactive sources.
- **Alpha particles** are stopped by **skin** so are the **least dangerous** form **outside the body**. **Inside** the body they are the **most dangerous** as they are **extremely ionising** and in **close contact with internal cells**.



# Science

## Week 7

### The immune response – Communicable diseases

**Communicable disease:** A disease that can be spread between individuals either directly or indirectly.

**Pathogen** – microorganism which causes infectious disease

Disease	Pathogen	How it's spread	Symptoms	Prevention/treatment
Rose black spot	<b>Fungus</b>	Water, wind	Black spots on leaves, reduced growth	Removing and destroying infected leaves. Fungicides
Malaria	<b>Protists</b>	Mosquito vector	Fever, can be fatal	Mosquito nets Stop mosquitoes breeding
Salmonella – food poisoning	<b>Bacterium</b>	Eating contaminated food	Fever, cramps, vomiting, diarrhoea	Vaccination of poultry Hygienic food prep
Gonorrhoea	<b>Bacterium</b>	Sexual contact	Pain when urinating, yellow discharge from vagina/penis	Condoms. Antibiotics
Measles	<b>Virus</b>	Airborne droplets	Fever, red skin rash, can be fatal	Vaccination of children
HIV	<b>Virus</b>	Sexual contact, bodily fluids	Flu-like Damages immune system	Condoms, Avoid sharing needles Antiretrovirals
Tobacco mosaic virus (TMV)	<b>Virus</b>	Direct contact between plants	Mosaic pattern on leaves, reduces photosynthesis and growth	Not needed for your spec.

## Week 8

### Defence against disease

**Non-specific defence system** - General physical and chemical barriers that defend the body against lots of different types of pathogen.

- Skin** – acts as a barrier and secretes antimicrobial substances to kill pathogens
- Nose** – hairs and mucus traps particles containing pathogens
- Trachea and bronchi** – mucus traps pathogens, and cilia waft mucus up the throat so that it can be swallowed.
- Stomach** – hydrochloric acid kills pathogens

**Specific immune response** – acts to destroy any pathogens which pass through the non-specific immune response

- Phagocytes** - They are attracted to **pathogens** and **engulf** them, enzymes destroy the pathogen.
- Lymphocytes (a type of white blood cell)** - recognize **antigens** on the surface of a pathogen, detect that these are foreign and produce **specific antibodies** in response. The antibodies cause pathogens to stick together and make it easier for phagocytes to engulf them. Memory cells remain in the body.

### Vaccination and immunity

**Vaccines** - a dead or altered form of the disease-causing pathogen to be introduced into the body, which contain a **specific antigen**. This causes the lymphocytes to produce **specific antibodies**.

Memory cells remain in the body.

**Herd immunity** - The protection given to a population against an outbreak of a specific disease when a very high percentage of the population have been vaccinated against it.

### Antibiotics, antiseptics and painkillers

**Antibiotics** - substances that slow down or stop the growth of bacteria

**Antiseptics** - substance that kills/stops the growth of microorganisms which cause disease – applied to living tissue, not internally.

**Painkillers** - chemicals that relieve the symptoms but do not kill the pathogens.

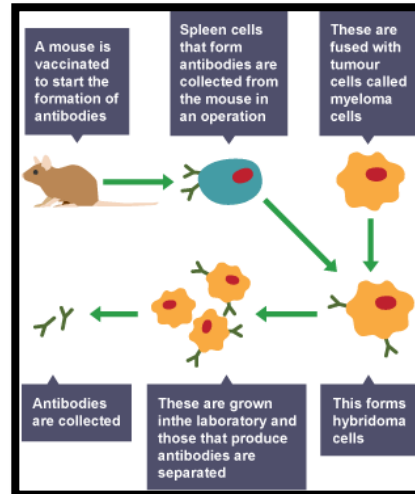
# Science

Week 9

## Monoclonal antibodies

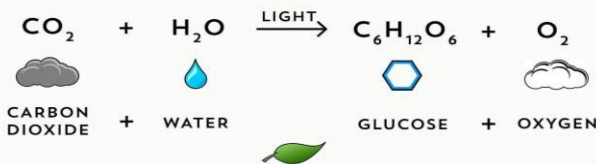
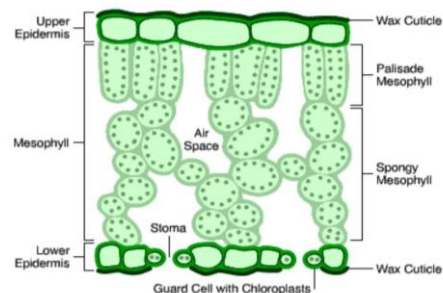
**Uses: Cancer treatment**, Locating specific molecules, Measuring levels of substances in urine or blood, e.g. **Pregnancy tests** detect particular hormones in the urine.

- + **Targets cancer cells**, whereas other treatments may kill any cells
- Can cause **side effects**, so aren't used widely



## Leaves and photosynthesis

**Photosynthesis** – an **endothermic reaction** in which **energy is transferred to chloroplasts from light**



Week 10

## Roots and stems

**Xylem tissue** – carries **water** in the transpiration stream to the **leaves**.  
**Phloem tissue** – carries **food molecules up and down** the plant, to be used immediately or stored.  
**Translocation** – the process in which **food** is moved through **phloem tubes**.  
**Transpiration** - **the loss of water vapour** from the leaves or stems of plants, **via the stomata**  
**Guard cells** – found on the (lower) epidermis of the leaf, **control the opening and closing of the stomata**

## Plant diseases

**Signs of plant disease:** Stunted growth, spots on leaves, discolouration, patches of decay, malformed stems or leaves, abnormal growths.

**Causes of plant disease:**

**Pathogens** – Viruses, Bacteria and Fungi

**Insects** – e.g. aphids

**Mineral deficiencies** – e.g. lack of nitrates – stunts growth, due to lack of proteins. Lack of magnesium – causes yellow leaves, due to lack of chlorophyll.

**Plant defences:**

**Physical** – **Waxy cuticle** on leaves, **Bark**, **Cellulose cell walls** – all provide a barrier to pathogen entry.

**Mechanical** – **Thorns and hairs**, **leaves that droop or curl**, **mimicking** other organisms.

**Chemical** – **antibacterial chemicals**, some plants produce **poisons**

## Photosynthesis and limiting factors

An **increase** in any of these four factors **leads to an increase in the rate of photosynthesis:**

1. **Light intensity**
2. **Temperature**
3. **Carbon dioxide concentration**
4. **Amount of chlorophyll**

Any of these factors can become the **limiting factor** and **reduce the rate of photosynthesis**. These can be **controlled in a greenhouse**.



# Science

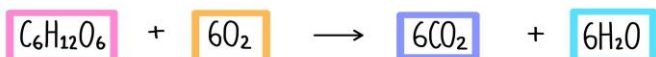
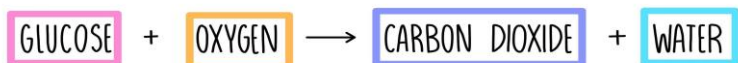
## Week 11

### Aerobic respiration in plants and animals

**Respiration** – an **exothermic reaction**, in which **energy is transferred from glucose**, occurring in **all living cells**.

**Energy is needed:**

- 1) To contract muscles for **movement**
- 2) To keep **warm** (in mammals and birds)
- 3) To **build up larger molecules from smaller ones**



### Anaerobic respiration in plants and animals

**Aerobic respiration** – uses **oxygen**, releases **lots of energy**

**Anaerobic respiration** – **doesn't use oxygen**. Produces **lactic acid** in animal cells and **less energy**

#### **Anaerobic respiration in animals:**

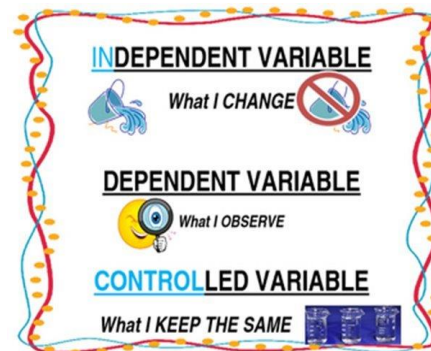
Glucose → lactic acid

#### **Anaerobic respiration in plants and some fungi** (e.g. yeast):

Glucose → ethanol + carbon dioxide

This reaction is called **fermentation** and is used to **make bread and alcoholic drinks**.

## Week 12



**KEYWORDS**

**ReRead**

#### Steps to success:

- Attempt all questions
- Write out calculations and give units
- Plot data with crosses
- 1 mark per minute
- Plan your 6 mark questions before you write
- Give, give, want when using mathematical formulae
- If it states tick one box, then only tick one box – Guess if you are unsure
- HUG the question (Highlight the command words, underline keywords and glance at the number of marks)
- Keep writing until you see end of questions

**BITESIZE**

Use BBC bitesize to make mind maps and test yourself using the quizzes



# Spanish

## Week 1 – School subjects

¿Qué estudias?	What do you study?
estudiar	to study
aprender	to learn
el teatro	drama
las ciencias	science
el comercio	business studies
el dibujo	art
los idiomas	languages
la educación física	PE
la religion	RE
la tecnología	DT
activo	active
animado	lively / animated
práctico	practical
inútil	useless / pointless
útil	useful
duro	hard / difficult
fácil	easy
emocionante	exciting
alegre	happy
estricto	strict
trabajador	hard working
me da igual	I don't mind
la clase	class
el curso	course
los estudios	studies

## Week 2 – School description

¿Qué hay?	What is there?
en mi instituto hay..	In my school there is
mi colegio tiene..	My school has
un patio	a playground
un gimnasio	a gym
una piscina	a pool
una biblioteca	a library
un campo de fútbol	a football field
una oficina	an office
el edificio	a building
público / privado	state/private
nuevo	new
antiguo	old
moderno	modern
amplio	spacious
pequeño	small
no es / son ni...ni..	it is neither...nor
tampoco	neither
un alumno	a pupil
un estudiante	a student
un/a profesor/a	a teacher
un/a director/a	a headteacher
un bolígrafo	a pen
un cuaderno	an exercise book
los deberes	homework
una silla	a chair
una mesa	a table

## Week 3 – School Uniform

¿Qué llevas?	What do you wear?
llevar	to wear
poner	to put on
una camisa	a shirt
una corbata	a tie
una chaqueta	a jacket / blazer
una falda	a skirt
una camiseta	a t-shirt
un sombrero	a hat
un vestido	a dress
unos pantalones	trousers
unos zapatos	shoes
cómodo	comfortable
práctico	practical
caro	expensive
necesario	necessary

Useful acronyms	
ESO (Educación Secundaria Obligatoria) secondary education	
año siete / primero de E.S.O	Y7
año ocho / segundo de E.S.O	Y8
año nueve / tercero de E.S.O	Y9
año diez / cuarto de E.S.O	Y10
año once / quinto* de E.S.O	Y11

# Spanish

## Week 4 – School Rules

Las normas	The rules
las reglas	the rules
no se permite	it is not permitted
tenemos que	we have to
está prohibido	it is forbidden
(no) se debe	one must (not)
(no) se debería	one should (not)
usar el móvil	use a mobile phone
amenazar	threaten
grabar	record
mandar mensajes	send messages
llevar joyas	wear jewellery
ser puntual	to be on time
el comportamiento	behaviour

## Week 5 – Ideal School

En mi insti ideal	In my ideal school
si fuera posible	if it were possible
me gustaría	I would like
habría	there would be
tendría	it would have
podría	I could / it could
The conditional tense – no chop just add	
I	ía
You (singular)	ías
He / she / it	ía
We	íamos
You (plural)	íais
They	ían

## Week 6 – Future Study

Tus planes	Your plans
el bachillerato	A Levels
la opción	choice
el éxito	success
el intercambio	exchange
la libertad	freedom
el trabajo	work
la nota	grade / mark
las prácticas laborales	work experience
la prueba	test
el exámen	exam

## Week 7 – Future Aspirations

Tus sueños	Your dreams
viajar	to travel
tomar un año sabático	to take a sabbatical year
formar una familia	to start a family
tener hijos	to have children
trabajar	to work
como voluntario	as a volunteer
con niños	with children
en el extranjero	abroad

## Week 8 – The Imperfect tense

¿Qué hacías?	What did you do?	
iba	I used to go / I went	
era / era / eran	I was / it was / they were	
veía	I used to see	
había	there was / were	
The imperfect tense – chop and swap		
	-ar	-er -ir
I	aba	ía
You (singular)	abas	ías
He / she / it	aba	ía
We	ábamos	íamos
You (plural)	abais	íais
They	aban	ían

## Week 9 – Describing a picture

Describe la foto	Describe the photo
hay	there is / are
veo / puedo ver	I see / I can see
está / están	he / she is / they are
en el salón / el campo	in the lounge / countryside
en la ciudad / oficina	in the town / office
hace calor / sol	it is hot / sunny
llueve	it is raining
nieva	it is snowing
un hombre	a man
una mujer	a woman
un chico/a	a boy / girl

# Spanish

## Week 10 - Comparing Schools

Comparisons	
más ... que	more ... than
menos ... que	less ... than
tan ... como	as ... as
mejor que	better than
peor que	worse than
Superlatives	
lo mejor	the best thing
lo peor	the worst thing
lo más ...	the most ... thing
lo bueno	the good thing
lo malo	the bad thing

## Week 11 – Developing our answers

High-level connectives	
porque	because
dado que	because / as
puesto que	
ya que	
no obstante	however
asi que	so / therefore
asimismo	also / likewise
además	furthermore

## Week 12 – Easter

La Pascua	Easter
la Semana Santa	Holy Week
la Cuaresma	Lent
la primavera	Spring
el chocolate	chocolate
el huevo	egg
el conejo	rabbit
las hojas de palmeras	palm leaves
una vela	a candle
un paso	a float (in a procession)
un cruz	cross
un crucifijo	a crucifix
las flores	the flowers
un Nazareno	a penitent
un capirote	a conical hat

## Preparing for the speaking assessment

Before the assessment:

Experiment with the following techniques to revise the vocabulary and structures in this knowledge Organiser

- Use the look-cover-write-check technique to test yourself
- Create flashcards with the English on one side and the Spanish on the other – test yourself and get a friend to test you
- Practise bringing the vocabulary together to create your own written and spoken answers
- Give the Knowledge Organiser to a friend and get them to test you
- Practise the vocabulary on Quizlet

During the test:

- Describe the people, location and activity
- Remember the rule of 3 – develop your answer
- Give an opinion, a reason and a contrasting opinion
- Be brave! Say something! More marks are awarded for communication than anything else – just go for it!