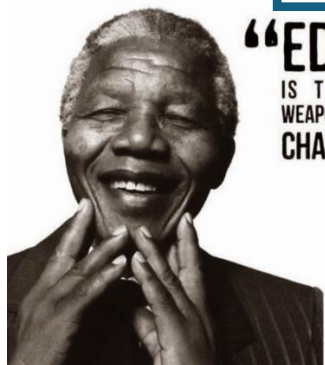# Westhoughton High School

Year 8 – Summer Term - Knowledge Organisers

"EDUCATION IS THE MOST POWERFUL WEAPON WHICH YOU CAN USE TO CHANGE THE WORLD."

NELSON MANDELA

Name: ....

Form Group & Room: ....

Form Tutor: ....

Success
Feedback
Results
Actions
Knowledge
Learning
Education

the "Knowledge" pyramid

L E A R N

Look after each other

Enjoy our school

Aim high

Respect one another, ourselves & our school community

Never stop learning

Introduction

The curriculum in each of your subjects at WHS has been carefully planned to help you learn new things, building upon what you know and preparing you for learning in the future. This is mapped out as a learning journey which each teacher will share with you, so you understand how your learning fits together as a whole. Each subject's roadmap is here https://www.westhoughton-high.org/subjects/.
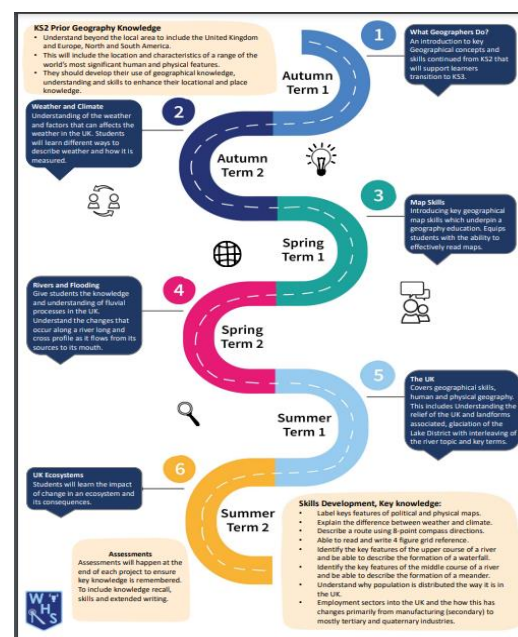
This booklet contains knowledge organisers for the topics you will study in each subject this term. These give an overview of the essential knowledge that you MUST remember to be as successful as possible in Year 8 and as you move through each year of school. Your teachers will expect you to use them during lessons to find out about what you are going to be learning in a new topic, to retrieve information during a connect activity – connecting your brain to what you are going to learn that lesson and to test yourself or others to recall knowledge. You will also use them to complete home learning activities, to regularly revise from so that you begin to remember more knowledge over time, to discuss what you have been learning with family and friends and to catch up on any learning you might have missed due to absence. You must bring your booklet to school every day and keep it safe at the end of each term as you will continue to use it to support ongoing revision.
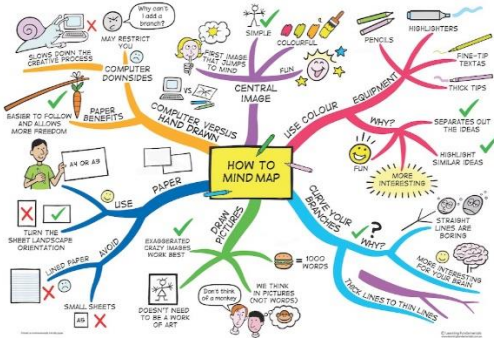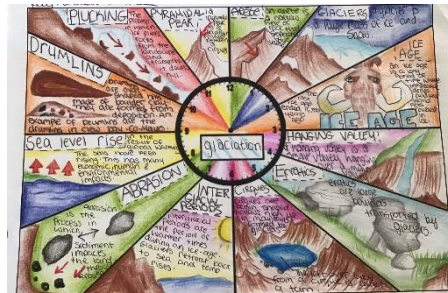
Learning Techniques to use with KOs – using them regularly is vital to make knowledge stick in your long-term memory (remember you need to revisit information at least 10 times before it is embedded in your memory).

Try using these ideas, choose different techniques to learn small sections of knowledge each day.

	Look, Say, Cover, Write, Check	Key Word Definitions	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
STEP 1	Look at and read aloud a specific area of your KO.	Write down the key words and definitions in two columns.	Use your KO to condense and write down key facts or information onto flash cards.	Use your KO to create a mini quiz. Write down your questions relating to the information.	Create a mind map with the information on your KO.	Ask a partner, friend or family to use the KO or your flash cards.
STEP 2	Cover or flip the KO over and write down everything you remember.	Repeat the above but don't look at your KO	Add pictures that might help you remember. Then self-quiz using the flash-cards.	Answer the questions, remember to use full sentences.	Check your KO to make sure there are no mistakes on your mind map.	Make sure they test you on different sections of the KO and also on previous topics.

3

STEP 3	Check what you have written down. Correct any mistakes and add anything you missed in purple pen.	Use a purple pen to check and correct your work	Ask a friend or family member to quiz you on your knowledge.	Ask a friend or family member to quiz you using the questions.	Try to make more connections, link the information together where you can.	Repeat this regularly so that you are frequently looking at KOs past and present.

How to make learning stick…

Mind Mapping	Flash Cards	Look, Say, Cover, Write, Check	Key Word Mnemonics	Revision Clocks
Mind mapping is a great way of representing key information from a topic in a visual way. Use colour and images to represent the knowledge you need to learn. Keep writing to a minimum; use only keywords/phrases.	Make flash cards using your KO. Write a question on one side and the answer on the other or record key-words and definitions. Test yourself frequently.	This technique is one that has been well used from primary school upwards. It is useful for rehearsing keywords, definitions and spellings. Look at the information, read it aloud, cover it up, write it	A mnemonic is a sentence you make up where each word begins with the same letter as the word you want to remember. It is a useful technique for remembering a group of	Draw a basic clock and break your KO down into 12 chunks. Make notes on each chunk in the 12 clock sections, use colour and images to make it memorable. Revise each section for 5 minutes, turn over and test how much you can recall.

Watch the clip for more tips and advice.	For more advice, scan the code.	down and then check it is correct.	facts/words in a certain order.	Watch the clip for more tips and advice.

Year 8 - ART

Story telling

DRAW YOURSELF USING THIS BASIC SHAPE →

REMEMBER, KEEP IT SIMPLE

TRY THESE OTHER BODY SHAPES

Color Wheel

YELLOW
primary

YELLOW GREEN
tertiary

YELLOW ORANGE
tertiary

GREEN
secondary

ORANGE
secondary

BLUE GREEN
tertiary

RED
ORANGE
tertiary

BLUE
primary

RED
primary

BLUE VIOLET
tertiary

RED VIOLET
tertiary

VIOLET
secondary

PRIMARY
YELLOW
RED
BLUE

SECONDARY
ORANGE
VIOLET
GREEN

TERTIARY
YELLOW ORANGE
RED ORANGE
RED VIOLET
BLUE VIOLET
BLUE GREEN
YELLOW GREEN

Final stance with background

Year 8 key words	
Imaginative drawing	Imaginative drawing is the act of drawing images that you think of in your head.
Mark making	Mark making describes the different lines, dots, marks, patterns, and textures we create in an artwork.
Expressions	a look on someone's face that conveys a particular emotion. "a sad expression"
Characterisation	the creation or construction of a fictional character.
Stance	the way in which someone stands, especially when deliberately adopted (as in cricket, golf, and other sports); a person's posture.
Story telling	Artists can present narrative in many ways—by using a series of images representing moments in a story, or by selecting a central moment to stand for the whole story. Narrative works often illustrate well-known historical, religious, legendary, or mythic stories.

Year 8 Anthropomorphic Art Timeline

The Cave of the 3 Brothers, France

Anubis Sculpture Egypt

Medieval Killer Bunnies Drolleries/Manuscripts

Walt Disney Mickey Mouse

EH Shepard Winnie The Pooh

Marc Brown Arthur Read

Lisa Hanawalt Bojack Horseman

13000 BCE

332-30 BCE

1250-1400 ADE

1928 ADE

1926 ADE

1990's-present: USA

2014 : USA

885 BCE

1832 ADE

1902 ADE

1929 ADE

1990's-present: UK

1980's-present: Switzerland

Assyrian bird Headed Deity Iraq

JJ Grandville France

Beatrix Potter; Peter Rabbit: UK

N Ofuji The Black Cat Japan

Jim Medway Teen cats

Felicie Hamoz Fantastic Mr fox

Prehistoric - Egyptian - Medieval - Victorian illustration - 20th Century animation - 21st Century illustration - Contemporary Animation

Computer Science — CyberSecurity

Data Protection Act

ALL ORGANISATIONS USING AND STORING DATA MUST **ABIDE** BY THE FOLLOWING **PRINCIPLES**

- Find out how your data is being used (by an organisation)
- Access the data that an organisation has about you
- Update your data
- Have your data deleted
- Stop an organisation from processing your data
- Transfer your data to a different organisation

- Used fairly, openly, and in accordance with the law
- Used for a specific and stated reason
- Used only in a way that is necessary and sufficient for the purpose for which it was collected
- Accurate and up-to-date
- Only kept for as long as it is needed
- Protected against loss, damage, and unauthorised access

AS A **DATA SUBJECT**, YOU HAVE THE RIGHT TO FIND OUT WHAT INFORMATION THE GOVERNMENT AND OTHER ORGANISATIONS STORE ABOUT YOU.

The Computer Misuse Act (1990) and its amendments were created so that unauthorised access to computers and crimes committed using a computer could be prosecuted. The act is based on three principles and makes the following actions illegal:

PRINCIPLES	LEGAL ACTIONS
Unauthorised access to digital/computer material. This means a person asking a computer to perform any function with the intent of accessing anything on the computer for which they do not have permission, and for which they know they do not have permission.	Punishable by up to two years in prison and a £5,000 fine.
Unauthorised access to digital/computer material with intent to commit or facilitate the commission of further offences. This means a person gaining access to a computer without permission in order to commit another crime or to enable someone else to commit a crime.	Punishable by up to five years in prison and an unlimited fine determined by the damage caused and the severity of the crime.
Unauthorised acts with intent to impair, or with recklessness as to impairing, the operation of a computer. This means a person intentionally impairing the operation of any computer or program, or intentionally preventing access to any data or program on any computer. This includes creating or supplying materials that could be used to carry out this offence.	Punishable by a prison sentence of up to ten years and an unlimited fine, but if the act puts life at risk or endangers national security, the sentence may be extended to life imprisonment.

Social Engineering

Social engineering is a set of methods used by cybercriminals to deceive individuals into handing over information that they can use for fraudulent purposes.

How might a hacker use the data you submitted?

Name of first pet / Favorite colour/ Mother's maiden name / Favorite band or artist / Date of birth / Name / Email address

Shouldering (also known as **shoulder surfing**) is an attack designed to steal a victim's password or other sensitive data. It involves the attacker watching the victim while they provide sensitive information, for example, over their shoulder. This type of attack might be familiar; it is often used to find out someone's PIN at a cash machine.

Phishing Attack

A **phishing attack** is an attack in which the victim receives an email disguised to look as if it has come from a reputable source, in order to trick them into giving up valuable data. The email usually provides a link to another website where the information can be inputted.

Phishing: Key indicators of a phishing email

- Unexpected email with a request for information
- Message content contains spelling errors
- Suspicious hyperlinks in email
- Text that is hyperlinked to a web address that contains spelling errors and/or lots of random numbers and letters
- Text that is hyperlinked to a domain name that you don't recognise and/or isn't connected to the email sender
- Generic emails that don't address you by name or contain any personal information that you would expect the sender to know

DoS / DDoS

Denial of service attack (DoS) This is a cyberattack in which the criminal makes a network resource unavailable to its intended users. This is done by **flooding** the targeted machine or website with lots of **requests** in an attempt to overload the system.

Distributed denial of service attack (DDoS) This uses the same concept as a DoS attack, but this time it is **multiple computers** making the attacks at the same time. It is a lot harder to: Stop the attack by simply blocking a single source or Identify who is responsible, as lots of machines are making requests, many of them because they are infected by malware.

Blagging

Blagging (also known as **pretexting**) is an attack in which the perpetrator invents a scenario in order to convince the victim to give them data or money. Hacking *in the context of cyber security* is: **Gaining unauthorised access to or control of a computer system**

Why might people want to hack? To steal data / To disrupt services / For financial gain / For political reasons (espionage and activism)/ For fun (planting the flag) / For ethical reasons

Brute Force Attack / Bots

Brute force attack This is a form of attack that makes multiple attempts to discover something (such as a password).

Internet bots - Bots are automated programs that perform tasks repeatedly. Bots are a crucial part of the internet's infrastructure and perform useful tasks .

Protection Methods

Firewalls A firewall checks incoming and outgoing network traffic. It scans the data to make sure it doesn't contain anything malicious and that it follows the rules set by the network.

Anti-malware Anti-malware is software that scans any file that is able to execute code. The anti-malware will have a list of definitions of sequences of code that they are aware are malicious. If the code in your files matches the definitions, the files are quarantined.

Auto-updates Auto-updates refers to software that automatically checks for available updates for the software you have on your computer. Once it finds an update, the software can be set either to alert the user or to install it automatically. This software is often included with an operating system.

User permissions Users on a network can be put into groups, with each group having a unique set of privileges, such as: Which network drives they have access to, Their read/write permissions, Which printers they are able to use, What software they can use, Which websites they are allowed to access

Malware

Typical actions of malware include deleting or modifying files.
Spyware—secretly monitors user actions, e.g. key presses, and sends information to the hacker. Some spyware can even use your webcam without your knowledge.
Viruses—spreads through normal programs and might slow down your device or change your applications and documents.
Worms— spread from device to device and copy themselves hundreds of times. A worm might copy itself onto your email account and then send a copy to all of your email contacts!
Trojan horse— pretends it will be a useful and safe program, when actually it will try to attack your device.
Adware—displays adverts while it is running; some can serve as spyware, gathering information about you from your hard drive, the web sites you visit, or your keystrokes.

Coding

Program: A human instructing the computer what to do. – *computers require clear instructions to work correctly.*

All programming languages have the same concepts.

EduBlocks	A visual block based programming tool that helps to introduce text based programming languages
Python	A text based programming language
Programming Code	The process of writing computer programs . The instructions that you write to program a computer
Algorithm	A set of rules/instructions

Logical Thinking - Comparative Operators

==	Equal to (compare 2 values)
!=	Not equal to
<	*Left value is less than the right value.*
>	*Left value is greater than the right value.*
>=	*Left value is greater than or equal to right value.*
<=	*Left value is less than or equal to right value.*

Arithmetic Operators

+	Addition
—	Subtraction
*	Multiplication
/	Division
//	Integer division
%	Remainder
**	Exponent

KEY TERMS

Execute	When you carry out the program
Condition	When something has to happen for the program to work
Sequence	Parts of the code that run in order and the instructions for our code
Selection	Using logical tests to change the flow of the sequence
Iteration	Using loops to repeat sequences of code Code is repeated (looped) while something is true or for a number of times
Variable	A value that can be changed e.g. speed, lives, score.
Constant	Something that's stays the same in a program
Data Type: String	A sequence of characters that can include letters, numbers, symbols
Data Type: Integer	Whole numbers with no decimal point.
Data Type: Float	Decimal Numbers
Input	Something that is entered into the program
Output	Something that comes out of a program
Loop	A way of repeating code (iteration). They are limited to certain data types.
While Loop	A **"While"** Loop is used to repeat a specific block of code an unknown number of times, until a condition is met
For Loop	For **loop** is a programming language conditional iterative statement, which is used to check for certain conditions and then repeatedly execute a block of code as long as those conditions are met
IF, Else, Elif	The **if/else statement** executes a block of code **if** a specified **condition** is true. **If** the **condition** is false, another block of code can be executed
Functions	A function is a command which contains the steps needed to perform a task
Subroutines	a set of instructions designed to perform a frequently used operation within a program
Pattern	Repeating sequences of code.
RGB	Colours: red, green and blue
Function	Inbuilt code is a command which contains the steps needed that performs a specific task.

Drawing Patterns

Patterns are repeating sequences of code.

Why are Functions Useful

Why are functions useful?

Functions are powerful tools.
They are subroutines, small sequences of code inside the main code.

We can call the function, and come out of the main code, do the function, then come back to the code.

They enable us to reuse sections of code.
They keep our code tidy, and with fewer lines to write.
In our code we can draw any shape using one section of code.

Variable Names

```
circles ▾  = ▾  int( input( "How many circles? :" ) )
```

Above is a variable called circles-Circles is the name of the variable.

The data type is integer.

Loops Some loops run forever like this one (indefinite iteration). It will print Hell World

```
while True :
    print(" Hello World ")
```

The Edublocks interface is simple.

On the left we have all of the blocks that we can use to write code.

The blocks are placed in the coding area in the centre of the screen.

Blocks can be dropped in the "bin" to delete them.

You can also split the screen to view your code in Python

Computing

Key terms

Podcast: A digital **audio file** made available on **the Internet** for **downloading** to a computer or mobile device, typically available as a series, new instalments of which can be received by **subscribers** automatically.

Audio: Sound

Voiceover: A piece of narration

Special effects: **A sound that is created to represent something real (such as an explosion) or imaginary (such as a monster)**

Purpose-The reason for which something is done or created or for which something exists.
e.g. "...the purpose of the interview is to appoint a new Manager"

Download: **the transmission of a file or data from one computer to another over a network**

Copyright, Designs and Patents Act

Audience Examples:

Young children (4 - 10)   Retired people

Children (8 - 12)   Old aged people (65+)

Teenagers (13 - 19)   Females

Young adults (15 - 25)   Males

Adults   Non - English speakers

People with additional needs

The different purposes of podcasts

TPS-Can you name some purposes people listen to podcasts? To.......

Reassure   Entertain   Inspire   Inform

Warn   Persuade   Educate   Instruct

Associate (jingle)

What is the main purpose of a business?

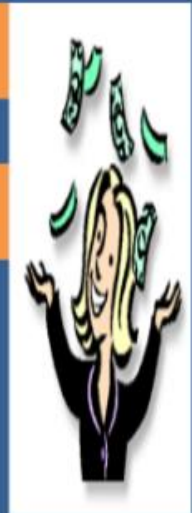Profit

How would a podcasting business make money?

Followers
Popularity
Sponsorship
Advertising

FOLLOW ME

SOME PODCASTS CAN HAVE MORE THAN ONE PURPOSE

What is CAD/CAM?
- CAD stands for Computer-Aided Design
- CAM stands for Computer-Aided Manufacturing
- CAD/CAM is the use of computer software to design and manufacture products

Uses of CAD/CAM in Design and Technology:
- Designing 2D and 3D models of products
- Creating and modifying product designs quickly and easily
- Simulating and testing product performance
- Automating the manufacturing process
- Controlling CNC machines to produce products accurately and efficiently

CAD Software:
- Examples of CAD software include AutoCAD, SolidWorks, and SketchUp
- CAD software allows designers to create and modify 2D and 3D models of products

CAM Software:
- Examples of CAM software include Mastercam and Fusion 360
- CAM software allows manufacturers to create toolpaths for CNC machines to cut and shape products

CNC Machines:
- CNC stands for Computer Numerical Control
- CNC machines use CAM software to control the movement of cutting tools to shape products
- Types of CNC machines include mills, lathes, routers, and plasma cutters

Key Terminology

CAD (Computer-Aided Design): The use of computer software to create, modify, and optimize designs.

CAM (Computer-Aided Manufacturing): The use of computer software to control and automate manufacturing processes.
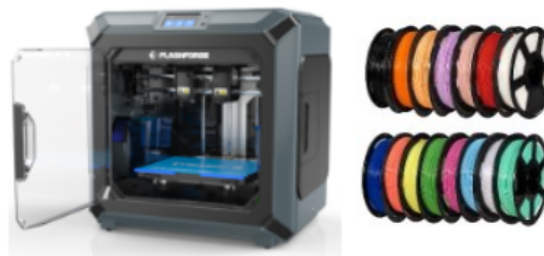
3D Printing: A manufacturing process that creates three-dimensional objects by depositing layers of material, typically plastic or metal.

CNC (Computer Numerical Control): A system that uses computer software to control the movement of machine tools and other equipment used in manufacturing.

Rapid Prototyping: The process of quickly creating physical models or prototypes of designs using CAD and 3D printing technology.

Laser Cutting: A manufacturing process that uses a high-powered laser to cut and shape materials such as wood, plastic, and metal.

Product Design: The process of designing products from concept to production, including the creation of sketches, prototypes, and technical drawings.

Advantages of CAD/CAM:
- Increased design accuracy and precision
- Faster product design and development
- Improved product quality and consistency
- Increased manufacturing efficiency and productivity
- Ability to create complex shapes and geometries

Disadvantages of CAD/CAM:
- Expensive software and hardware costs
- Steep learning curve for users
- Dependence on technology for the design and manufacturing process
- Limited flexibility for customisation during the manufacturing process

Safety considerations:
- Proper training and certification required for operating CNC machines
- Proper maintenance and inspection of machines to prevent accidents and injuries
- Use of personal protective equipment (PPE) such as safety glasses and gloves
- Safe handling and disposal of materials and waste produced during manufacturing process.

Key Historical Events:
1. First Industrial Revolution (1760-1840)
2. Second Industrial Revolution (1870-1914)
3. Third Industrial Revolution (1960-1980)
4. Fourth Industrial Revolution (2010 -present)

Automation: Where does Automation take place?
- Manufacturing and production lines
- Warehouses and logistics
- Transportation and delivery systems
- Agriculture and farming
- Healthcare and medical devices

Key areas of Automation
1. **Automation:** The use of technology to perform tasks without human intervention.
2. **Robotics:** The design, construction, and use of robots to perform tasks.
3. **Sensors:** Devices that detect changes in the environment and provide a corresponding output signal.
4. **Control systems:** Systems that manage and regulate the operation of machines or devices.
5. **Programmable Logic Controllers (PLCs):** Electronic devices that automate industrial processes by controlling the operation of machines and equipment.
6. **Industrial Revolution:** A period of major industrialisation that occurred in the 18th and 19th centuries.
7. **Industry 4.0:** The fourth industrial revolution, characterised by the integration of advanced technologies like automation, artificial intelligence, and the internet of things (IoT) into industrial processes.

What is 2D Design software program?
- 2D Design is a software program used for creating and editing vector graphics.
- Vector graphics are images created using mathematical equations that allow them to be scaled up or down without losing quality.

Tools and features of 2D Design software program:
- Drawing tools: line, curve, circle, rectangle, polygon, and text.
- Editing tools: move, rotate, scale, mirror, and trim.
- Fill and stroke options: colour, gradient, and pattern.
- Layers: used to organize and manage different elements of the design.
- Grids and rulers: help with precision and alignment.
- Import and export options: allow for sharing and transferring designs with other software programs.

Uses of 2D Design software program:
- Creating graphics for logos, posters, and advertisements.
- Designing patterns for textiles, wallpaper, and packaging.
- Engineering and architectural drawings.
- Creating digital artwork and illustrations.
- Designing prototypes and models for manufacturing.

Subject:Year 8 Design and Technology   Topic:Electronics and Systems

Electronic products are commonplace in our day to lives, not just in the products that we use such as our phone for connectivity, or a TV at home for entertainment .

Circuit boards
Circuit boards are used in most electronic systems as they ensure reliable connections between components.

Input ➡ **Process** ➡ **Output**

Most Electronic Systems require a system. Systems typically include an Input, a Process and an Output .

The **input block** detects a signal from outside the system. For example, it could be a switch that detects movement or a sensor that detects lights.

The **process block** receives the signal from the input block and determines what the system will do. There are many different types of process block.

The **output block** is turned on or off by the process block. Common output blocks produce light, movement or sound.

➡ Movement | **Start Button** ➡ **Timer** ➡ **LED** ➡ Light
Electricity   Electricity
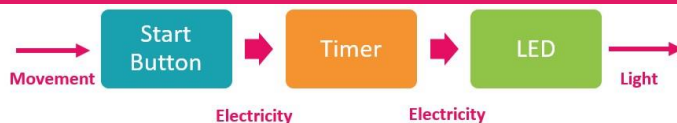
In this example of a systems diagram you can see examples of a system diagram or circuit in action. This includes the flow of electricity between components for a light to come on.

Complex Systems: Some systems or developed circuits can have more than one input, process or output block. Each of these blocks can also be a sub system.

A system that only has inputs, processes and outputs is known as an **open loop system**. These are set before they operate, with the hope the correct outcome will be achieved.

It is also possible to have a system that corrects itself as it operates if its not achieving its goal. This is called a **closed loop system**. It uses feedback from the output block to modify the input block and change what the system is doing.

Name	Input, Process or Output	Symbol	Function	Use
Light-dependent resistor (LDR)	Input		The resistance changes as the light level changes, and the change in resistance can be used as an input	Solar garden lights and street lighting
Thermistor	Input		The resistance changes as the temperature changes, and the change in resistance can be used as an input	Fridges, central heating systems and freezers to maintain temperatures
Piezoelectric sensor	Input		Can change mechanical motion or force into electrical energy - it can produce an electrical pulse from pressure, such as by hitting it	Igniting lighters and in microphones (where soundwaves create pressure that makes the electrical pulse)
Switch	Process		A switch can either allow or prevent electrical power from flowing round a circuit	Any device that needs power to be turned on and off
Resistor	Process		To limit the flow of current - they are made to restrict current flow in varying degrees (resistance)	All electrical products - it helps control the flow of current and protects delicate components from being overloaded
Programmable components	Process	PICAXE 08	A programmable component is a chip that can be programmed to make decisions based on an input	Most modern electrical products - washing machines are programmed to work when the drum door is shut and the on/off button is pressed
Speaker	Output		Uses pulses of electricity to move an electromagnet that vibrates to create sound	Headphones and radios
Motor	Output	M	Converts power into rotary motion that can turn a spindle linked to gears or wheels to make them move	Cars and trains
Light-emitting diode (LED)	Output		A long-lasting, low-power light	Torches, lamps and power indicators

Tolerance band
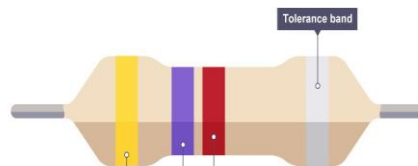
First colour band		Second colour band		Third colour band	
Black	0	Black	0	Silver multiply by 0.01	
Brown	1	Brown	1	Gold multiply by 0.1	
Red	2	Red	2	Black multiply by 1	
Orange	3	Orange	3	Brown multiply by 10	
Yellow	4	Yellow	4	Red multiply by 100	
Green	5	Green	5	Orange multiply by 1,000	
Blue	6	Blue	6	Yellow multiply by 10,000	
Violet	7	Violet	7	Green multiply by 100,000	
Grey	8	Grey	8	Blue multiply by 1,000,000	
White	9	White	9		

Resistors are used for regulating current and they resist the current flow and the extent to which they do this is measured in ohms (Ω). Resistors are found in almost every electronic circuit.

The most common type of resistor consists of a small ceramic (clay) tube covered partially by a conducting carbon film.

Resistors are too small to have numbers printed on them and so they are marked with a number of coloured bands.
Each colour stands for a number . Three colour bands shows the resistors value in ohms and the fourth shows tolerance as a percentage .

A **LED** has a positive and a negative lead. Each leg represents either an **anode** or a **cathode**.
It is important that this component is fitted the correct way around.

ANODE   CATHODE

Cable Cutters

Wire Snips

Soldering Iron

De-Soldering Pump

Solder

Soldering Iron Stand

A balanced diet
A balanced diet is based on the Eatwell Guide. An unbalanced diet can lead to dietary related disease.

Diet and health
There is a link between a poor diet, and the risk of developing some diseases.

This includes the risk of:
- cancer;
- coronary heart disease (CHD);
- bone health;
- anaemia.

There are two different types of nutrients:
- macronutrients;
- micronutrients.

There are three **macronutrients** that are essential for health:
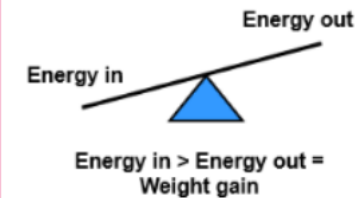- carbohydrate;
- protein;
- fat.

There are two types of **micronutrients**:
- vitamins;
- minerals.

Energy balance
To maintain body weight it is necessary to balance energy intake (from food and drink) with energy expenditure (from activity).

Energy out
Energy in
Energy in > Energy out = Weight gain

Eatwell Guide

Obesity
People who are obese are more likely to suffer from CHD, type 2 diabetes, gall stones, arthritis, high blood pressure and some types of cancers, i.e. colon, breast, kidney and stomach.

Inactivity
It is also important that the amount of time being sedentary is reduced.
Over time, sedentary behavior can lead to weight gain and obesity, which can increase the risk of developing chronic diseases in adulthood.

Moderate activity: walking, gardening, hiking
Vigorous activity: cycling, active recreation, swimming
Muscle strengthening activities: exercising with weights, or carrying heavy shopping, yoga

Energy from food
- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with Calories (kcal).
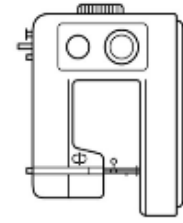- Different macronutrients, and alcohol, provide different amounts of energy.

Key Terminology

Energy: The power the body requires to stay alive and function.

Digestion: The process by which food is broken down in the digestive tract to release nutrients for absorption.

Macronutrients: Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.

Micronutrients: Nutrients which are needed in the diet in very small amounts.

In Year 8 we will be making a Tote Bag
You will ANALYSE the designer Lulu Guiness

When we ANALYSE Products or a Designer we look at:
Shape, Colour, Line , Pattern Texture
OR
Function, Appearance, Construction, End User

- To look at
- To examine in detail to explain and interpret

1. Contrasting colours
2. Curved lines
3. Cartoon like images

ANALYSE
(an+uh+lyz)

Lulu Guinness Design

Contrasting Colours:
Lulu often uses bright and contrasting colours, such as black and white, red and blue.

Geometric and Organic shapes:
Use of geometric and Organic shapes and patterns, including wavy and curved lines.

Founder's Philosophy:
I like things that give a sense of being vintage without actually being vintage. That's the philosophy behind my own designs.

History
Lulu Guinness founded her famous brand in 1989 at the age of 29, inspired by the idea of a fashion briefcase for women. This concept eventually morphed into a new idea for vintage style rose basket bags, reflecting Lulu's instincts for fashion's edgier boundaries.

Inspiration
Driven by her own style - vintage-inspired and ladylike, with a tongue-in-cheek twist - Lulu began creating the hand-held treasures that made her name. Her first design was a basket of red roses. One of her earliest influences was the Surrealist French designer, Elsa Schiaparelli. "She worked with emerging talents, like Picasso and Cocteau.

Impact
Lulu Guiness is credited for the creation of the famous eye designs which is characterized by strong outlines, bright colours, and slightly exaggerated forms.

Legacy:
One of Guinness's most recognizable works is her 'Lips' clutch bag. Never seen without her trademark red lipstick, Lulu Guinness is the personification of her brand, with the central motif, the distinctive Dali-esque lips featuring on all handbags. The Lips clutch bag remains a staple in the accessory collection, incorporating the Surrealist art movement into mainstream popular culture.

Key Products:
A turning point came in 1993 when the Victoria & Albert Museum bought the Florist's Basket bag. "I felt I could call myself a designer. But in this business, you're only as good as your latest idea."

Global Reach:
Accessories label **Lulu Guinness** was founded in 1989 with the original concept of a briefcase for women, which then evolved into vintage-style basket bags. Fast-forward almost 30 years and Lulu Guinness has become one of the most recognised labels worldwide thanks to its distinctive red lip design.

Relevance Today:
She has put her name to shoes, jewellery, a Mini. "I've done it all." High-street partnerships brought her wares to a wide audience: "I've never been interested in the top tier of the market. I don't have rules. I can't stand snobbishness," says Guinness, who has a cult following in Asia where "they appreciate things that are a bit different. We've always been the alternative to the It bag."

To judge the quality and performance of a product

1. Assess
2. Judge
3. Gauge
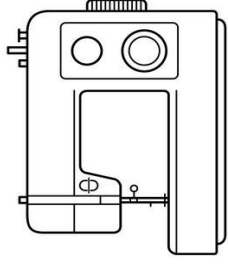
EVALUATE
(uh·**va**·lyoo·ayt)

In Year 8 we will be **EVALUATING your outcome**
You will look at the successes of your product, and what you could do differently next time

Evaluate Step	Definition	Question stems
Function	Work or operate in a proper or particular way.	Does it do the job? What is the function and purpose of the product? How well does it work? Could it be improved?
Appearance	The way that someone or something looks	Does it look like your original design? What does the product look like? What is the colour, texture, pattern and decoration of the product? Is the colour/texture of the product effective? is it what the customer wants? Does the product look good? Is it stylish? Is the style to the customers liking.?
Construction	The action of building or making something	What materials and components have been used to make the product? Why were these materials and components used? How has the product been made? What joining methods/ techniques have been used? Is the product well-constructed or will it fall apart when in use? Will it scratch easily?
End User	A person or other entity that consumes or makes use of the goods or services produced	Did the design link to the user? Who would buy the product and when would they use it? How well does the product do its job when compared to others? How marketable is it to the user?

- Statements made are backed up with evidence
- *Statements are written in sentences with comments that are relevant.*
- *Discussed the positive and negatives*
- *Clear PEE structured used*
- *Connectives used*
- *Purposeful facts - useful information identified*

In Year 8 we will be **making** a Tote Bag

You will use APPLIQUE and FRENCH SEAMS to MAKE parts

MAKING
(may-kuhng)

1. Assemble
2. Build
3. Construct

To put together
Practical activity

Tote Bag
- Applique: When is design is cut out of different coloured fabric shaped and layered on top of a base fabric and sewn in place
- French seam: a seam in which the raw edges of the cloth are completely covered by sewing them together, first on the right side, then on the wrong side.
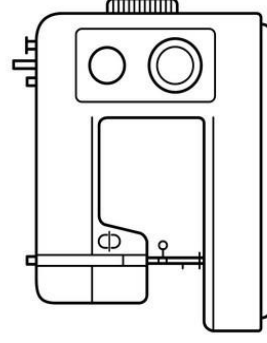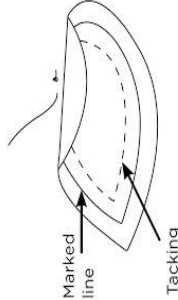
FRENCH SEAM

Anatomy of a French Seam

Right side of fabric
Wrong side of fabric

first seam

second seam

www.ButtonandSnap.com.
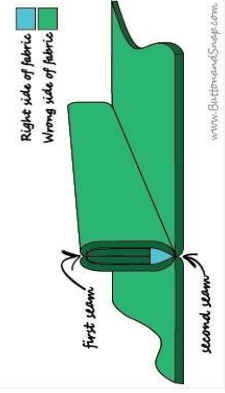
APPLIQUE

pieces of fabric are sewn or stuck on to a larger piece to form a picture or pattern.

Marked line

Tacking

Sew wrong sides of fabric together 1.5cm seam allowance

Seam 1.5cm

Step 1

Trim seam to measure 0.5 cm – cut along red seam line

Step 2

Turn fabric so right sides are together and sew 0.5 cm from folded edge

Step 3
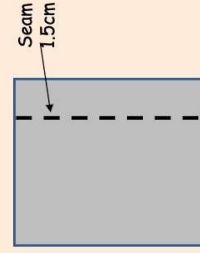
1 – Place your 1st shape in the centre of the pocket fabric.
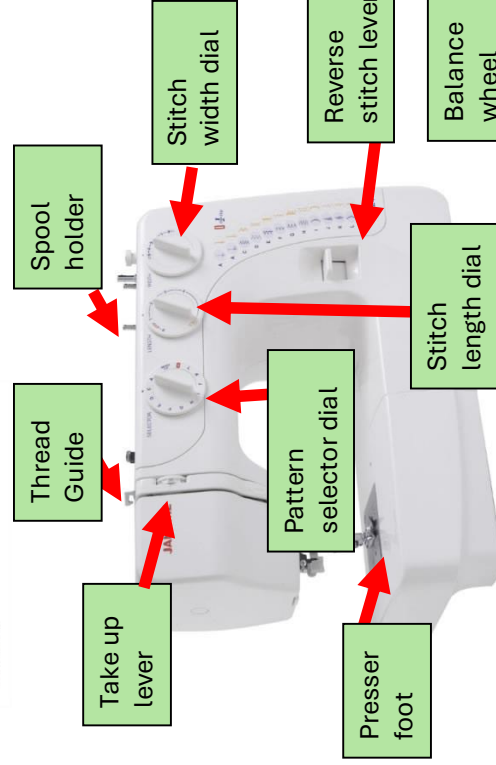
2 – Place the edge of the felt square in the centre of presser foot.
Then straight stitch around the edge of the shape.
REPEAT with the next layer of the design.

Sewing Machine
1. Sharp needle
2. Take-up lever pulls the thread through the machine
3. Different types of stitch patterns
4. Used to sew lots of different types of fabrics
5. Balance wheel can move the position of the needle

Stitch width dial

Reverse stitch lever

Balance wheel

Spool holder

Stitch length dial

Thread Guide

Pattern selector dial

Take up lever

Presser foot

Year 8 Drama Knowledge Organiser – Commedia Dell'arte

Commedia

You will be exploring an Italian style of theatre from the 1500s which has continued to influence drama today. You will be focusing on body language, use of gesture and learning how to perform wearing a mask.

Tasks for this topic:

- Appling exaggerated body language to a piece
- Learn the illusion rules for masked performance
- Learn to stances for and perform as the set Commedia Dell'arte characters

PERFORMANCE SKILLS

FACIAL EXPRESSIONS
GESTURES
BODY LANGUAGE
GESTURES
MOVEMENT
MOVEMENT

Performance Techniques	
Lazzo	Scripted routine
Illusion rules	Rules to follow to create effective masked performance work
Stock character	Character archetype
Pantomime	A comedy style of staged production which encourages audience participation

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YEAR 8 SUMMER TERM KNOWLEDGE ORGANISER: WAYWARD SOULS
ROMEO AND JULIET BY WILLIAM SHAKESPEARE

Plot Overview: Written in approximately 1595, Shakespeare's *Romeo and Juliet* is set in Verona, Italy and follows an age-old vendetta between two powerful families which tragically erupts into bloodshed, leading to the untimely deaths of two star-crossed lovers.

Act	Plot Summary
Act 1	• The play opens with a fight between the Capulets and the Montagues. The fight is stopped by the Prince who warns both families that any more fighting will be punishable by death. • Romeo reveals to Benvolio that he is in love with Rosaline, but she doesn't love him in return. • Mercutio encourages Romeo to gatecrash the Capulet Ball to cheer him up. • Tybalt, Juliet's cousin, spots Romeo and is outraged that a Montague has turned up. He threatens to fight him but is stopped by Lord Capulet. • Romeo meets Juliet for the first time, and they kiss. They then both find out who the other is and are separated.
Act 2	• Later that night, Romeo climbs over the orchard wall into the Capulets' garden to see Juliet at her window. • They tell each other that they love each other and decide to meet the next day to get married. • Romeo asks Friar Laurence to perform the marriage ceremony. He agrees, believing the marriage might help end the feud between the two families. • The Nurse agrees to be present at their secret wedding. • Romeo and Juliet meet in secret at Friar Lawrence's cell, and they get married.
Act 3	• Tybalt, still angry with Romeo for gatecrashing the Capulet Ball, challenges Romeo to a duel which ends with Mercutio being stabbed after Romeo gets in the way. • In a fit of rage, Romeo kills Tybalt. • The Nurse tells Juliet that her cousin, Tybalt has been killed. At first, Juliet curses Romeo's name but quickly realises she needs to stand beside her husband and so the Nurse agrees to get a message to Romeo. • Romeo is hiding at Friar Laurence's cell and is given the news he has been banished. Romeo says that being banished is worse than being killed as he won't be able to see Juliet. • Lord Capulet arranges for Juliet to marry Paris in three days' time. • Juliet refuses and Lord Capulet threatens to disown her if she doesn't agree. • When they are alone, the Nurse tries to convince Juliet to forget Romeo and marry Paris. Juliet decides to visit Friar Lawrence.
Act 4	• The Friar devises a plan where Juliet will take a potion that will make her appear dead. • Friar Lawrence plans to let Romeo know the truth via a message so he can collect her from the Capulet family tomb. • Juliet returns home, agrees to Marry Paris a day earlier than planned and then takes the potion, appearing dead immediately. Her body is taken to the Capulet tomb.
Act 5	• Romeo learns of Juliet's 'death' from his servant Balthazar and is devastated. He buys some poison from an apothecary and returns to Verona to visit Juliet's tomb. • Friar Lawrence realises Romeo did not get his original message detailing the plan. He quickly rushes to the Capulet tomb. • When Romeo gets to the tomb, he sees Paris and kills him. • Romeo sees Juliet's body and believing she is really dead, takes the poison and dies. • When Juliet wakes up, she takes Romeo's dagger and stabs herself. • The Prince arrives and discovers the dead bodies in the tomb. • Capulet and Montague agree to end the feud.

Key Symbols

Poison	Dagger	Light/Dark

Big Ideas

Love	Violence
An intense feeling of deep affection.	Behaviour involving physical force intended to hurt, damage, or kill someone or something.
Honour	**Rebellion**
Having or showing a high respect for something or someone.	The action or process of resisting authority, control, or convention.
Patriarchy	**Fate**
A society controlled by men, often excluding women.	Events outside of a person's control, regarded as predetermined by a supernatural power.

YEAR 8 SUMMER TERM KNOWLEDGE ORGANISER: WAYWARD SOULS
ROMEO AND JULIET BY WILLIAM SHAKESPEARE

Key Characters

Juliet Capulet (Juliet) Protagonist / tragic hero / Lord Capulet's only daughter/ decisive / passionate / headstrong	**Romeo Montague** (Romeo) Protagonist / tragic hero / Lord Montague's only son/ sensitive / impulsive / passionate	
Lord Capulet (Lord Capulet) Head of the Capulet household / dominant / aggressive	**Lord Montague** (Lord Montague) Head of the Montague household / devoted	
Lady Capulet (Lady Capulet) Juliet's mother/ timid/ selfish	**Lady Montague** (Lady Montague) Romeo's mother/ caring / compassionate	
Tybalt (Tybalt) Juliet's cousin/ strong-willed/ passionate/ loyal/ argumentative	**Benvolio** (Benvolio) Romeo's cousin/ sensible/ peacekeeper	
The Nurse (Nurse) Juliet's nurse/ kind/ loving/ mother figure to Juliet	**Mercutio** (Mercutio) Romeo's best friend/ loyal/ funny/ devoted	
The Prince (Prince) Prince of Verona/ imposing/ formal/ moral	**Friar Lawrence** (Friar Lawrence) A priest/ religious man in Verona /moral/ kind/ optimistic	

Context – We must understand the influences of the world we live in when examining texts.

Femininity
Femininity refers to the qualities or attributes regarded as characteristic of women or girls. It was expected that females displayed 'traditional' feminine qualities such as subservience, obedience and sensitivity.
Shakespeare supports and challenges these expectations with Juliet, who is both emotional yet rebellious, and Lady Capulet, who allows her daughter to be mistreated rather than standing up to Lord Capulet.

Masculinity
Masculinity refers to the qualities or attributes regarded as characteristic of men or boys. It was expected that males displayed 'traditional' masculine qualities such as strength, aggression and stoicism (hiding emotions).
Shakespeare supports and challenges these expectations through Romeo, who is sensitive but violent, and Tybalt who is passionate and volatile.

Power of the Patriarchy
During Shakespearian times, women were seen an objects or possessions. Once a female was married, her ownership transferred from her father to her husband.
Women were expected to obey their father and/or husband, as it was believed that men were logical and made better choices than women. In the play, Juliet is seen as a rebel when she refuses her father's order to marry Paris.
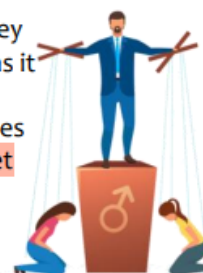
Star-Crossed Lovers
The term "star-crossed lovers" refers to two people who are not able to be together for some reason e.g. Romeo and Juliet. Lovers, whose relationship is doomed to fail, are said to be "star-crossed" (frustrated by the stars) because it was claimed that the stars control human destiny.

STAR-CROSSED LOVERS ROMEO AND JULIET

Social Expectations
In 16th Century England society was expected to follow rigid rules and norms e.g. upholding family honour was of the greatest importance to a man.
The long-standing feud between the Montagues and Capulets strengthens family loyalty and justifies violence.

Morality
The social standards of good or bad behaviour. 16th Century England was a Christian country and most of Shakespeare's characters attempt to uphold Christian values. Romeo and Juliet's death is such a shocking event, as it is considered a sin and therefore immoral to take human life.

YEAR 8 SUMMER TERM KNOWLEDGE ORGANISER: WAYWARD SOULS
TECHNICAL ACCURACY & KEY DEVICES

'FOUR FOR MORE'-THE 4-PART SUCCESS STORY

Part	Key Features
SETTING	• Introduce your story by focusing on the setting • Describe the weather / environment / surroundings / objects • DEVICES: Personification / pathetic fallacy / symbolism / prepositions
CHARACTER	• Describe your character(s) within your setting • One or two characters – keep it minimal • Craft their actions / behaviour to reflect their personality and emotions • DEVICES: Sensory language / similes / metaphors / minimal dialogue
FLASHBACK	• Include a flashback to teach the reader something about your character and / or their world • Begin this section with a trigger • This memory should contrast your character's current situation • DEVICES: Sensory language / juxtaposition / light imagery / similes / metaphors / symbolism
RETURN TO THE SCENE	• Begin this section with a trigger that forces your character back to their current world • Offer a glimpse of change / a subtle change to end your story • Return to something that you described in your opening paragraph to create a cyclical structure • DEVICES: Sensory language / personification / pathetic fallacy / symbolism / cyclical structure

Device / Feature/ Skill

Metaphor
Describing something by stating it is something else

Symbolism
Objects, colours, sounds, places that represent another idea

Juxtaposition
Contrasting ideas / images

Personification
Giving living qualities to something non-human

Show Not Tell
Describing a character through their actions and facial expressions

Sensory language
Five senses

Temporal Reference
Using a time reference to indicate a flashback

Simile
Comparing something to something else: 'as', 'like'

Punctuation

Apostrophes
-To show that letters are missing in a word
-To show possession

Semi-colons
-To help join closely connected ideas in a sentence

Tenses

PAST
Something that has already happened
Had / went / said / walked

PRESENT
Something that is currently happening
Have / go / say / walk

FUTURE
Something that will happen
Will have / will go / will say / will walk

Common Homophones

There / Their / They're

Your / You're

Its / It's

Which / Witch

Word Classes

Adjective	Adverb	Preposition	Pronoun	Noun	Verb
Describes a noun or pronoun. Blue / young / powerful	How, when or where something happens. Furiously / yesterday / here	Where something is; the time, direction or cause of something. On / under / above	Words that replace nouns or noun phrases. She / he / they	Person, place, thing, idea or state of being. Manchester / cat / love	An action or state of being. Jump / write / be

Year 8 Coasts

Term	Definition
Coast	Where the land meets the sea
Island	A piece of land completely surrounded by sea
Ocean	A very large body of water, there are 5.
Erosion	When the sea wears away the land
Weathering	When the weather or plants cause rock to breakdown
Transport	How the sea transports material
Deposition	When the sea drops material due to a lack of energy
Landform	A natural feature of the earth e.g. beach
Wave	A disturbance on the surface of the water usually by the wind. They look like ridges.
Swash	When a wave moves up the beach
Backwash	When a wave goes back down the beach
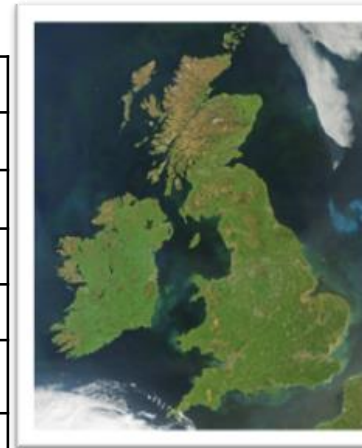
Great Britain is an **island** surrounded by sea. Therefore you are never far from the **coast**. The **landforms** on our **coast** have all been created by the sea through the processes of **erosion**, **transport** and **deposition**.

Types of wave
There are two different types of wave. Constructive waves which are low energy and deposit material on the shore. These build beaches.
Destructive waves are high energy and usually occur during storms when there is lots of wind. Over time they destroy beaches and cliffs.

Erosion: When the sea wears away the land. There are four different processes of erosion.

Hydraulic Action: Is the force of the waves hitting The cliffs. Air bubbles are forced into cracks Weakening the rock until it breaks off.

Abrasion: small rocks and pebbles hitting the cliff repeatedly wears the cliff away.

Attrition: rocks bashing into each other and becoming smaller and smoother.

Solution: Chemicals in the water can slowly dissolve Certain types of rock.

hydraulic action

abrasion

attrition

solution

abrasion
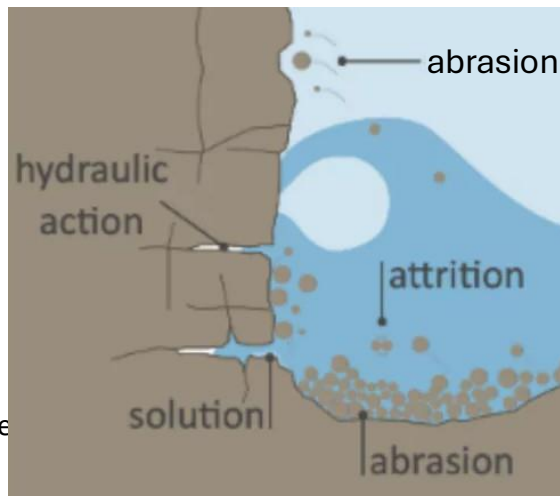
CONSTRUCTIVE WAVES HAVE A LOWER WAVE HEIGHT

BUILD UP (CONSTRUCT) THE BEACH WITH DEPOSITION FROM THE STRONG SWASH

STRONG SWASH AND A WEAK BACKWASH
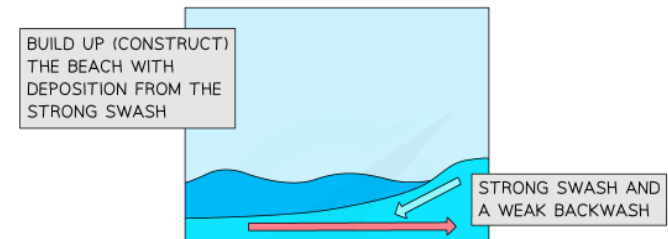
DESTRUCTIVE WAVES HAVE A HIGHER WAVE HEIGHT

BREAK DOWN (DESTROY) THE BEACH WITH EROSION FROM THE STRONG BACKWASH

WEAK SWASH A STRONG BACKWASH
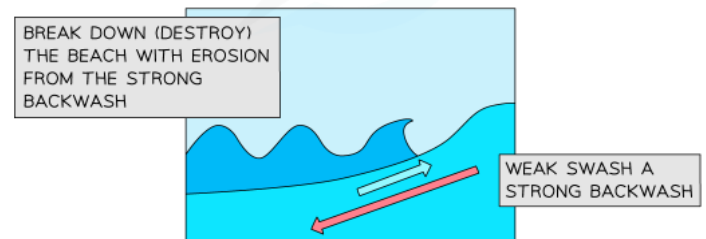
Types of Weathering:
1. Biological: plant roots can weaken or break rock apart
2. Chemical: chemicals in the rain can slowly dissolve certain types of rock
3. Mechanical (free-thaw) water that gets into cracks in rocks will expand as it freezes and compress as it melts. Over time this can cause rocks to break apart.

A coastal landform created by erosion: HEADLANDS AND BAYS
1. Headlands and bays form where there are alternating bands of hard and soft rock perpendicular to the oncoming waves (see the labels on the first diagram)
2. At first, the softer rock (e.g. clay) is eroded backward by differential erosion (hydraulic action and abrasion), forming an inlet
3. As the inlet continues to erode it curves inwards, and a bay is formed, usually with a beach.
4. The harder rock (e.g. limestone) is left sticking out to sea as a headland
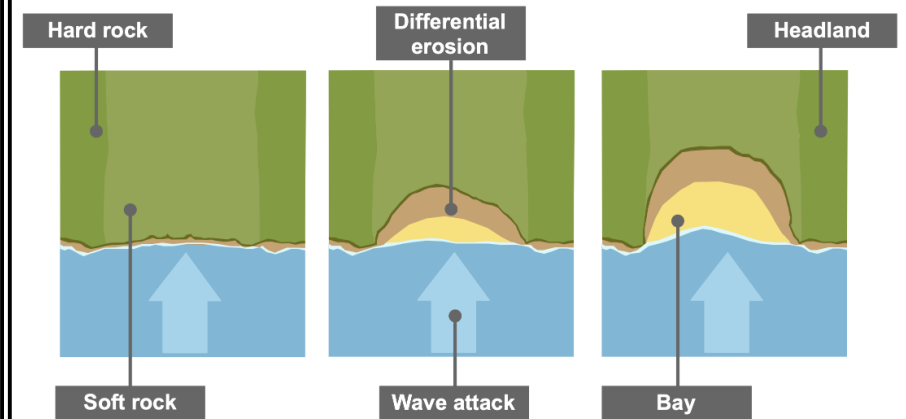
Coastal Transportation and Deposition can form: A COASTAL SPIT

The prevailing (most common) wind direction can create waves that hit a beach at an angle. This has the potential for material to be transported down the coast (see picture labelled longshore drift)

At times the wind can change direction which makes the material get deposited and form a hook. See land in front of salt marsh. Eventually enough sand builds up, sand dunes form and the sea behind the spit will start to dry out creating a salty marsh.

Deposition and change in wind direction over many years can create coastal spits (this is new land being created by moving material along the coast).

Year 8 Hot Deserts

Term	Definition
Desert	**Hot deserts** are hot arid areas with little rainfall, extreme temperature and sparse vegetation
Ecosystem	A collection of plants and animals within a particular area.
Biome	A large ecosystem where plants and animals are determined by the area's climate.
Climate	Climate is the average weather conditions in a place over a long period of time.
Adaptation	When a plant or animal changes to suit the environment it lives in.
Drought	When an area receives very little rainfall.
Development	How a countries standard of living changes over time (wealth & wellbeing)
Infertile Soil	Soil that cannot support plant growth / poor quality so plants will not grow
Desertification	This is process by which healthy soil turns into desert.

Location

- desert, deserts are found near to or on either the Tropic of Cancer or the Tropic of desert, icorn.

- The Sahara Desert is the worlds largest desert and it spans the full length of Northern Africa.

Climate
- During the day, desert temperatures rise to an average of 38°C (in summer).
- At night the temperature can drop as low as -2°C as there are no clouds to keep the heat close to earth.
- Deserts receive under 250mm of rainfall per year making them the driest of all biomes. The average in Mancheste r is 900mm per year.

Soil
- Desert soils are thin, sandy and rocky.
- Desert soils are very dry. When it does rain they soak up the water very quickly.

Vegetation in the Desert
Deserts have very low biodiversity because it is very hot and dry. The plants that are able to survive there are heavily adapted to cope with the lack of rain and high temperatures.
The **cactus** opposite has a number of important adaptations.
- The thick waxy skin prevent moisture loss in the heat.
- The large fleshy stems can store water for when the plant needs it because there is so little rainfall.
- Spikes stop animals from eating the stem to get the water.
- The shallow widespread roots are so the plant can catch any rainfall quickly before it evaporates.

Thick waxy skin

Large fleshy stems

Spikes

Shallow, widespread roots

Who lives in Hot Deserts?

People have been living in deserts for 1000's of years. In the Sahara Desert there is a group of people called the **Bedouin** who have lived in the desert for many generations. They are a **traditional society** meaning the knowledge and skills have been passed down through generations about how to survive in the desert. They are also **nomadic** meaning they move regularly in search of food and water for themselves and their animals.

Las Vegas: A city in the desert

- Las Vegas is a city that was built in the Nevada Desert. It became a city after the Hoover Dam was built on the Colorado River creating Lake Mead providing enough water to support a larger population.
- Las Vegas has a population of 660,000 people.
- Due to an increasing population and low rainfall levels in 2020 Lake Mead was reduced to 25% of its capacity.
- Las Vegas is having to put in place measures to try and reduce the amount of water it is using.
- Some of these measures are banning big swimming pools, re-using water and removing grass (which shouldn't grow in the desert anyway.)

Can Deserts Grow?

Desertification is the process by which healthy soil becomes desert. This is happening in deserts all over the world. So yes, deserts can grow.

Two reasons desertification is occuring:

1. **Climate Change:** As the planet is warming up and some areas are receiving less rainfall vegetation is dying.
2. **Overuse of the soil:** Too much farming can cause the soil to become infertile. Plant roots no longer hold the soil together and it can be blown away by wind. This leaves bare rock.

Can we stop deserts growing?

Yes, in Africa some methods are proving successful at stopping the Sahara growing

1. **The Great Green Wall:** Planting millions of trees along the edge of the Sahara desert. The roots hold the soil together and the tree canopy provides shade reducing the temperature of the soil so it can retain moisture.

What do I need to know?
- What were the long term causes of the First World War?
- How did the assassination of Franz Ferdinand lead to the outbreak of the First World War?

What were the long term causes of the First World War

- **Militarism - *Building up armed forces (army and navy), getting ready for war.*** Many European countries had industrialised during the late 1800s and early 1900s. This allowed many European countries build massive armies with the most up to date technology. Britian led the charge at sea, creating dreadnought battleships.
- **Alliances - *Agreements or promises to defend and help another country.*** Many countries at the time agreed to work together and protect each other in case of war.
- **Imperialism - *Trying to build up an Empire.*** Many European countries believed they should have an Empire. . This caused a lot of tension between countries.
- **Nationalism - *Having pride in your country, groups wanting to have a country of their own.*** People felt that their country was superior to others. This was fuelled by government propaganda that sought to portray the war as a matter of duty.

How did the events in Sarajevo lead to war?

Archduke Franz Ferdinand of Austria-Hungary was assassinated on June 28, 1914, in Sarajevo, Bosnia, by Gavrilo Princip, a member of the Serbian nationalist group the Black Hand Gang Austria-Hungary blamed Serbia. This led to many countries becoming involved because of the growing alliance system and putting pressure on the already strained relationships that ultimately triggered the start of World War I.

Key vocabulary

Empire	A collection of areas of land that are ruled over and controlled by one leading country.
Assassination	The murder of a well known person usually for political reasons.
Cause	A reason why something happens. These can be long term (happening for a long time) or short term (happen just before an event).

What was the Alliance system?

Triple Entente	Triple Alliance
Britian, France, Russia	Austria-Hungary, Germany, Italy

How did the Alliance system lead to WWI?

28th June	Archduke Franz Ferdinand is assassinated in Sarajevo, Bosnia
6th July	Germany offers a 'blank cheque' to find the killers and punish them. It says it will support the punishment
23rd July	Austria – Hungary give Serbia an ultimatum – Give them anyone who was involved in the assassination or face war
28th July	Serbia refuses to co-operate with Austria-Hungary. Austria-Hungary declares war on Serbia
31st July	Russia, supporting Serbia starts to move troops and prepare for war.
1st August	Germany asks Russia to hold off its defence of Serbia. Germany also sends troops towards France
2nd August	Germany demands safe passage through Belgium or threatens invasion – Belgium refuse
4th August	Germany invades Belgium and Britian declares war on Germany because of a treaty from 1839 that Germany broke by invading Belgium.
6th August	Austria-Hungary declare war on Russia. WW1 had begun.

What do I need to know?
• Why did men volunteer to fight in the First World War?
• Conscientious objectors: brave men or cowards?
• What was the contribution of Empire troops to the First World War?

Why did men volunteer to fight in the First World War?

• **Patriotism and Duty** – Many British men felt a strong sense of patriotism and duty to their country. Propaganda, national pride, and loyalty to the British Empire encouraged them to enlist, believing they were defending Britain.
• **Social Pressure and Expectations** – White feathers were given to men who didn't volunteer, and posters depicted soldiers as heroes, making it difficult for men to refuse without being labelled as cowards.
• **Adventure and Travel** – For many young men, the promise of adventure, travel to foreign lands, and the belief that the war would be short encouraged them to sign up willingly.

• **Economic Hardship** – Many working-class men faced unemployment and poverty. The army provided stable pay, food, and shelter,

• **Pals Battalions and Community Bonds** – The British Army encouraged men to enlist together in "Pals Battalions," meaning they could fight alongside friends, relatives, and colleagues. This sense of camaraderie and loyalty to their communities played a huge role in recruitment.

Key vocabulary

Volunteer	When someone freely offers to do something
Conscientious Objector	Men who were opposed to the war and did not want to fight.
Recruitment	Enlisting new people into the armed forces
Conscription	When every man aged between 18 and 41 had to join the army.

What was the contribution of Empire troops to the First World War?

• **Manpower from India** – Over 1.3 million Indian soldiers served, fighting in major battles like Ypres and the Somme, with around 74,000 losing their lives for Britain.
• **Canadian Forces at Vimy Ridge** – Canadian troops played a crucial role in the 1917 Battle of Vimy Ridge, securing a key victory that boosted Allied morale and nationalpride.
• **African Soldiers and Laborer**s – Thousands from British Africa, including the King's African Rifles, served in the East African campaign, while many more worked as porters and laborers.
• **West Indian Regiment** – Caribbean soldiers served in the British West Indies Regiment, fighting in the Middle East and supporting European campaigns despite facing discrimination and poor conditions.

Conscientious objectors: brave men or cowards?

• Those who refused to fight were called conscientious objectors (COs). Objecting on moral or religious grounds led to non-combatant roles in civilian work of national importance: labouring on farms or in aid posts. Some volunteered to drive field ambulances, but failure to serve in any capacity meant imprisonment.

• Around 1500 men refused to contribute to the war in any way. Many of these were imprisoned serving repeated sentences under hard labour. Conditions were harsh and 73 absolutists died of the treatment they received.

• One notable objector was William Chadwick from Westhoughton. He was a communist and did not believe in going to war. He was a fireman and lived at 15 Market Street. He was arrested and court-martialled on 12 May and was sentenced to hard labour. After the war, William found it difficult to get work, as many employers discriminated against COs.

What do I need to know?
- How was trench warfare fought?
- What happened during the Battle of the Somme?
- What medical problems did they cause?
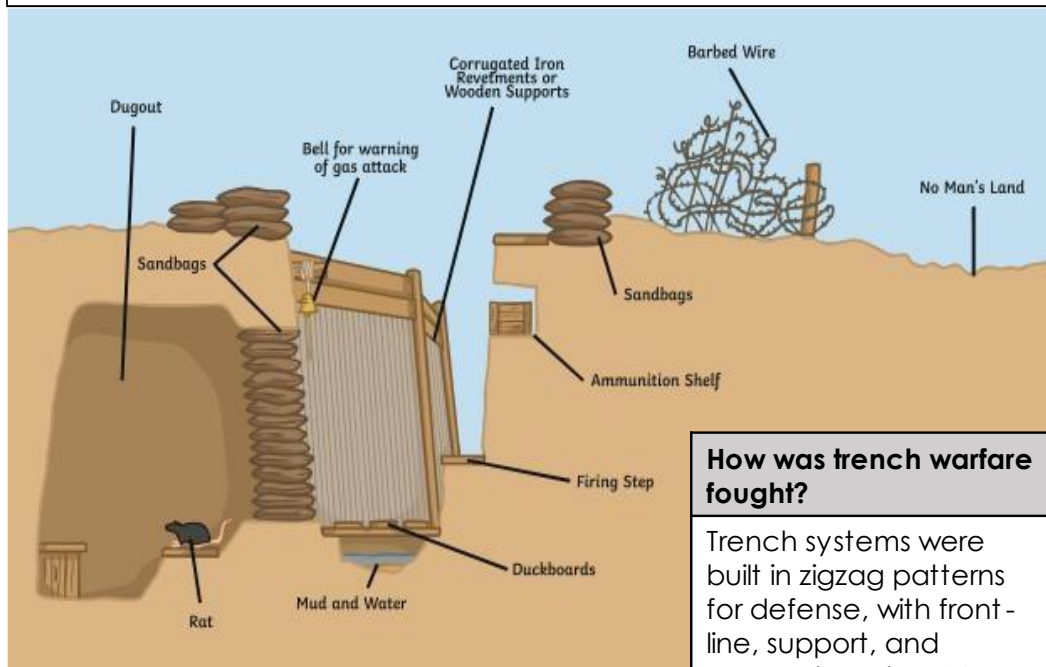
How was trench warfare fought?

Trench systems were built in zigzag patterns for defense, with front-line, support, and reserve trenches. No man's land separated opposing trenches, preventing easy advances.

What happened during the Battle of the Somme?

The battle of the Somme , from July-November 1916, was one of WWIs **deadliest battles**. It was fought between British and French allied forces and Germany. It aimed to break the stalemate that had developed. Soldiers would leave their trench and '**go over the top**' running across no man's land. The first day saw 57,000 British causalities.

What medical problems were there in the trenches?

Trench Foot
Men would stand in waterlogged trenches for hours or even days. Their feet would eventually turn numb, and the blood would stop circulating to their feet. If left untreated their feet would be amputated. A known prevention was changing socks and applying whale oil to your toes!

Shellshock
Soldiers experienced dangerous encounters almost every day. They were constantly fuelled by adrenaline. This caused many soldiers to develop PTSD (Post-traumatic stress disorder). Not much was known at the time and some soldiers were arrested as it was believed they trying to avoid war.

Trench Fever
Soldiers would become very dirty in the trenches, and this would attract lice and rats. The lice would get in to the soldier's heavy wool clothing and bit the soldiers. This would then give the soldiers trench fever. They would experience hallucinations, high fevers and sweating. 'De-lousing' stations would be set up to give the soldiers clean clothes, haircuts and showers.

Battle injuries and gas attacks
Soldiers faced many horrific injuries on the Western Front with many suffering from bullet and shrapnel wounds. Gas attacks were also common with many gases being first used in WWI. Gases like chlorine and mustard gas were widely used. Soldiers were then issued with gas masks to prevention injury. Before that, some men used handkerchiefs soaked in urine!

Key vocabulary	
Trenches	Ditches that were dug into the ground and connected that were separated by an area of land called no man's land
Butcher	Someone who has no regard for human life
Bungler	Someone who makes a lot of mistakes

What do I need to know?
• How did women campaign for the vote?
• Did Emily Davison aim to die for the vote?
• Was the First World War a turning point for women?

Was the First World War a turning point for women?

World War I was a turning point for women, as they took on roles in factories, transport, and nursing, proving their capability beyond traditional domestic work. Their contributions challenged gender norms and strengthened arguments for suffrage, leading to women over 30 gaining the vote in Britain in 1918.	It was not a turning point as while World War I gave women more opportunities, many lost their jobs once men returned. Traditional gender roles persisted, and full suffrage wasn't granted until 1928. Women's rights were already advancing before the war, suggesting it was a catalyst rather than a true turning point for long - term equality.

How did women campaign for the vote?

• Militant Tactics (Suffragettes?- They belonged to the Women's Social and Political Union (WSPU). Engaged in more disruptive tactics, such as window smashing, arson, and chaining themselves to public places, refused to pay taxes or other civic obligations to protest the lack of voting rights, went on hunger strikes in prison to protest their treatment and gain attention to the cause.

•Peaceful and Persuasive Tactics (Suffragists) - **Formed organizations like the National Union of Women's Suffrage Societies (NUWSS)** to coordinate efforts and raise awareness, collected signatures on petitions and lobbied politicians to support women's suffrage, delivered speeches, wrote articles, and organized public events to educate the public about the importance of women's suffrage, organized peaceful marches, demonstrations, and pickets to raise awareness and pressure the government.

Did Emily Davison aim to die for the vote?

Emily Davison intended to die for the vote, as she had a history of extreme suffragette activism, including hunger strikes and force-feeding. She carried a suffragette flag and positioned herself dangerously in front of the king's horse, suggesting a deliberate act of martyrdom to draw attention to women's suffrage.	**Davison likely did not intend to die,** as she had a return train ticket and a ticket for a suffragette event later. She may have aimed to attach a suffragette scarf to the king's horse to gain publicity. Her actions were reckless but may not have been a deliberate suicide mission.

Impact
Emily Davison's death brought massive **attention to the suffragette movement.** Her funeral became a powerful feminist demonstration, inspiring further activism. Though controversial, her sacrifice highlighted the struggles women faced. Her actions contributed to the growing pressure for change, helping pave the way for women's suffrage in Britain.

Key vocabulary

Suffragettes	People who advocated for women's right to vote through militant and direct action tactics, often including civil disobedience.
Suffragists	People who advocated for women's right to vote through peaceful, legal means.

Pie charts

Key Vocabulary

Angle	The amount of turn between 2 lines.
Pie chart	A chart that displays data proportionally.
Protractor	Equipment used to measure and draw angles

Drawing pie charts

How many degrees for one person? $\dfrac{360}{90} = 4°$

$360 ÷ \text{total} = \text{degrees for one person.}$ In this example one person is $4°$.

Subject	Number of Students	Calculation	Angle
Maths	40	$40 × 4°$	$160°$
English	30	$30 × 4°$	$120°$
History	20	$20 × 4°$	$80°$
Total	90		$360°$

Multiply number of students by $4°$ to get the angle.
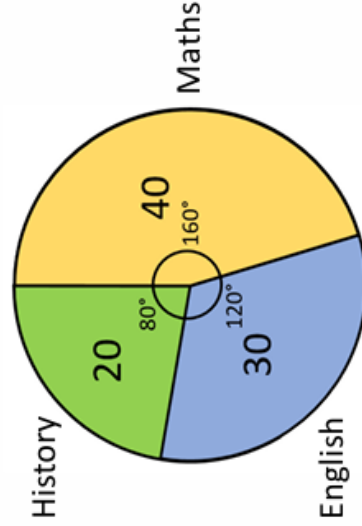
Draw the angles onto the pie chart. Label each part with what it is (subject in this example) and how many it represents (40 for Maths in this example).

Maths 40 160°
English 30 120°
History 20 80°

Interpret pie charts (fractions)

A class of **32 students** were surveyed to find their **favourite pet.**
The **pie chart** shows the total answers. How popular was each animal?
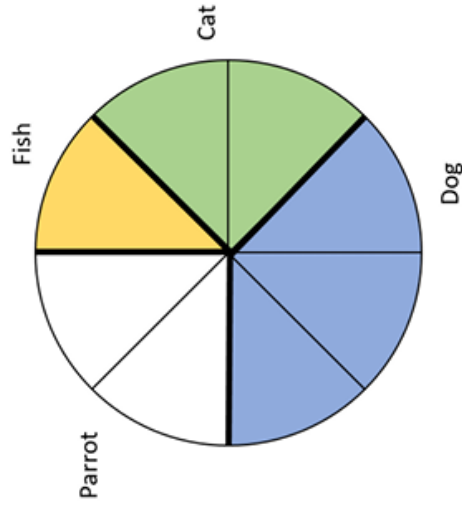
The pie chart is split into 8 pieces, so each sector is worth $\frac{1}{8}$ of 32 = 4

Fish: $\frac{1}{8}$ of 32 = 4

Cat: $\frac{2}{8}$ of 32 = 8

Dog: $\frac{3}{8}$ of 32 = 12

Parrot: $\frac{2}{8}$ of 32 = 8

Check that the totals add up to the original total in the question.
(4 + 8 + 12 + 8 = 32)

Interpret pie charts (angles)

150 students were surveyed about their favourite food.

Favourite Food	Angle	Calculation	Frequency
Burger	72°	$\frac{72}{360} \times 150$	30
Pasta	168°	$\frac{168}{360} \times 150$	70
Salad	96°	$\frac{96}{360} \times 150$	40
Pizza	24°	$\frac{24}{360} \times 150$	10
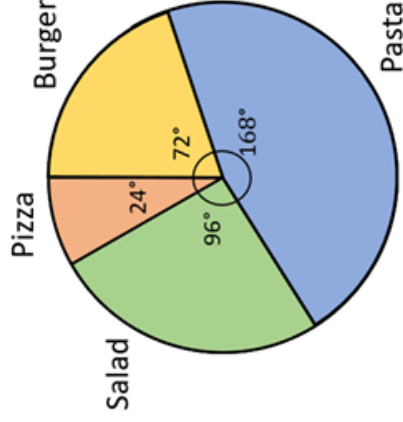
To calculate the frequency from a pie chart when you are given the angle, you do the opposite of what you do to calculate the angle.

Angle ÷ 360 × total frequency

Online clips

M574, M165

Systematic listing

and Product rule

Component Knowledge

- To be able to list the possible outcomes of different events.
- To be able to use the product rule to determine the number of outcomes for different events.

Key Vocabulary

Outcome	The possible result of an experiment
Product	The answer when two or more numbers are multiplied together.

Systematic listing

Systematic listing is the method of listing all the possible outcomes of an event.

Worked example

At the ice cream kiosk, you can choose...**one flavour** of ice cream and **one topping.**

Flavour	Toppings
Vanilla	Flake
Chocolate	Sprinkles
Banana	Nuts

There are 9 possible combinations:

Vanilla and Flake, Vanilla and Sprinkles, Vanilla and Nuts
Chocolate and Flake, Chocolate and Sprinkles, Chocolate and Nuts
Banana and Flake, Banana and Sprinkles, Banana and Nuts

Product rule for counting

Product rule uses multiplication to determine the number of possible outcomes of an event rather than listing them all.

Worked example.

A safe has a 4-digit combination for example 4 5 7 8

Use the product rule to find the number of 4-digit combinations you can have on this safe.

Each digit has a possible 10 possibilities (0, 1, 2, 3, 4, 5, 6, 7, 8 and 9)

Number of combinations = 10 (1st digit) x 10 (2nd digit) x 10 (3rd digit) x 10 (4th digit) = 10,000

Online clip

U369

Probability

Key Vocabulary

Probability	The mathematical chance, likelihood, of an outcome happening
Event	The "thing" that is being completed/done/observed/counted
(Event) Outcome	What happens when the event is performed
Probability scale	A numerical scale from 0 to 1, with 0 being an impossible outcome and 1 being an outcome certain to happen
Mutually exclusive (event) outcomes	When outcomes cannot happen at the same time eg being an adult and being a child, you **cannot be both**
Exhaustive (event) outcomes	When a set of outcome cover all possibility with no gaps eg it snowing and it not raining

Probability:

The probability of an (event) outcome A, happening is

$$P(outcome\ A) = \frac{number\ of\ ways\ outcome\ A\ can\ happen}{number\ of\ ways\ any\ outcome\ can\ happen}$$

e.g. the probability of rolling a number 4 on a regular 6 sided dice

*Outcome "4": **4**, so **1 option***

$$P(roll\ a\ 4) = \frac{1}{6}$$

*All possible outcomes: **1, 2, 3, 4, 5 or 6**, so **6 possibilities altogther***

e.g. the probability of rolling a number greater than 4 on a regular 6 sided dice

*Outcomes "greater than 4": **5 or 6**, so **2 options***

$$P(roll\ a\ number\ greater\ than\ 4) = \frac{2}{6}$$

*All possible outcomes: **1, 2, 3, 4, 5 or 6**, so **6 possibilities altogther***

Online clips

M655, M941, M938, M755

Frequency trees

Key Vocabulary

Frequency	The number of times an event occurs.
Probability	The chance that something will happen.
Frequency tree	Used to record and organise the frequency of events occurring.

Frequency trees are a way of organising information. They can be used to solve probability problems.

We start with the total number of items and then divide these items into two or more categories, writing down the frequency of items in each category.

A group of 80 boys and girls sat a test.

36 of the children are girls.

9 of the 80 children failed the test.

39 of the boys passed the test.

80 − 36 = 44

44 − 39 = 5

36 − 4 = 32

9 − 5 = 4

boys — 44
girls — 36
80

passed — 39
failed — 5
passed — 32
failed — 4

5 ← Number of boys who failed.
44 ← Total number of boys.
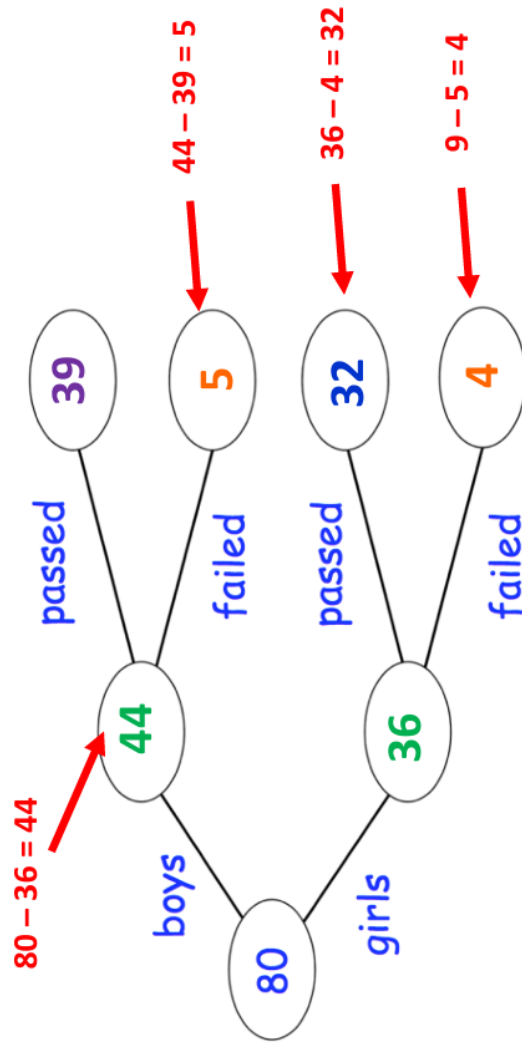
One of the boys is chosen at random.

Work out the probability that the boy failed the test. $\frac{5}{44}$

<u>Online clip</u>

U280

Relative Frequency

Component Knowledge

- Understand what relative frequency is
- Calculate experimental probability
- Use relative frequencies or experimental probabilities to estimate expected outcomes

Key Vocabulary

Probability	The mathematical chance, likelihood, of an outcome happening
Event	The "thing" that is being completed/done/observed/counted
(Event) Outcome	What happens when the event is performed
Probability scale	A numerical scale from 0 to 1, with 0 being an impossible outcome and 1 being an outcome certain to happen
Theoretical probability	Probability based on reasoning
Experimental Probability	Probability estimated from the results of conducting an experiment (set of observations)
Frequency	The number of times something happens
Relative frequency	The number of times an event outcome happens relative to the number of times the event takes place (number of times experiment is conducted)
Number of Trials	The number of times an experiment is conducted
Expected outcomes (Expectation)	The number of times you would expect a particular (event) outcome to happen for a specified number of trials

Experimental Probability:

An **estimate** of the probability of an (event) outcome A, happening when an experimental is conducted

$$ExP(outcome\ A) = \frac{number\ times\ outcome\ A\ happened}{number\ of\ times\ event\ takes\ place\ (total\ number\ of\ trials)}$$

e.g. If a biased coin is flipped 20 times and lands on tails 7 times

$$ExP(lands\ on\ \textbf{tails}) = \frac{7}{20}$$

Relative Frequency:

The number of times (frequency) an (event) outcome A happens, in relation to the number of times the event is performed

$$Rf\ (outcome\ A) = \frac{number\ times\ outcome\ A\ happened}{number\ of\ times\ event\ takes\ place\ (total\ number\ of\ trials)}$$

e.g. If a biased coin is flipped 20 times and lands on tails 7 times

$$Rf(lands\ on\ \textbf{tails}) = \frac{7}{20}$$

Relative frequencies are commonly written as decimal $Rf(lands\ on\ \textbf{tails}) = 0.35$

Relative Frequency v Experimental Probability:

Can be thought of as inter-changeable, relative frequency is used as an experimental probability.

Expectation:

Relative frequency can be used to estimate the probability of an (event) outcome A happening, and hence the expected number of times (event) outcome A would happen over a given number of observations (experiments)

Expectation of outcome A = Rf(A) × number of trials

Eg The results of rolling a biased 6-sided dice 30 times are recorded in the table

Score	1	2	3	4	5	6
Frequency	4	5	2	8	4	7

The relative frequencies can be calculated by $\frac{frequency}{total\ number\ of\ trials\ (rolls\ of\ dice)}$

Rel Freq	$\frac{4}{30}$	$\frac{5}{30}$	$\frac{2}{30}$	$\frac{8}{30}$	$\frac{4}{30}$	$\frac{7}{30}$

i. **Estimate** the number of times the dice would land on 4, if rolled 120 times

Expectation of "lands on 4" = Rf(lands on 4) × number of trials

Expectation of "lands on 4" $= \frac{8}{30} \times 120$

$= \frac{8 \times 120}{30}$

$= 32$

When rolled 120 times we would expect the dice to land on a 4, 32 times.

Note: Like Probabilities, relative frequencies should always sum to 1.

<u>**Online clips**</u>

M332, M206

Sample Spaces

Key Vocabulary

Outcome	The way something turns out
Sample space	Records the possible outcomes of two different events happening
Event	A thing that happens or takes place
Probability	The chance of an event happening
Independent	Events which do not have an effect on each other
Dependent	Has an effect on something else – eg Not replacing a counter when taking multiple out of a bag

This is what a sample space would look like for spinning a spinner and flipping a coin

Coin		Spinner		
		Red	Green	Blue
	Heads	H,R	H,G	H,B
	Tails	T,R	T,G	T,B

Creating a sample space diagram

1. Use information proved to decide whether to write a list or create a table to find all possible outcomes.
2. Systematically write the list or fill in the table by either listing outcomes or performing operations with values.
3. Use the information from the list or table to find any probabilities required.

Creating a table helps to organise the information you have and ensures that no outcomes are missed or repeated.

You might also be asked to do a calculation to fill in the sample space instead of just putting the outcomes straight in.

This sample space shows the difference between the outcomes when 2 dice are rolled.

	1	2	3	4	5	6
1	0	1	2	3	4	5
2	1	0	1	2	3	4
3	2	1	0	1	2	3
4	3	2	1	0	1	2
5	4	3	2	1	0	1
6	5	4	3	2	1	0

Finding a probability from a sample space

Two dice are thrown and the possible outcomes are shown in the sample space diagram below:

	1	2	3	4	5	6
1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
2	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
3	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
4	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
5	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
6	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

1) What is the probability that 2 numbers which are the same are rolled?

$$\frac{6}{36} = \frac{outcomes\ where\ numbers\ are\ the\ same}{total\ number\ of\ outcomes}$$

2) What is the probability that two even numbers are rolled?

$$\frac{9}{36} = \frac{outcomes\ where\ numbers\ are\ both\ even}{total\ number\ of\ outcomes}$$

Online clip

M718

Two-way Tables

Component Knowledge
- Construct two-way tables.
- Read and interpret two-way tables.
- Find probabilities using two-way tables.

Key Vocabulary

Two-way table	A table which shows two variables at the same time- we can read them vertically and horizontally.
Horizontal	Reading from left to right or right to left
Vertical	Reading the table top to bottom or bottom to top
Variable	A way of organising data according to a shared characteristic e.g eye colour, age

We use two-way tables to compare 2 variables

To construct a two-way table, we need two variables. One variable is featured as the top row within the two-way table (read horizontally), and the other variable features on the first column of the table (read vertically).

Example This two way table shows a data set about what students eat for lunch.

The top row shows boy or girl.

	Boys	Girls	Total
Cooked food	18	22	40
Packed lunch	17	33	50
Total	35	55	90

The first column shows the type of food chosen.

17 boys had a packed lunch

90 students were asked in total (40+50=90 and 35+55=90)

Example: 80 children went on a school trip.

They went to London or to York.

23 boys and 19 girls went to London.

14 boys went to York.

(a) Use this information to complete the two-way table.

Step 1- fill in all known values from the question.

Total = 80
Boys in London = 23
Girls in London = 19
Boys in York = 14

	London	York	Total
Boys	23	14	
Girls	19		
Total			80

Example: 80 children went on a school trip.

They went to London or to York.

23 boys and 19 girls went to London.

14 boys went to York.

(a) Use this information to complete the two-way table.

Step 2- calculate missing values using the known values. Remember both the horizontal and vertical totals must equal the overall total, in the case below, = 80.

	London	York	Total
Boys	23	14	37
Girls	19	24	43
Total	42	38	80

23 + 19 = 42
Boys total

80 – 37 = 43
Girls total

38 – 14 = 24
Girls in York

80 – 42 =38
York total

23 + 19 = 42
London total

Interpreting two-way tables

We can now use the fully completed two-way table to interpret the data.

	London	York	Total
Boys	23	14	37
Girls	19	24	43
Total	42	38	80

Questions could look like this:

a) How many students went to London?

We can read from the table vertically and see there **were 42 students who visited**

b) One of these 80 students is chosen at random.
What is the probability that this student visited London?

We can read from the table vertically and see there **were 42 students who visited London.**

So, the $P(a\ student\ visits\ London) = \frac{42}{80}$

c) A student is picked at random.
Given they are a girl, what is the probability they went to York?

We can read the table to find the **total girls = 43** and the **girls who visited York = 24**

So, the $P(given\ the\ student\ is\ a\ girl,\ they\ visit\ York) = \frac{24}{43}$

<u>**Online clip**</u>   M899

40

Venn Diagrams

Key Vocabulary

| Set	A collection of "things" (objects or numbers)
Union	The set made by combining the elements of two sets
Intersection	The intersection of two sets has only elements common to both sets
Probability	The change that something happens
Venn Diagram	A diagram that shows sets which elements belong to which set by drawing regions around them. It is used to represent data that has an overlap.

Example

Out of 50 people surveyed:

30 have a brother

25 have a sister

8 have both a brother and a sister

This is what the Venn Diagram for this information would look like

Remember – the people in the intersection are also included in the whole circle so we don't duplicate data.

From the Venn Diagram, we can see that the probability of someone from this group just having a brother is 22/50.

The probability of someone from this group having neither a brother or a sister is 3/50.

The probability of having a brother and a sister,

$$P(A \cap B) = \frac{8}{50}$$

Key Concepts

Venn diagrams show all possible relationships between different sets of data.
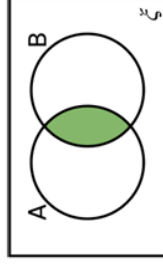
A ∩ B
The **intersect** of A and B. The set of elements in **both A and B.**
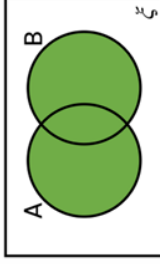
A ∪ B
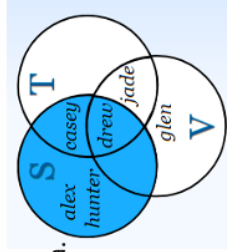The **union** of A and B. The set of elements in **A or B or both.**
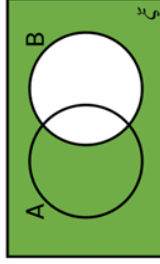
B'
The **complement** of B. The set of elements **not in B.**

Venn Diagrams with 3 sets

Diagrams can be drawn to show more than 2 sets of data. This is an example of a Venn Diagram containing 3 sets.

S = {Alex, Hunter, Casey and Drew}

T = {Jade, Casey and Drew}

V = {Drew, Jade and Glen}

Example: Given a set of numbers

$\varepsilon = \{1,2,3,4,5,6,7,8,9\}$
$A = \{\text{square numbers}\}$
$B = \{\text{even numbers}\}$

ε - denotes the universal set. This is the set containing all of the elements being considered.
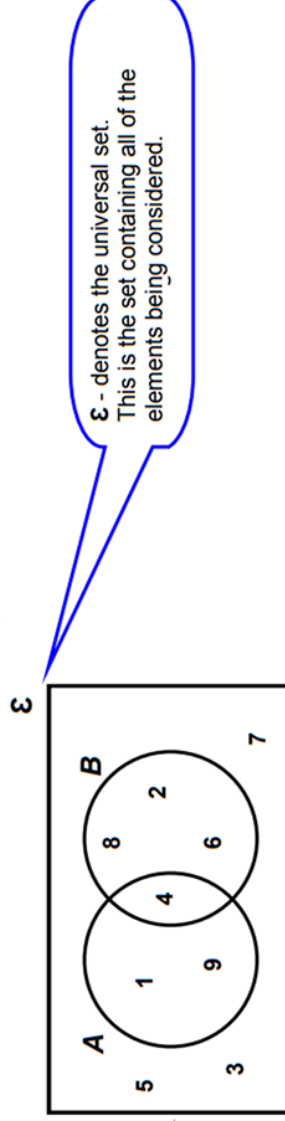
In set A 'the square numbers' are 1, 4 and 9.

In set B the 'even numbers' are 2, 4, 6, 8.

4 is in both groups so would go in the centre (the intersection)

Outside of the circles are any numbers remaining in ε

Online clips

M829, M419, M834

42

Averages

Key Vocabulary

Data set	Collection of values that share a common relationship. This could be answers to a set question or information for a set objective.
Average	Is a value (or values) that is used to represent a whole data set
Mode	The most frequent value in a data set. It is a type of average. Modal is another word used more mode.
Median	The middle value of a data set, when ordered. It is a type of average.
Mean	A measure of the size of the data when shared out equally. It is a type of average.
Range	A value to show spread out a data set is. It can be used to describe how representative of the whole data set the average used is. IT IS NOT AN AVERAGE.

Averages

We use averages to summarise a whole data set in a single value/few values. We do this so we can interpret large data sets and also compare data sets more easily.

Mode- the most frequent value/ few values in a data set. There can also be no mode in a set of data.

Ex 1, find the mode:

blue   red   blue   green   blue   blue

pink   green   blue   red   yellow   Blue is the mode.

Ex 2, find the mode:

9, 4, 3, 6, 9, 5, 2, 1, 8, 7

To make it easier, we can re-write these values in ascending(increasing) order.

1, 2, 3, 4, 5, 6, 7, 8, 9, 9.   We can now see clearly **9 is the mode.**

Ex 3, find the mode:

9, 4, 3, 6, 9, 5, 2, 1, 8, 7, 3

Re-written 1, 2, 3, 3, 4, 5, 6, 7, 8, 9, 9 We can see **3 and 9 are the modal values.**
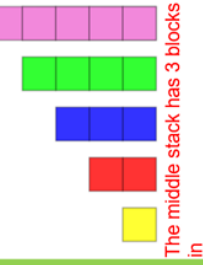
** We usually only have 1, 2 or 3 modal values**

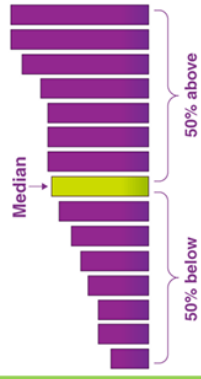Ex 4, find the mode:

4, 3, 6, 9, 5, 2, 1, 8, 7

Re-written 1, 2, 3, 4, 5, 6, 7, 8, 9 We can see there **are NO modal values.**

Median– the middle value in a data set, when in order. If there are 2 middle values, we find the midpoint between them.

Find the median of: 1, 3, 3, **6**, 7, 8, 9

Median = 6

Find the median of: 1, 2, 3, **4, 5**, 6, 8, 9

Median is the midpoint of 4 and 5 = 4.5

Median
50% above
50% below

Find the median of the following set of numbers.

40 −2 10 40 −31 3 −34 −13 −10 1 30 16 −16

−34 −31 −16 −13 −10 −2 1 3 10 16 30 40 40

How many blocks are in the middle stack?

The middle stack has 3 blocks in

How many blocks are in the middle stack?

There is no "middle stack". We have to calculate the middle of 2 and 4. The middle would be 3.

Mean– The mean is the size of each part when a quantity is shared equally. We can do this by adding all the values in the data set together and then dividing it equally between the number of values.

Example 1.
Find the mean of the following set of numbers.

19, 6, 17, 6

Solution.
To find the mean divide the sum of the numbers by the number of numbers.

$$\frac{\text{Sum of numbers}}{\text{Number of numbers}} = \frac{19 + 6 + 17 + 6}{4}$$

$$= \frac{48}{4}$$

$$= 12$$

There are 4 values in the data set so we are dividing by 4.

How many blocks would there be in each stack if they were shared out equally?

There would be three in each pile so the mean = 3

Range– the range shows how spread out the data is. It is useful to order the data when finding the range. The smaller the range, the more consistent the data.

E.g. Find the range of the following numbers

43 36 10 −8 −3 −6 −4 −22

−22 −8 −6 −4 −3 10 36 43

65

Range = 43 − −22 = 65

Comparatives
Mon appart est plus *grand* que ton appart. – My apartment is more *big* than your house.
Ma maison est plus *intéressant**e*** que ta maison. – My house is more interesting than your house.

Qu'est-ce qu'on peut faire dans ta ville?
- What can you do in your town?
 Dans ma ville, on peut…
- In my town, you can…
À Bolton, on peut…
- In Bolton, you can…
Ici, on peut…
- Here, you can…
Là-bas, on peut…
- There, you can…

visiter les musées - visit museums
visiter les jardins - visit the gardens/parks
visiter les monuments - visit monuments
aller au concert - go to a concert
manger au restaurant - eat at a restaurant
faire du roller ou du skate - to go rollerblading or skating
faire du vélo - to go on a bike ride/cycling
faire du bowling - to go bowling
jouer au babyfoot au café - play table football at the café
jouer au flipper au café - play pinball at the café
faire une promenade en barque - go on a boat trip

My house
C'est comment chez toi?
- What is your house like?
Dans ma maison, il y a (huit) pièces
- In my house, there are (eight) rooms
Chez moi, il y a… – At mine, there is
Voici…- Here is…
la chambre de mes parents…
- my parents' bedroom
la chambre de ma sœur…
- my sister's bedroom
ma chambre - my room
la cuisine - the kitchen
le Jardin - the garden
la salle à manger
- the dining room
la salle de bain - the bathroom
le salon - the living room
les toilettes - the toilet
le bureau - the desk / office
la fenêtre - the window
la porte – the door
le lit - the bed
la table – the table

Opinions of where we live
Tu aimes ta ville/ton village?
Do you like your town/village?
J'adore ça - I love it
Je déteste ça - I hate it
J'aime habiter à…
- I like to live in…
J'aime habiter ici – I like to live here
J'aime y habiter – I like living there
J'aime habiter là-bas – I like living there
Je suis très content(e) d'habiter ici
- I am very happy to live here
Je voudrais habiter à… I would like to live in…
Mon village / Ma ville est
- My village / towm is
Mon appartement / Ma maison est
- My flat / house is
Mon Jardin / Ma rue est
- My garden / street is
intéressant / intéressante - interesting
ennuyeux / ennuyeuse - boring
nul / nulle - rubbish
petit / petite - small
grand / grande – big
gros / grosse – big/fat
beau / belle - beautiful
vieux / vieille - old
nouveau / nouvelle - new
moderne - modern
confortable – comfortable
propre – clean
sale – dirty

Adjectives agree with the noun they describe!

45

Habiter – to live
J'habite – I live
Tu habites – You live (singular / informal)
Il habite – he lives
Elle habite – she lives
On habite – we live
Nous habitons – we live
Vous habitez – you live (plural / polite)
Ils habitent – they live (m /m+f)
Elles habitent – they live (f)

Key verbs in
the present tense

Pouvoir – to be able to
Je peux – I can
Tu peux – you can (singular / informal)
Il peut – he can
Elle peut – she can
On peut – we can
Nous pouvons – we can
Vous pouvez – you can (plural / polite)
Ils peuvent – they can (m /m+f)
Elles peuvent – they can (f)

Prepositions
dans - in
devant - in front of
derrière - behind
entre - in between
sous - under
sur – on
à côté de - next to
à droite de - on the right of
à gauche de - on the left of
en face de - opposite

Je pense que – I think that
Je crois que – I believe that
Je dirais que – I would say that
À mon avis – In my opinion
c'est – it is
ce n'est pas – it isn't
Je trouve ça – I find that

important(e) - important
génial(e) – great
agréable – pleasant
joli(e) – pretty
moche – ugly

Of + the
de + le = du (masc.)
de + la = de la (fem.)
de + les = des (plural)
de + l' = de l' (starts with a vowel sound)

Using a range of language improves the quality of our speaking and writing and allows us to access more challenging texts!

Time expressions
Quelquefois – Sometimes
Normalement – Normally
D'habitude – Usually
Tous les week-ends – Every weekend
En ce moment – At the moment
Souvent – Often
Tous les jours – Every day
Tous le soirs – Every evening
Tout le temps – All the time
De temps en temps – From time to time
Une fois par mois – Once a month
Deux fois par semaine – Twice a week
Ce matin / Cet après -midi / Ce soir
This morning / afternoon / evening
Ce week-end – This weekend
Aujourd'hui - Today

Intensifiers
très – very
assez – quite
vraiment – truly
réellement – really
un peu – a bit
peu – little
trop – too
extrêmement – extremely
tellement – so

Connectives
et – and
mais – but
aussi – also
parce que – because
car – because
puisque – since
cependant – however
malheureusement-
unfortunately

Free time – opinons

¿Qué te gusta hacer en tu tiempo libre?
– What do you like to do in your free time?

Me gusta	- I like
Me gusta mucho	- I really like
No me gusta	- I don't like
No me gusta nada	- I don't like at all
Me chifla	- I am nuts about
Me flipa	- I am cray about
Prefiero	- I prefer
Me encanta	- I love
Odio	- I hate
Antes me gustaba	- Before I used to like
En el pasado odiaba	- In the past I used to hate

This weekend

¿Qué vas a hacer este fin de semana?
– What are you going to do this weekend?

Este fin de semana	- this weekend
voy a	- I am going

chatear – to chat (online)
escuchar música – to listen to music
jugar (a los) videojuegos – to play videogames
mandar SMS / mensajes – to send text messages
ver la televisión – to watch television
leer – to read
escribir correos (electrónicos) – to letters (e-mails)
salir con mis amigos – to go out with my friends
bailar – to dance

Free time sentence openers

Todos los días – Everyday
A veces – Sometimes
De vez en cuando – From time to time
Nunca – Never
Los lunes – On Mondays/Every Monday

En primavera	- In spring
En verano	- In summer
En otoño	- In autumn
En invierno	- In winter

Cuando	- When
llueve	- it's raining
nieva	- it's snowing
hace frío	- it's cold
hace calor	- it's hot
hace sol	- it's sunny
hace buen tiempo	- it's good weather
hace mal tiempo	- it's bad weather

porque	- because
es	- it is
no es	- it is not
era	- it was
interesante	- interesting
guay	- cool
divertido	- funny.amusing
aburrido	- boring

Free time

¿Qué haces en tu tiempo libre?
– What do you do in your free time?
¿Qué haces normalmente?
– What do you do normally?
¿Qué haces en…?
– What do you do in…?

Key ideas
Sports and hobbies

bailo	- I dance
hablo con mis amigos	- I talk with my friends
monto en bici	- I ride my bike
canto canciones	- I sing songs
saco / subo / cuelgo fotos	- I take photos / upload / post photos
chateo en línea	- I chat online
toco la guitarra	- I play the guitar
juego (a los) videojuegos	- I play videogames
escucho música	- I listen to music
mando SMS / mensajes	- I send texts
hago atletismo	- I do athletics
hago equitación	- I do horse-riding
hago natación	- I do swimming
juego al baloncesto	- I play basketball
juego al fútbol	- I play football
juego al tenis	- I play tennis
juego al vóleibol	- I play volleyball

Year 8 Topic 3: Los pasatiempos – Free time

-Ar verbs

Hablo	**- I talk**
Hablas	**- You talk (singular / informal)**
Habla	**- He talks / She talks**
Hablamos	- We talk
Habláis	- You talk (plural / polite)
Hablan	- They talk

Key verbs in the present tense

Jugar – to play

Juego	**- I play**
Juegas	**- You play (singular / informal)**
Juega	**- He plays/ She plays**
Jugamos	- We play
Jugáis	- You play (plural / polite)
Juegan	- they play

Hacer – to do

Hago	**- I do**
Haces	**- You do (singular / informal)**
Hace	**- He does/ She does**
Hacemos	- We do
Hacéis	- You do (plural / polite)
Hacen	- they do

Using a range of language improves the quality of our speaking and writing and allows us to access more challenging texts!

Infinitives

In Spanish infinitives end in:
-Ar
-Er
-Ir

In English, a verb will have "to" in front of it when it is in it's infinitive form.

Structures followed by the infinitive

In Spanish, the second verb in a clause is usually in the infinitive form:

Me gusta *bailar*
I like *to dance*

Voy a *bailar*
I am going *to dance*

Days of the Week

lunes	- Monday
martes	- Tuesday
miércoles	- Wednesday
jueves	- Thursday
viernes	- Friday
sábado	- Saturday
domingo	- Sunday

Connectives

y	- and
o	- or
también	- also
pero	- but
porque	- because
ya que	- since
dado que	- given that
sin embargo	- however
no obstante	- however

Opinions

¡Me gusta! - I like it!
Me encanta! - I love it!

Possessive Adjectives

Mi	**– my singular**
Mis	**– my plural**
Tu	**– your singular**
Tus	**– your plural**

con	- with
mi familia	- my familia
mis amigos	- my friends (m)
mis amigas	- my friends (f)

Offbeat

Exploring Reggae and Syncopation

A. How did Reggae develop?

REGGAE is one of the traditional musical styles from **JAMAICA**. It developed from:

→ **REGGAE** ←

MENTO	**SKA**	**ROCK STEADY**
A form of Jamaican **FOLK MUSIC** like **CALYPSO** popular in the 1950's.	Fast dance music that emerged in the 1950's fusing American R&B with **MENTO** rhythms and featuring **ELECTRIC GUITARS, JAZZY HORN SECTIONS** and characteristic **OFFBEAT RHYTHMS.**	A more vocal style of dance music which used **RIFFS, SIMPLE HARMONIES, OFFBEAT RHYTHMS** and a strong **BASS LINE.**

Reggae was first heard in the UK in the 1950's when immigrants began to settle. During the 1960's, people began importing singles from Jamaica to sell in UK shops. Now, Reggae is known as the national music of Jamaica.

B. Where is Jamaica?

C. What are Reggae Songs About?

Reggae is closely associated with **RASTAFARIANISM** (a religious movement worshipping Haile Selassie as the Messiah and that black people are the chosen people and will eventually return to their African homeland). The **LYRICS** of Reggae songs are strongly influenced by Rastafarianism and are often political including themes such as **LOVE, BROTHERHOOD, PEACE, POVERTY, ANTI-RACISM, OPTIMISM** and **FREEDOM.**

D. Offbeat Rhythms & Syncopation

OFFBEAT RHYTHMS – Rhythms that emphasise or stress the **WEAK BEATS OF A BAR**. In music that is in 4/4 time, the first beat of the bar is the strongest, the third the next strongest and the second and fourth are weaker. Emphasising the second and fourth beats of the bar gives a "missing beat feel" to the rhythm and makes the music sound **OFFBEAT**, often emphasised by the **BASS DRUM** or a **RIM SHOT** (hitting the edge of a **SNARE DRUM**) in much Reggae music.
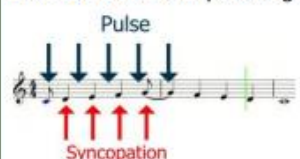
ONBEAT RHYTHM GRID

Pulse/Beat	1	2	3	4	1	2	3	4
"Onbeat" rhythms (strong beats)	♩	𝄾	♩	𝄾	♩	𝄾	♩	𝄾

OFFBEAT RHYTHM GRID

Pulse/Beat	1	2	3	4	1	2	3	4
"Offbeat" rhythms (weak beats)	𝄾	♩	𝄾	♩	𝄾	♩	𝄾	♩

SYNCOPATION – A way of changing a rhythm by making some notes a bit early, often so they cross over the main beat of the music giving the music a further **OFFBEAT** feel – another common feature of Reggae music.

E. Musical Features of Reggae

OFFBEAT RHYTHMS AND CHORDS (see D)
SYNCOPATED RHYTHMS AND MELODIES (see D)
SUNG LYRICS (see C)
LEAD SINGER often with **BACKING SINGERS** sometimes singing in **CALL AND RESPONSE** (see F3) accompanied by a Reggae band which often features: **BRASS INSTRUMENTS** and **SAXOPHONES, ELECTRIC GUITARS, BASS GUITAR, KEYBOARDS, DRUMS AND PERCUSSION INSTRUMENTS.**
VOCAL AND INSTRUMENTAL IMPROVISATIONS (see F2)
MELODIC RIFFS (see F5)
SLOW, RELAXED ('chilled!') **TEMPO**
4/4 METRE/TIME SIGNATURE
Most Reggae songs are structured in **VERSE AND CHORUS/POPULAR SONG FORM.**
SIMPLE HARMONIES (see F4)

THICK TEXTURAL LAYERS (see F9) "The Reggae Trifle" is an example of how many Reggae songs are 'layered'.

- LYRICS (MELODY)
- SYNCOPATED RHYTHMS
- RIFFS
- OFFBEAT CHORDS
- BASS LINE RIFFS

F. Reggae Key Words

1. **MELODY** – The main 'tune' of a piece of music, often sung by the **LEAD SINGER**.
2. **IMPROVISATION** – Previously unprepared performance.
3. **CALL AND RESPONSE** – Similar to a "Question and Answer" often the call sung by the lead singer and answered by the backing singers or instruments (the response) – musical dialogue.
4. **SIMPLE HARMONIES** – using a limited number of **CHORDS**, mainly **PRIMARY TRIADS** such as the **TONIC, DOMINANT** and **SUBDOMINANT** chords.

Key of C major

Chord I   Chord IV   Chord V

5. **RIFF** – A repeated musical pattern. Often the **BASS GUITAR** played repeated **MELODIC BASS RIFFS** in Reggae songs.
6. **BASS/BASS LINE** – The lowest pitched part of a piece of music often played by the **BASS GUITAR** in Reggae which plays an important role.
7. **CHORD** – 2 or more notes played together in **HARMONY**.
8. **RHYTHM** – A series of long and short sounds.
9. **TEXTURE** – Layers of sound combined to make music.

G. Who was Bob Marley?

BOB MARLEY was a famous reggae singer, **SONGWRITER**, and musician who first became famous in his band The Wailers, and later as a **SOLO ARTIST**. He was born Nesta Robert Marley on February 6th, 1945 in Nine Mile, Saint Ann, Jamaica. Although he grew up in poverty, he surrounded himself with music and met some of the future members of The Wailers. Bob Marley became involved in the Rastafarian movement and this influenced his music style greatly. Bob Marley and The Wailers worked with several famous musicians before becoming famous on their own. His career flourished and he became a cultural icon. He was the first international superstar to have been born in poverty in a Third-World country.

Javelin:
- Sideways stance
- Weight in back leg
- Arm holding javelin outstretched behind you
- Bend arm at elbow, to pull the javelin forwards
- Transfer weight onto front leg
- Aim to release the Javelin at a 45degree angle
- Advanced: carry out three step run up into the throw

Discus:
- Sideways stance
- Weight in the back leg
- Discuss held with very ends of finger tips
- Non discus hand outstretched at 45 degree angle
- Swing discus (palm towards the ground) up to reach non discus hand several times
- As discus reaches 45 degree angle straight back leg
- After 3-4 wind up swings release the discus forwards off your index finger

Shot Putt:
- Sideways stance
- Weight on back leg- toe, knee and chin all in alignment
- Shot held in fingers, not touching palm, and pushed into neck with elbow raised
- Transfer weight from back leg to front, twisting torso
- Push shot up and out at a 45 degree angle.

Long Jump:
- Measure run up-start with dominant foot on the board, run 7, 9 or 11 steps at a sprint
- Take off- plant foot on (but not over the board), eyes up, hips up and focus on driving up into the air
- Flight-stretch both legs forwards, and reach towards your feet with hands
- Landing- aim to land feet together, and body forwards or sideways (not backwards)

Sprint Start Technique

On Your Marks
- Rear knee should be level with front foot
- Form a 'V' behind the line with your hands
- Arms shoulder width apart, slightly ahead of hands

Get Set
- Raise hips higher than shoulders
- Lift legs at the knees
- Body weight on hands and feet equally

Go!
- Drive knee of rear leg forwards
- Extend front leg out
- Lean forwards
- Don't become upright too early

Distance running:
- Remember to breathe in through your nose and out through your mouth.
- Run in a relaxed fashion, with shoulders relaxed, taking nice long strides to cover more ground
- Build up distances to try and run continuously

Sprint- Knee Drive:
- When sprinting drive knees high
- Keep eyes close to the body and move them hip to lip
- Look forwards with chest up and shoulders relaxed.
- When finishing dip chest forwards slightly as you cross the line
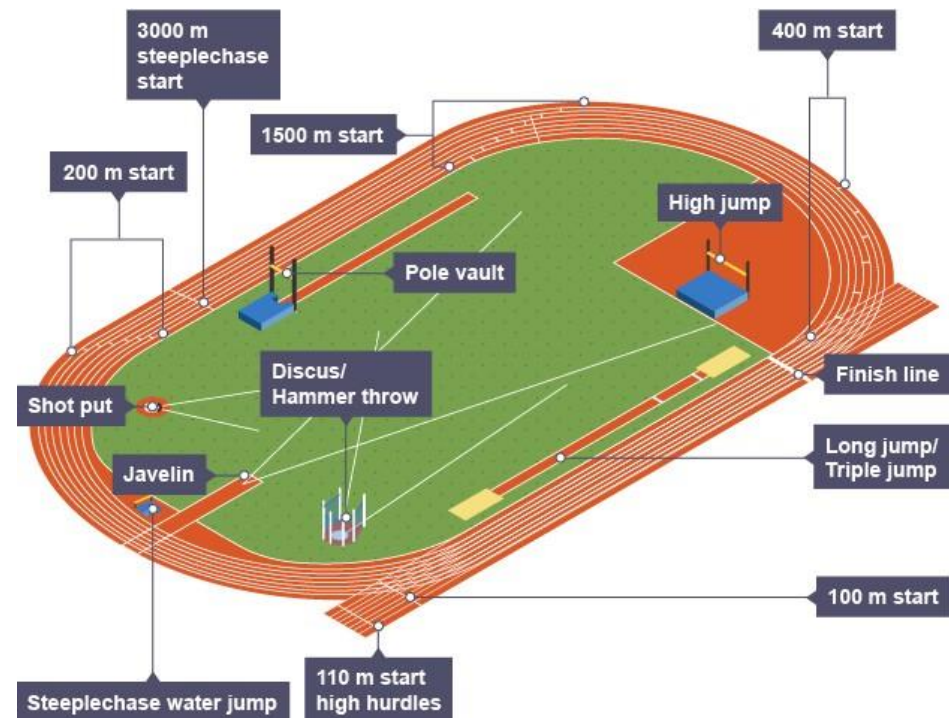
Track diagram labels: 3000 m steeplechase start, 1500 m start, 400 m start, 200 m start, High jump, Pole vault, Shot put, Discus/ Hammer throw, Finish line, Javelin, Long jump/ Triple jump, Steeplechase water jump, 110 m start high hurdles, 100 m start

Batting: Basic Straight Drive

- Stand with feet shoulder width apart and parallel to the batting crease.
- Slightly flex knees and keep weight evenly distributed.
- Rest the hand and top of bat gently against the inside thigh of your front leg with the bat resting on the floor at a 45° angle.
- Keep your head over the front foot and face the bowler.
- As the bowler approaches, the bat should remain close to the body but brought upward, bending both elbows, until the bat is parallel to the shoulders.
- As the ball is released, move the front foot behind the front knee and chest and keep the back leg straight and foot planted.
- The head should be level with the front knee, with the back foot raised up to the toes.
- On contact, the bat accelerates vertically through a straight path, keeping elbows bent and locked, until the face of the bat is pointing to the sky.

Bowling: Basic

Grip
- Place your thumb on the seam of the ball.
- Place your index finger on the seam, opposite your thumb.
- Hold the ball so that the seam is parallel to your index finger.
- Place your middle finger to the right of the seam, approximately a quarter of the way down the ball.
- Wrap your ring finger and pinky into a loose fit.

Release
- Carry the ball close to your chin. Coil your body and lean back.
- Drop your elbow and pant your leg bowling leg.
- Straighten your elbow and arm.
- Shift your weight to the lead leg.
- Thrust your bowling shoulder forward.
- Swing your arm like a windmill.
- Snap your wrist forward just before you release the ball.
- Release the ball.
- Follow through properly.
- Bend your elbow.
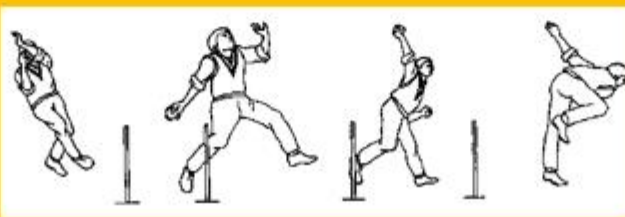
Fielding:

Catching
- **English (orthodox catch)-** Aim to catch at the base of your fingers. Bring the ball into your body
- **Australian (reverse cup)-** Attempt to catch at eye-level and keep your hand high. Watch the ball the whole time until it hits your hands.

Throwing
- **Overarm-** bring arm behind head, and transfer power from back foot to front foot. Used over longer distances
- **Underarm-** swing arm from back to front, release ball when hand pointing at target.

Long Barrier
- Long barrier: Kneel side on with foot next bent leg, pick ball up side on.

Short Barrier
- Short barrier- face on approach ball, foot behind and pick up ball.

Westhoughton High School– ACTIVITY: Cricket

Rules:

➜ Two teams, play an innings of batting and bowling.
➜When one team is batting, try and score as many runs as they can by hitting the ball around a set boundary.
➜The bowling team can get the batsmen out by hitting the stumps or catching the ball.
➜Once the batting team is all out, the teams swap over and they then become the bowling side.

Scoring System:

➜One run is scored each time the batsmen cross and reach the set of stumps at the other end of the pitch.
➜Four runs can be scored if the ball reaches the perimeter of the field
➜Six runs if it crosses the perimeter without bouncing.
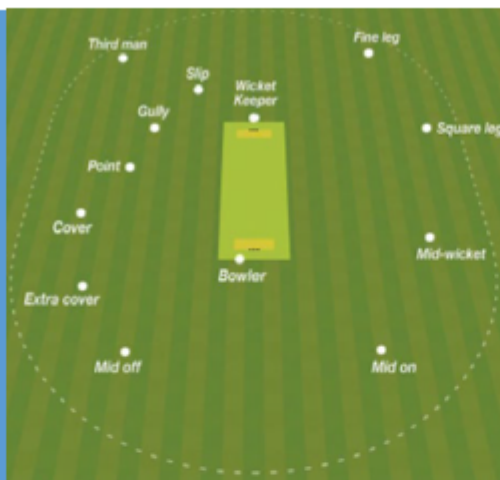
Key Words:

Wicket Keeper
Batsman
Bowler
Long Barrier
Hand eye co-ordination
Catch
Stumps
Seam
Leg before wicket
Over
Spin
Umpire

Positions:

➜ **Wicketkeeper:** The wicket keeper stands behind the batsman, and is responsible for catching the ball in their gloves if the batsman edges, misses or leaves the ball.
➜ **Point:** Fielding position square of the wicket on the off side of the batsman.
➜ **Mid-off:** Fielder should be positioned just a bit wider than straight on the off side of the field.
➜**Mid-on** is the same position as mid-off on the on side.
➜ **Cover:**Fielding position is just in front of square on the off side.
➜ **Square leg:** The fielder is located square of the wicket on the leg side of the field.
➜ **Mid-wicket** is a position in front of square on the leg side of the batsman

Tactics:

➜ **Fielding:** Place players in positions where the batsman may give a catch, to a fielder and to save runs or to block the path of the ball from the batsman's scoring strokes Backing up the ball from a fielders throw.
➜ **Bowling:** The location varies with the pace of the bowler, the state of the pitch, and the reach and technique of the batsman. The second is the direction. On this foundation a bowler may elaborate with variations of spin bowling
➜**Batting:** A forward stroke in which the batsman advances his front leg to the pitch of the ball and plays it in front of the wicket. This is the best way to score runs with control.

WESTHOGHTON HIGH SCHOOL -ORIENTEERING

Skills and Techniques:

➜ **Directions:** 4 key compass directions: North, South, East, West
More complex compass directions: North East, North West, South East and South West

➜ **Map Reading:** Recognise symbols on a map. Understand that maps and aerial view pictures are not the same. Recognise these features on aerial photographs

➜ **Human features:** Know that a human feature, is influenced by man (Road, cities, churches). Recognise these on a map

➜ **Physical Features:**
Know that a physical feature, is natural (Forest, rivers, beaches, hills) Recognise these on a map

➜ **Directional language:** To describe the physical and human features in a location or a route.

Diagrams and Symbols:

Map Symbols:

▨	Open Grass
▨	Rough Open
▨	Grass Garden
⬭	Undergrowth
▢	Sandpit
▨	Tarmac
▢	Buildin g
▨	All weather pitch
▨	Canopy
▨	Steep Bank
●	Lamp
⋈	Post Flag
●	Pole Tree
o—o	Goal Post
⚲	Netball Post
◢	Orienteering
—	Point Outer

Positions:

➜ The main aim of orienteering is to complete the set course by finding control markers in the correct order in the shortest time.

➜ Although it Is based on accurate map reading it is also a test of physical fitness.

➜ You must find all the controls you are told to visit and record them on your score sheet.

➜ You have to consider the terrain you are moving over ensuring your safety and the safety of any team members at all times, taking into account the varying fitness level of all your team members.

➜ In order to be given a finish time for finding controls the whole team has to finish together

Key Features:

➜ Orienteering control

➜ Orienteering Map

Key Words:
Location,
Speed
Cardiovascular Fitness
Setting a Map
Navigation
Adventurous
Diverse Direction
Key
Catchment features
Terrain
Map
Compass
Control point
Thumbing
Attack points

Key components:

➜ **Map**
A diagrammatic representation of an area showing physical features

➜ **Key**
Explains the meanings of symbols

➜ **Route**
A way from getting from a starting point to a destination

➜ **Location**
The place where something is

➜ **Orienteer**
To find your way across areas using a map.

➜ **Grid reference**
map reference indicating a location in terms of a series of vertical and horizontal grid lines

➜ **Latitude**
Imaginary lines north and south of the equator

➜ **Longitude**
Imaginary lines from East to West around the globe

WESTHOUGHTON HIGH SCHOOL KS3 PE KNOWLEDGE ORGANISER – ACTIVITY: BOLTON ROUNDERS (FLATBAT)

Fielding: Catching
- Eyes focused on the ball.
- Feet move to place body in line with ball.
- Hands move to meet the object.
- Hands and fingers relaxed and slightly cupped to catch the ball.
- Catches and controls the ball with hands only (well-timed closure)
- Elbows bend to absorb the force of the ball.

Fielding: Throwing
Underarm throw used in a short distance.
- Stands face on to direction of throw.
- Eyes focused on target area..
- Steps forward with opposite foot to throwing arm.
- Well timed release.
- Follows through with straight arm.

Overarm throw used in a long distance.

Bowling
- Grip the ball between three fingers
- Step into the bowling action
- Release the ball at weight height
- Variation in speed and height will enable you to outwit the opponent
- To add spin, twist your wrist as you release the ball

Batting
Batting: One hand on the bat, have the fat side facing the bowler and with a slight tilt. Bend your knee and transfer your weight from the front to the back

Barriers
Long barrier: On a bumpy outfield, or if the ball is travelling at speed

Short barrier: Used to pick the ball up at pace

Key Words:
Batting
Bowling
Deep Fielding
Obstruction Power
Accuracy Throwing
Catching Umpire
Stumping
No ball
Hit out
Running Out
Rounder
Barrier
Variation
Reaction time
Spatial awareness
Momentum

Tactics:
→ Batters run round the **inside of the posts**
→ fielders have a field in 'the slips' to the right of the batter
→ Adapt fielding positions according to strengths and weakness of the batters
→ Move your fielding position once you have established how each batter hits the ball is a sign of good fielding
→ Always focus on the batter that has just hit the ball as they are scoring.
→ Batters should think about how they hit ball according to the positioning of the fielders and also an understanding of how many points they need to win a point.

Rules:
→ Each team can have a minimum of 6 players on the pitch at any one time.11 players are on a team.
→ Bowler must bowl the ball in the bowlers pitch
→ Lawn tennis balls must be used
→ The ball must be bowled above the knee of the batter, below the top of their head. Batter can only hold the bat with one hand
→ The batters foot must be on the edge of the batters square and stay planted when hitting the ball.
→ The ball can be hit forwards or backwards
→ A batter will be out if, after making a scoring shot from a good ball, the ball is caught by a fielder without it touching the ground.
→ The batter, while running to a base, is out if she is touched by the fielder ball from one of the fielding side.
→ A batter is out if first base is stumped before she reaches it.

Positions:
→ **First base** this is the only base you can stump and player out.
→ **Baller** must bowl the ball in the bowlers pitch
→ **Fielders** spread out around the pitch
→ **Backstop** must stand on the line behind the batting square

PLAN FOR ROUNDERS

BACK TAPE — 0.3 Metres behind HOME (1 yard)

(1 yard x 2 feet) HOME   0.9 x 0.6 Metres INSIDE MEASUREMENTS

11 Metres   (12 yards)

(7 yards) 6.4 Metres

1st Base   4th Base

BOWLER'S PITCH   2.8 Metres (3 yards) by 0.6 Metres (2 feet)

11 Metres (12 yards)   (12 yards) 11 Metres

5.5 Metres   (6 yards)

2nd Base   11 Metres (12 yards)   3rd Base

Scoring System:
→ The batter will receive 1 point for every base they reach.
→ If the touch all four base without being caught out they receive **6** points.
→ If the batter is out they keep the points reward until that point. E.g. if the batter is touched by the all between 3rd and 4th base they would achieve **3** points and out.
→ If the bowler bowls a 'bad ball' the batting team receive 1 point.

Key Words:
Batting
Bowling
Deep Fielding
Obstruction Power
Accuracy Throwing
Catching Umpire
Stumping
No ball
Hit out
Running Out
Rounder
Barrier
Variation
Reaction time
Spatial awareness
Momentum
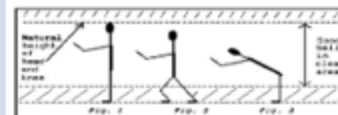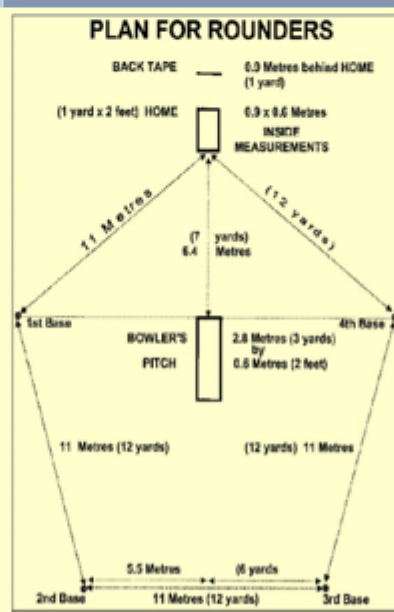
Skills and Techniques: Back Crawl	**Skills and Techniques: Front Crawl**	**Skills and Techniques: Breaststroke**	**Skills and Techniques: Butterfly**
→ **Body position** Horizontal Streamlined Head still Eyes looking upward Hips close to surface → **Leg Action** Continuous up and down motion Legs close together Relaxed ankles → **Arm Action** Thumbs leave the water first Little finger entry	→ **Body position** Flat and streamlined Eyes looking forwards and downwards → **Leg Action** Continuous and alternating Starts from the hip Ankles relaxed → **Arm Action** Thumb enter the water first Enter between the head line and shoulder line Elbow exits first → **Breathing** Head rolls to the side to breath Bilateral breathing	→ **Body position** As horizontal as possible Shoulders horizontal → **Leg Action** Starts in glide position Heels drawn towards the seat Feet turned out Kick backwards with a circular whipping action → **Arm Action** From glide position, hands turn outwards Pull downwards and outwards to inline with shoulders Arms meet in the centre of the body and drive out to glide position	→ **Body position** Horizontal, with a wave like movement from head to toe Shoulders kept level → **Leg Action** Legs close together Ankles relaxed toes pointed Action starts from the hips Kick up and down with a bend at the knee → **Arm Action** Thumb first entry Entry shoulder width apart Pull downwards, with bent elbows Hands leave the water little finger first Arms clear the water just above the surface → **Breathing** Lift head and push chin forwards Head lowered quickly but smoothly

Back Crawl

→ Start -Back

→ Turn –Tumble
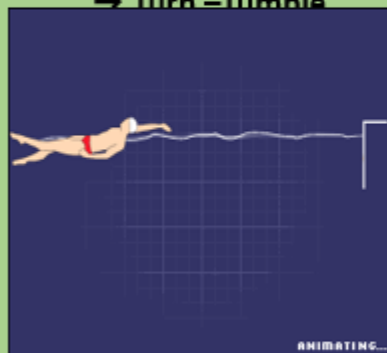
Front Crawl

→ Start -Racing Dive
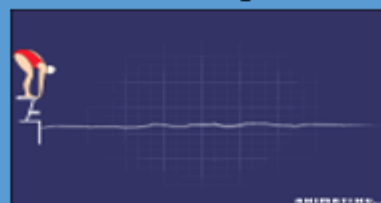
→ Turn-Tumble
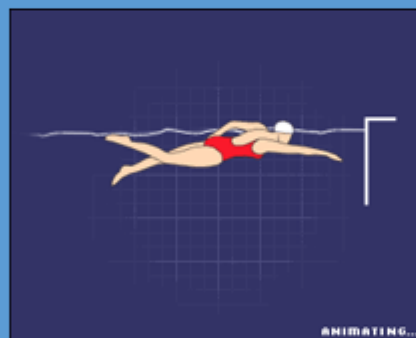
Breaststroke and Butterfly

Turns-Two handed
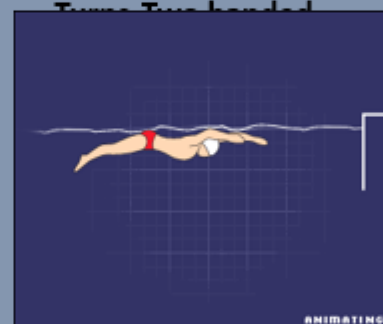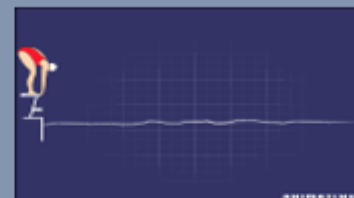
Tumble turns

Stage one

- Swim toward the turning wall.
- Ensure you breathe on the last stroke before turning.
- On the last stroke, bring both arms down and next to the hips.
- Keeping the body straight, hold feet approximately 20 cm under the water surface.

Stage two

- Bring the arms up and swing over the head whilst brushing the upper arms against the ears.
- Tuck chin into chest and begin rotating body forward.
- On complete rotation, push against the wall with the balls of the feet and kick a minimum of four times to generate pace.
- Complete one full stroke before returning to breathing pattern.

Racing start-Front crawl, breaststroke and butterfly

1: Chin and chest
2: Arm above head, squeeze ears
3: Tip forward
4: Hips high
5: Stretch out

Key words

Splits, Pacing, Negative spilt, positive split, Even split, False start, Technical official,

Scoring

Success in swimming is judged on times and places.

Start of the race

Races are started with electronic pistols and are only sounded again if an athlete makes a false start.

Finish the race

In all races swimmers must strike a pressure pad at the end of their lane to stop the clock.

Officials

Starter

Clerk of course - these people line up competitors in correct order, ready for starting.

Timekeepers, Inspectors of turns ,Judges of stroke ,Finish judges

Disqualifications are also a result of technical rules violations. These include:

- **freestyle** - stepping or walking on the bottom of the pool, pulling on the lane rope, not touching the wall on a turn, or not completing the distance
- **backstroke** - not remaining on the back throughout the swim except when turning, pulling or kicking into the wall once turning past the vertical onto the breast, turning onto the breast before touching the wall with the hand at the finish of the race
- **breaststroke** - not swimming on the breast, an illegal kick such as flutter, dolphin, or scissors, non-simultaneous movements of the arms, taking two arm strokes or two leg kicks while the head is underwater, or touching with only one hand at the turns or finish instead of two
- **butterfly** - non-simultaneous movements of the arms or legs, pushing the arms forward under the water instead of over the water surface, using a breaststroke-style kick, or touching with only one hand at the turns or at the finish instead of two

**Year 8
Term 3: Health
Knowledge Organiser**

USER GROUPS in Sport/Fitness

- Young children
- Teenagers
- People with disabilities
- Parents (singles or couples)
- People who work
- Unemployed/economically disadvantaged people

- Gender
- People from different ethnic groups
- Retired people/people over 60
- Families with children
- Carers
- People with family commitments

Barriers faced by user groups

☐ Employment and unemployment
☐ Family commitments
☐ Lack of disposable income
☐ Lack of transport
☐ Lack of positive sporting role models
☐ Lack of positive family role models or family support
☐ Lack of appropriate activity provision
☐ Lack of awareness of appropriate activity provision
☐ The lack of equal coverage in media in terms of gender and ethnicity by the media

NUTRITION:
A balanced diet consists of six essential nutrients:
1.**Carbohydrates** – The body's main energy source, found in foods like grains, fruits, and vegetables.
2.**Proteins** – Essential for growth, repair, and muscle maintenance, sourced from meat, beans, and dairy.
3.**Fats** – Provide long-term energy and support cell function, found in nuts, oils, and fatty fish.
4.**Vitamins** – Support immune function, metabolism, and overall health, present in fruits, vegetables, and dairy.
5.**Minerals** – Aid in bone strength, nerve function, and hydration, including calcium, iron, and potassium from leafy greens, dairy, and meat.
6.**Water** – Essential for hydration, digestion, and temperature regulation, making up a large portion of the body.

ROLE OF MACRO NUTRIENTS IN SPORT
Carbohydrates – The primary energy source for athletes, carbohydrates fuel endurance and high-intensity activities by providing glucose, which is stored as glycogen in muscles and the liver. They help maintain stamina, delay fatigue, and support quick recovery.
Proteins – Essential for muscle repair, recovery, and growth, proteins aid in rebuilding muscle fibers damaged during exercise. They also support immune function and contribute to enzyme and hormone production necessary for athletic performance.
Fats – A secondary energy source, fats provide sustained energy for long-duration, low- to moderate-intensity activities. They help preserve glycogen stores and support overall endurance, particularly in endurance sports like marathon running or cycling.

NUTRITION:
- Carbohydrates are essential in sporting activity because they provide a quick and efficient source of energy, fueling muscles and sustaining performance during exercise.
- Hydration is crucial as it regulates body temperature, maintains electrolyte balance, and prevents dehydration, which can impair endurance, strength, and overall athletic performance

6 Major Nutrients You Need

TRAINING PRINCIPLES:

Training thresholds refer to intensity levels that determine the effectiveness of an exercise program. There are two key thresholds:

1. **Aerobic Threshold** (50-70% of maximum heart rate) – The point where the body starts using oxygen efficiently for sustained activity, improving endurance.
2. **Anaerobic Threshold** (80-90% of maximum heart rate) – The intensity at which lactic acid accumulates faster than it can be cleared, enhancing high-intensity performance and muscle strength.

KARVONEN PRINCIPLE

The **Karvonen Principle** calculates target heart rate for optimal training intensity using the **Heart Rate Reserve (HRR)** method:

- **HRR** = Maximum Heart Rate (220 - age) - Resting Heart Rate
- **Intensity %** = Desired effort level (e.g., 60-85% for aerobic training)
- **Resting Heart Rate (RHR)** = Measured at rest, indicating baseline fitness

This formula personalizes training zones, ensuring workouts are effective and aligned with fitness goals.

FITT Principle

The **FITT Principle** is a guideline for structuring effective workout programs. It stands for:

1. **Frequency** – How often you exercise (e.g., 3-5 times per week).
2. **Intensity** – How hard you work out (e.g., moderate or high intensity, based on heart rate or weight resistance).
3. **Time** – Duration of the exercise session (e.g., 30-60 minutes).
4. **Type** – The kind of exercise performed (e.g., cardio, strength training, flexibility).
:

**Year 8
Term 3: Health
Knowledge Organiser**

Age-predicted maximum heart rate (APMHR)

$$HRmax = 220 - age$$

Karvonen formula

$$\% HRR = ([HRmax - RHR] \times \% \text{ intensity}) + RHR$$

ANAEROBIC VS AEROBIC EXERCISE

- Aerobic exercise, like jogging or cycling, uses oxygen to produce energy, primarily generating carbon dioxide and water as byproducts.
- Anaerobic exercise, like sprinting or weightlifting, occurs without oxygen, producing lactic acid as a byproduct.

Energy Sources for Aerobic and Anaerobic Exercises
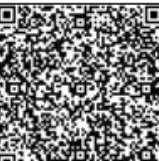
Aerobic Exercise (With Oxygen)

1. Uses **carbohydrates** (glucose/glycogen) and **fats** as the primary energy sources.
2. During prolonged, low-to-moderate intensity activities (e.g., jogging, cycling), the body primarily relies on **fat oxidation** for sustained energy.
3. **Oxygen is required** to break down these fuels efficiently, producing **ATP, water, and carbon dioxide** as byproducts.

Anaerobic Exercise (Without Oxygen)

1. Uses **stored ATP**, **creatine phosphate (CP)**, and **glycogen** as quick energy sources.
2. During short bursts of high-intensity activities (e.g., sprinting, weightlifting), the **ATP-PC system** and **anaerobic glycolysis** supply energy.
3. **Lactic acid** is produced as a byproduct when glycogen is broken down without oxygen, leading to muscle fatigue.

| Life Lessons – Summer Term KS3 - Living in the Wider World	
Topics	**For Further Information and Advice**
Money Matters	• **Stepchange:** Free debt advice charity 0800 138 1111 • **The Kings Trust:** use the QR code to access budgeting and saving resources.
Responsible internet use	**Are you worried about online sexual abuse or the way someone has been communicating with you online?** • Contact **CEOP** (Child Exploitation and Online Protection). Use the QR code of search for CEOP online.

The protected characteristics	**The 9 protected characteristics in the Equality Act 2020 are:**
	    Age Disability Gender Reassignment Race Religion or Belief Sex
	    Sexual Orientation Pregnancy & Maternity Marriage & Civil Partnership
	For more information about the **Equality Act**, scan the QR code.
	Citizens Advice: Provides information and advice on issues such as discrimination because of race and/or religion 0800 144 8848.

Your Rights	**The Universal Declaration of Human Rights** is a document that protects the rights of every individual, everywhere. It was created by the United Nations in 1948, in response to the "barbarous acts" of the Second World War. Its adoption recognized human rights to be the foundation for freedom, justice and peace. **Scan the QR code to see all 30 of your Human Rights.**
Young Carers	**You're a young carer if you're under 18 and help to look after a relative with a disability, illness, mental health condition, or drug or alcohol problem.** • For advice and support with care issues, call the **Carers Direct** helpline on 0300 123 1053. • Search for **Carers Trust** and find the Young Carers Page.
Criminal Behaviour (County Lines and Kinfe Crime)	You can report an incident of knife crime by calling **101** or talking to us via **LiveChat** at www.gmp.police.uk. Always dial **999** in an emergency. Help is also available via **CrimeStoppers** on 0800 555 111, or using the QR code for the **Fearless** anonymous reporting. What is county lines? County lines is a criminal activity where drug dealers in big cities use other people (typically young and/or vulnerable) to carry, store, and sell their drugs in smaller towns and rural areas. Use the QR code to find out more.

KS3 Energetics

Exothermic Reactions

In an exothermic reaction, thermal energy is **given out** to the surroundings, therefore there is a **temperature increase.**

Combustion, oxidation and neutralisation are all examples of exothermic reactions
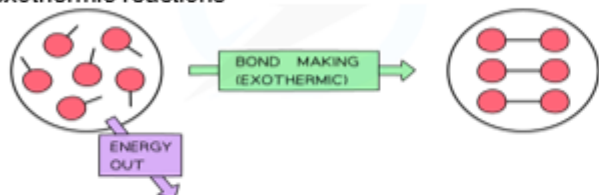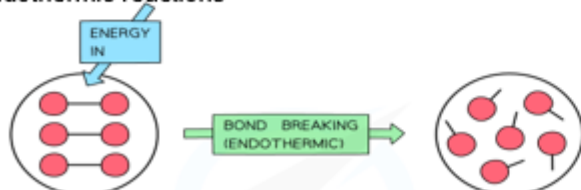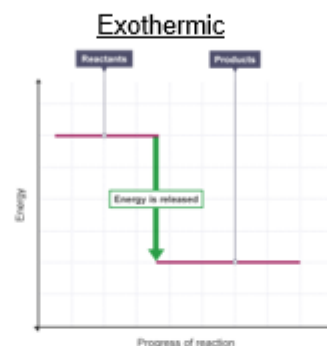

The reaction is exothermic because the energy **needed** to break the bonds is <u>less</u> than the energy **released** in making new bonds.

Endothermic Reactions

In an endothermic reaction, thermal energy is **taken in** from the surroundings, therefore there is a **temperature decrease.**

Thermal decomposition and photosynthesis are examples of endothermic reactions

If a reaction is endothermic then the energy **needed** to break the bonds is <u>more</u> than the energy **released** in making new bonds.

Energy Level Diagrams

Energy level diagrams are used to model energy changes during reactions. They show the relative energy levels of the products and reactants

Exothermic

The energy level decreases in an exothermic reaction. This is because energy is given out to the surroundings. The downward arrow shows that energy is given out

Endothermic

The energy level increases in an endothermic reaction. This is because energy is taken in from the surroundings.
An upwards arrow shows that energy is taken in

Catalysts

A catalyst is a substance that
- Speeds up the rate of a chemical reaction
- Does not alter the products of a reaction
- Is unchanged chemically and in mass at the end of a reaction.
- Catalyst provide an alternative pathway that has a lower activation energy than the uncatalysed reaction.
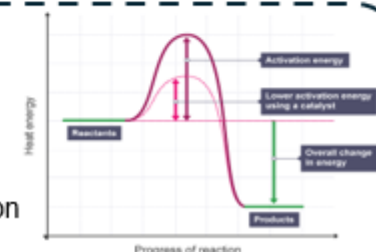

Keywords

- Endothermic
- Exothermic
- Oxidation
- Combustion
- Thermal decomposition
- Reactivity series
- Catalyst
- Activation Energy
- Displacement

KS3 Electromagnetism: Magnetism

Bar magnets

Magnets attract and repel other objects by a non-contact force.

A bar magnet is a permanent magnet. This means it always causes a force to be exerted on other magnetic materials. There are four magnetic materials.

Magnetic

Iron   Nickel

Cobalt   Steel
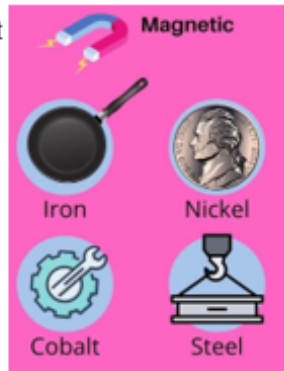
Earth's Magnetic Field

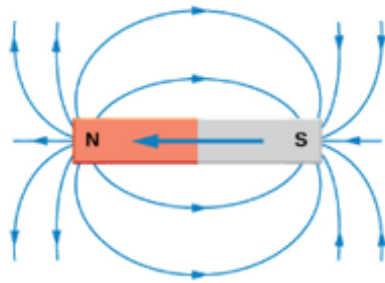Due to the Earth's core spinning, a magnetic field exists around the Earth. This is part of the Magnetosphere.

The Earth's Geographic North Pole is the magnetic South pole. It protects Earth from harmful cosmic radiation from the Sun.

The Earth's magnetic field is also used by animals to help with migration.

Humans use a compass that aligns with the magnetic South pole for navigation. Compasses always point North when free to move.

Keywords

o Permanent magnet
o Pole
o Attraction
o Repulsion
o Magnetic Field
o Magnetosphere
o Compass
o Molten
o Electromagnet
o Solenoid
o Motor effect
o Direct Current

o A uniform field exists in attraction
o A space between magnets appears in repulsion

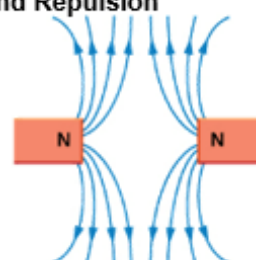## Attraction and Repulsion

Magnetic field lines of a bar magnet

(a)
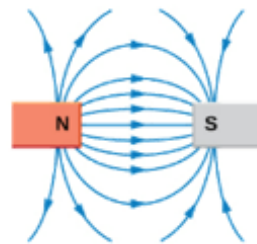
Magnetic field lines between unlike poles

(b)

Magnetic field lines between like poles

(c)

A magnetic field is a region around a magnet where other magnetic objects experience a force.

A magnetic field lines:

• never cross
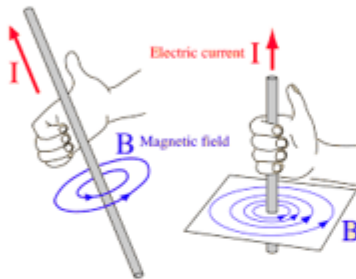• run North to South (arrowheads)
• are continuous

KS3 Electromagnetism: Magnetism

Magnetic field and Current

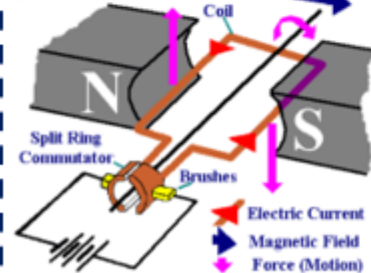Current is a flow of negative charges.

As these charges move, they induce a magnetic field that is at right angles to the flow of charges.

The right hand rule is used to show the magnetic field.

Electric current I
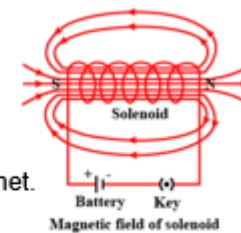
B Magnetic field

B

The Motor Effect

Simple Electric Motor

Coil

N

S

Split Ring Commutator

Brushes

→ Electric Current
→ Magnetic Field
↕ Force (Motion)

A simple Direct Current motor using the idea of a current breaking a magnetic field to forces a conductor (wire) to move. A motor has a split ring commutator to allow the current to change direction, allowing the coil to spin around.
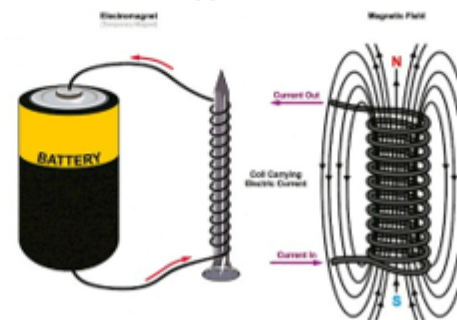
Solenoids

If current is sent through a coil of wire the magnetic field becomes stronger and the field lines appear like they do in a bar magnet.

S Solenoid N

+ –
Battery Key
Magnetic field of solenoid

Electromagnets

If a magnetic core is added to the solenoid and a current is switched on, the magnetic field becomes even stronger (field lines move closer).

Electromagnets are temporary magnets that can be switched off when the current is stopped.

BATTERY

Electromagnet

Magnetic Field

Current Out

Coil Carrying Electric Current

Current In

N

S

Keywords

- Permanent magnet
- Pole
- Attraction
- Repulsion
- Magnetic Field
- Magnetosphere
- Compass
- Molten
- Electromagnet
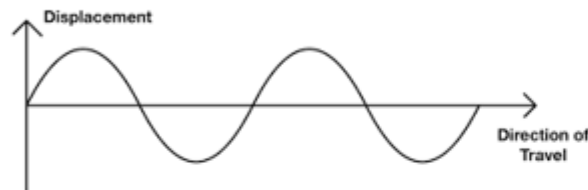- Solenoid
- Motor effect
- Direct Current

To make electromagnet stronger:
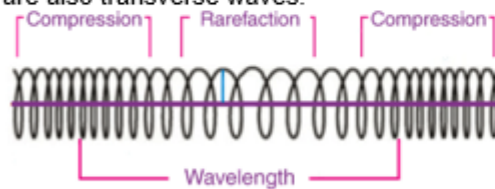- Increase number of coils
- Increase the current flow

KS3 Waves

Waves

This is a transverse wave.

Displacement

Direction of Travel

A transverse wave carries energy at right angles to the motion of the particles.

Light is a transverse wave. Water surface waves are also transverse waves.

Compression — Rarefaction — Compression

Wavelength

Longitudinal wave energy move side to side, in parallel, to the particles.

Sound is an example of a longitudinal wave.

Communication

Some waves can be used in communication.

Radio waves, microwaves, infrared radiation and visible light are all waves that can be used to communicate.

Water waves

Water waves are ripples that travel through water. Water waves are transverse waves.

Water waves have amplitude (height of wave), wavelength (length of wave), frequency (how many waves every second), peaks (highest part of wave) and troughs (lowest part of wave).

Direction of wave

Amplitude   Peak

Rest position   Wavelength   Trough
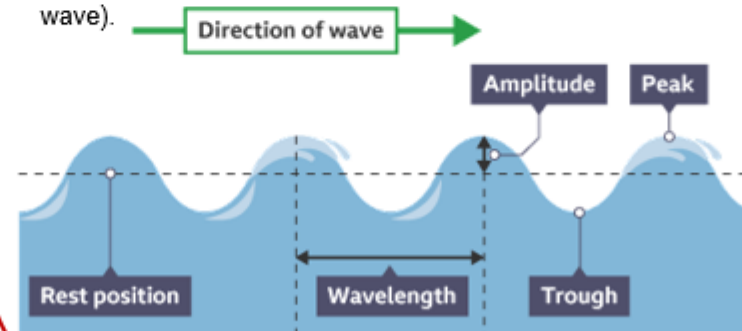
Keywords

- Transverse
- Longitudinal
- Frequency
- Wavelength
- Amplitude
- Energy
- Sound
- Light
- Ultrasound
- Colour
- Superposition
- Reflection
- Refraction
- Transmission
- Absorption

KS3 Waves

Sound waves

Sound is produced by vibrations and travels at 300m/s. Sound can only travel in a medium (where particles exist), this means sound cannot be heard in space (a vacuum).

Sound can be reflected to produce an echo; it can be transmitted (radio) and can be absorbed.

Sound energy travels through the air where it collides with the ear drum which then vibrates. This sends electrical signals to the brain.

Humans can only hear between 20Hz and 20 000Hz. Ultrasound (higher than 20K Hz) is used medicine and other industries (cleaning, sonar, etc.).
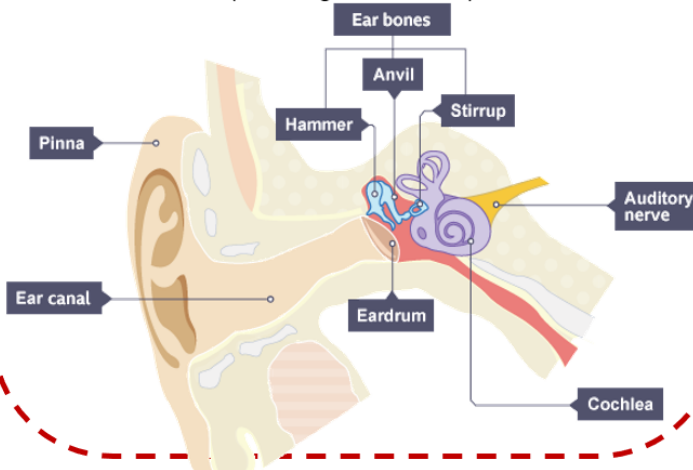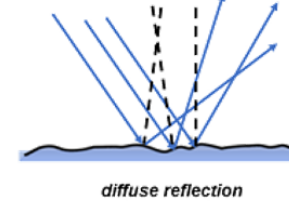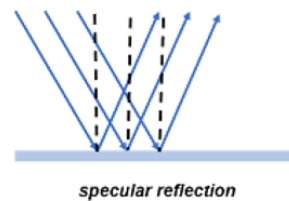

Light

Light is an electromagnetic wave. It is a transverse wave. Light travels in all mediums and in vacuums. Is does not need particles to move. Light travels at 300 000 000m/s in a vacuum. Light can be reflected

specular reflection   *diffuse reflection*

The surface will determine which type of reflection will be seen. Specular reflection produces sharp images. Diffuse reflection produces scattering.

Using lens to see images
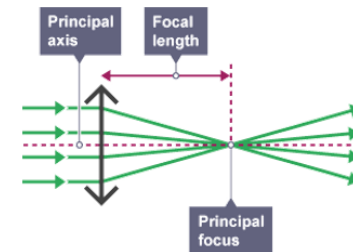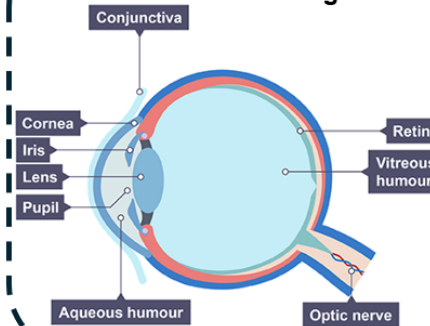
Colour

White light is made up of different colours based on their individual frequencies. Red has the highest frequency.

Some coloured objects absorb some colours and reflect/transmit others.

Seeing

We see objects because light reflects off the objects into our eyes.

white light coming in

green light

green surface