

HOME-LEARNING

YEAR 8



HALF TERM 1



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

NELSON MANDELA



Core Values

Our school community is built on three important values which underpin all we do. We believe that great learning comes from:

Politeness

- We treat every person and thing as we want to be treated
- We are respectful, polite and courteous at all times
- We help others at all times

Hard-work

- We never give up
- We remain positive so that we have the strength to persevere with even the hardest work
- We do what it takes, for as long as it takes

Honesty

- We are true to ourselves and others and we do not make excuses
- We look to ourselves to see what needs to be done.

What is learning?

A big part of learning is about getting knowledge to go into your long-term memory and then using this knowledge. Our brains will only remember knowledge in the long term if we think really hard about it. Just reading, or highlighting does not make our brains work hard enough. We must **practise** remembering things – this will feel difficult at the time but worth it in the end.

What is a knowledge organiser?

A knowledge organiser is a document that contains key facts and information. A knowledge organiser will not include every possible fact on a topic; it will include facts needed to understand the main points. Knowledge organisers make knowledge clear. So, even if a learner misses a lesson, they have a constant point of reference.

Why are knowledge organisers good for learning?

Research shows that our brains remember things more efficiently when we know the ‘bigger picture’ and can see the way that ‘nuggets’ of knowledge link. Making links helps information move into our long-term memory. A knowledge organiser shows linked facts on a single topic.

Knowledge organisers can be used for retrieval practice (practising remembering things). Regular retrieval of knowledge helps us remember more effectively with our long-term memory. Developing our long-term memory is a vital first step. Without knowledge we have nothing to work with, nothing to think about! Retaining knowledge over time is essential.

To help us understand learning better, Gateacre students and staff have created a series of videos that explain how memory works and what we can do to make it stronger. Follow the QR code or the [Learning to Learn](#) link to view them.



How can you best use your knowledge organiser?

There are many ways you can use a knowledge organiser. The most important thing to say, however, is ‘use it’. Owning one does not make you remember facts... **you must practise** if you are to improve at anything! There will be mistakes – this is how you learn. Ultimately, the best way to remember things is to try and remember facts that you can’t quite remember instantly... practice, practice and practice.

Here are some ways you could try to improve your **long-term memory** – they are all based on making you **think**, getting you to **test your memory**. That way your memory will get stronger:

Hide and seek

Read through a small section of your knowledge organiser (three or four key words), cover the facts and try to write out as much as you can remember. Check your answers and correct them if needed. Then choose your next words or check ones you have already done again.

Quiz

Test your memory by asking someone to quiz you on facts from your knowledge organiser. Write down your answers and see how many you get right. Correct any facts you get wrong.

Teach it!

Teach and explain to someone your key facts – you could even test them!

Back to front

Write down a fact from memory and then compose a question that would lead to that answer.

Sketch it

Draw pictures /diagrams to represent each of the facts or dates (time lines, flow diagrams, or labelled pictures are great ways of remembering parts of a system or orders of events).

Repackage it (from memory)

Create a mind map that brings different facts together under one title. Check that your key words are spelt correctly... or, take a key word and create a sentence that uses it.

Take pride in how you present your work. Each page should be clearly labelled with an underlined date. There should be at least one page of work.

Always check your answers and correct anything you got wrong.... You are allowed to get things wrong... That is how you learn! Getting yourself to think is the key!

Do not just copy a knowledge organiser out – that would not help learning and would only waste your time! Make sure you are having to think!

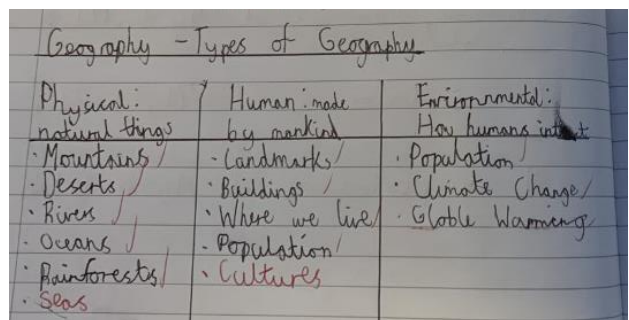
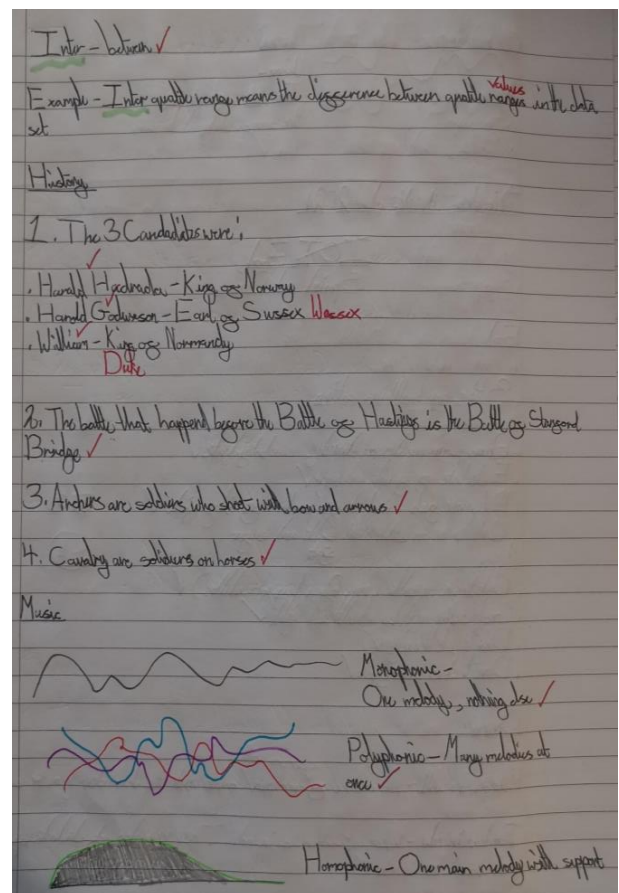
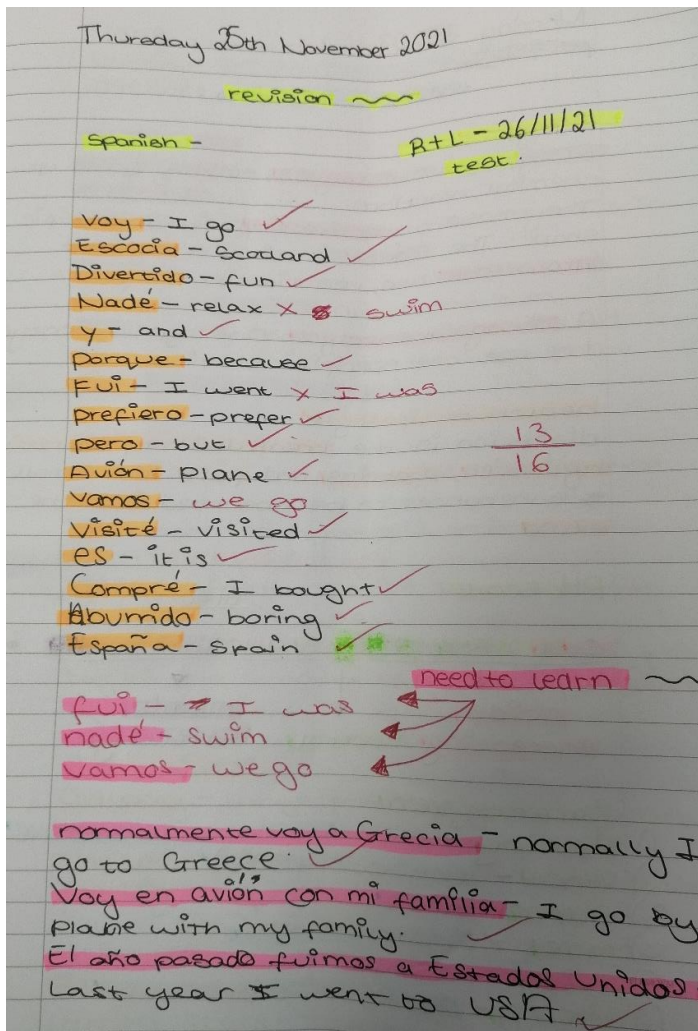


What does effective home-learning look like?

Here are some essential points to remember and some examples to see.

- Long term memories are created when you have to **think**. Simply copying does not help you remember. Testing yourself will make you **think** and remember
- The process of reflection and self-assessment is important if you are to fix mistakes. Do not worry about getting things wrong as long as you check, fix it and try again

All these learners have **read, thought, tested themselves** and then **checked** their work. They will start to develop long term memory which they can then use in the future.



MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Maths [Hegarty Maths On-Line and Prefixes & Suffixes]	ICT/ Food	English [Supported by Educake Tasks]	Art/Dt	
History	Drama	Geography	Science [Knowledge Organisers]	
Music	Spanish	RS	Active Lifestyles	
← Science: Tassomai On-Line (complete one daily goal each day) →				

Where subjects share a slot it is for you to decide which one you know less about - which one should you revise? You decide which one to do.

Science: Remember, you should do a **Tassomai daily goal each day** to help your science learning.

Literacy: Do take time to engage with the **Listening Project**. Developing our vocabulary is immensely important if we are to develop as learners. The **listening project** is an opportunity to listen to interesting ideas, facts and make our vocabulary better. You can do this short activity at any point within the week.

Remember, you can always do more. Challenge yourself to be the best you can be!

How to use the 'Listen' Project

Start Here

Being read to is a vital part of learning - hearing words that we are unfamiliar with, ideas that we don't understand yet and thoughts we haven't had a chance to think.

Even simple stories create links from one idea to the next. The fairy tales we heard when we were babies give us the first step to understanding the adventure stories we read in school.

Take time out and listen...

Step 1 - Click the link and listen.

You can follow the text as you are read to or just listen.



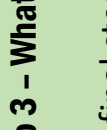
Step 2 - Check the text.

Have a look at the texts. There are three pieces of writing.

The first piece may appear to be very simple, maybe even too young for you. These stories are some of the first we hear and often start our journey to understanding more complicated ideas.

The second text may be something you recognise or have read yourself. Is there a link to the first story?

The third is the most complex and may even leave you with a lot of questions.



Step 3 - What's the connection?

The final step is to think about what links these texts and stories together?

Where have you thought about these ideas before?

Do you think about any of these ideas in school?

You can go back and listen to the texts being read as many times as you like.



SCAN ME

Gladiators...Ready!

Gladiators were professional fighters in ancient Rome. Their fierce battles—sometimes to the death—thrilled stadium crowds.

Gladiators were usually slaves and criminals. They trained at special schools. They used many kinds of weapons. Some fought with swords, while others used knives or tridents (three-pointed spears). Some had to battle wild animals.

The shows were held in huge arenas called amphitheatres. A fight usually went on until one gladiator was wounded. The crowd then decided whether the loser had fought bravely enough to be allowed to live.

The winner received palm branches and sometimes also money. A champion might be allowed to retire. Sometimes he gained his freedom.

The first known gladiator show in Rome took place in 264 BCE. Some later shows went on for weeks and used thousands of gladiators. Shows were held throughout the Roman Empire.

Gladiator shows gradually became unpopular. The Christian emperor Constantine I outlawed them in 325 CE. But they may have continued for at least 100 years after that.

Wizard Chess

They were standing on the edge of a huge chessboard, behind the black chessmen, which were taller than they were and carved from what looked like black stone. Facing them, way across the chamber, were the white pieces. Harry, Ron and Hermione shivered slightly—the towering white chessmen had no faces.

‘Now what do we do?’ Harry whispered.

It’s obvious, isn’t it?’ said Ron. ‘We’ve got to play our way across the room.’

Behind the white pieces they could see another door.

‘How?’ said Hermione nervously.

‘I think,’ said Ron ‘We’re going to have to be chessmen.’

He walked up to a black knight and put his hand out to touch the knight’s horse. At once, the stone sprang to life. The horse pawed the ground and the knight turned his helmeted head to look down at Ron.

‘Do we - er - have to join you to get across?’

The black knight nodded. Ron turned to the other two.

This wants thinking about....’ He said. ‘I suppose we’ve got to take the place of three of the black pieces...’

Harry and Hermione stayed quieter, watching Ron think. Finally he said, ‘Now don’t be offended or anything, but neither of you are that good at chess...’

Fighting for your life!

Sixty seconds. That’s how long we’re required to stand on our metal circles before the sound of a gong releases us. Step off before the minute is up, and land mines blow your legs off. Sixty seconds to take in the ring of tributes all equidistant from the Cornucopia, a giant golden horn shaped like a cone with a curved tail, the mouth of which is at least twenty feet high, spilling over with the things that will give us life here in the arena. Food, containers of water, weapons, medicine, garments, fire starters. Strewn around the Cornucopia are other supplies, their value decreasing the farther they are from the horn. For instance, only a few steps from my feet lies a three-foot square of plastic. Certainly it could be of some use in a downpour. But there in the mouth, I can see a tent pack that would protect from almost any sort of weather. If I had the guts to go in and fight for it against the other twenty-three tributes. Which I have been instructed not to do.

Scan the code
or follow the
link to listen



[The 'Listen' Project #1](#)

SCAN ME

Gladiators...Ready!

Gladiators, men and women who fight for others entertainment, appear in many cultures, times and places throughout history. You may have seen the film 'Gladiator' which tries to show an accurate portrayal of ancient Roman life. You may have seen 'Thor: Ragnarok' which shows a form of **Gladiatorial** battle in space!



We often use the term **Gladiator** to refer to someone fighting a battle against the odds or demonstrating great courage.

Wizard Chess



Chess is a board game for two players. It is played in a square board, made of 64 smaller squares, with eight squares on each side. Each player starts with sixteen pieces: eight pawns, two knights, two bishops, two rooks, one queen and one king. The goal of the game is for each player to try and checkmate the king of the opponent. Checkmate is a threat ('check') to the opposing king which no move can stop. It ends the game.

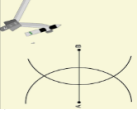
Fighting for your life!

The Hunger Games is a **Dystopian** novel that imagines a cruel and dangerous future. **Dystopian** stories imagine worlds were things have not turned out well and the future does not bring everyone happiness.

The word **Dystopia** comes from the name of a novel that imagines a perfect city called **Utopia**. Can you see how the word has been changed to suggest an opposite meaning to the original?



Prefixes and Suffixes in Maths

bi- bisect
"cut in two equal parts"


centi- centimetre
"1 metre split into 100 equal parts"


circ- circumference
"the distance around a shape"
about/around

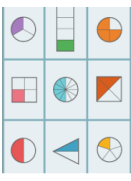
co- co-ordinate
"distance of a point both horizontally and vertically from the x and y-axis"
joint/jointly

deca- decagon
"A polygon (2d shape) with ten angles"
ten

div- divide
"Separate into parts"
separate

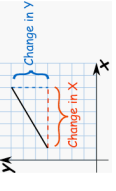
dodeca- dodecagon
"A polygon (2d shape) with twelve sides"
twelve

equi- equilateral
"A triangle with equal sides and angles"
equal

fract- fraction
"break into parts"

break

funct- function
"A relation or expression involving one or more variables"
work/operate


-gon Polygon
"A shape with many angles"
A figure having (a specified number of) angles.


grad- gradient
"The steepness of a line"

step/steep

-hedron decahedron
"A 3d object with 10 faces"
face

hemi/semi- hemi-sphere/
semi-circle
"half of a sphere/circle"

half

hexa- hexagon
"A polygon (2d shape) with 6 sides"

six

hepta- Heptagon
"A polygon (2d shape) with 7 angles"

seven

in- Inequality
Greater than $>$
Greater than or equal to \geq
Less than $<$
Less than or equal to \leq
Not equal to \neq
"Not equal to"
not/without

inter- Inter-quartile range
"The difference between the quartile values in the data set."
between

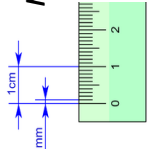
iso- Isosceles
"A triangle with exactly two equal sides and angles"
equal/identical

kilo- kilometre
"One thousand metres"
thousand

Prefixes and Suffixes in Maths

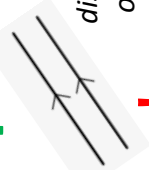
lat Equilateral
"The sides are equal"

-metry trigonometry
"The measuring of relationships of sides and angles in triangles"

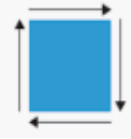
milli- millimetre
"One thousandth of a metre"


nona- nonagon
"A polygon (2d shape) with 9 angles"

octa- octagon
"A polygon (2d shape) with 8 angles"

side
para- parallel
"Lines/planes being an equal distance from each other to any given point"


process of measuring
penta- pentagon
"A polygon (2d shape) with 5 angles"

peri-

around

perimeter
"The measure around a shape"

poly- polygon
"A 2d shape with many angles"


eight
pos/posit- position
"a particular way in which someone or something is placed or arranged"

five
prim- primary data
"data that is collected by a researcher from first-hand sources"

quad- Derived from Latin: Quadrus
quadrilateral
"Any polygon (2d shape) with 4 sides"

quart-
quartile
"divides the number of data points into four"
 $\frac{1}{4}$

many
quint- quintile
"divides the number of data points into five"
 $\frac{1}{5}$


place/put
tangere tangent
"A straight line that touches a curve at a single point"

Latin:touch

first
-tion fraction
"The process/result of breaking up into parts"

square
trans- transform the shape
"Move a shape in some way across the Cartesian plane"

tri- triangle
"A polygon (2d shape) with 3 sides and angles"

change
var- variable
"The value of the unknown can change."
 $3x + 4y$

turn
vert- vertex
"A point of turn (angle) on a 2d or 3d shape)"


across/beyond



Topic: How did the Tudors help shape the UK? 1485 - 1603

Everyday Life in the Period

Tudor Lords – The wealthy in Tudor society lived increasingly rich lives:

- Fashion was important, with men wearing decorated doublets (jackets). Women would wear kirtles (overshirts) over wooden frames and high collars.
- Food included mostly meat, with few vegetables, with beer or wine the most popular drinks.
- Tudor Lords lived in huge mansions in the countryside (e.g. Hampton Court).
- Pastimes included jousting, hunting, dancing and tennis.



Life for the Poor – Life for poor people in this era was very harsh. For many manual jobs, such as farming, the day would begin at approximately 5am. Work would continue throughout most of the day, only breaking for mealtimes, which was normally some form of simple vegetable stew. As there was no benefits system, many who grew too old or weak were forced to beg, steal, or die. Punishments for crime were brutal – death by hanging was given to anyone who stole over one shilling, beggars were whipped through the streets, and poisoners were boiled alive! The Poor Laws made life even harder for poor people.

Major Events and Key Information

Battle of Bosworth – 22nd August 1485

The Battle of Bosworth was the last significant (important) battle in the 'War of the Roses', a civil war between the houses of Lancaster and York. The battle was won by the Lancastrians, and Henry Tudor became the first King of the Tudor period (Henry VII).



The Counter-Reformation – 16th Century


Henry's eldest daughter Mary had been raised a Catholic. When she became Queen in 1553, her greatest wish was to undo the Reformation and make England Catholic again. She believed this could only happen if she crushed Protestant opposition. She executed almost 300 Protestants during her reign for refusing to convert (change) to Catholicism, earning her the nickname 'Bloody' Queen Mary.

Spanish Armada – 1558

There was the constant threat of invasion throughout the reign of Elizabeth I. After years of rivalry between England and Spain, King Philip II of Spain launched the Armada, a huge fleet of 130 warships. He wanted to take the English throne from Elizabeth. However, the English who were led by Francis Drake, had faster ships and the Spanish ships were forced to scatter and try to sail home. Many later sank in a storm. This victory helped Elizabeth's reputation and made her very popular.


The Reformation – 16th Century

Religious and political changes that happened in Europe, which challenged the authority of the Pope and the Catholic church. Henry VIII fell out with the Pope after he refused to allow Henry to divorce his first wife, Catherine of Aragon. By 1534 Henry had declared himself to be the Head of the Church of England (Protestant).

Key People	
Person	Description
<p>Henry VIII 1485-1509</p> 	<p>Henry VII started the Tudor era when he defeated Richard III in the Battle of Bosworth Field in 1485. He was known as a serious man. He faced several challenges to his throne, but married Elizabeth of York, to end the War of the Roses. When he died, England was a rich nation and his son's succession to the throne (becoming King next) was not challenged.</p>
<p>Henry VIII 1509-1547</p> 	<p>Henry was the second son of Henry VII and became king after his brother (Arthur) died. A keen sportsman, Henry was very athletic in his youth. He married his brother's widow, Catherine of Aragon, but divorced her when she didn't produce a male heir (a son to be king after Henry VIII died). To get his divorce Henry VIII had to break away from the Pope and the Catholic Church and start a Protestant Church, the Church of England. He went on to marry another five times, but only had one male heir – Edward VI.</p>
<p>Edward VI 1547-1553</p> <p>Lady Jane Grey 1553</p> 	<p>Edward VI came to the throne at only 9 years of age. Therefore, the country was run by his protectors (advisors), firstly the Duke of Somerset (his mother's brother) and then the Duke of Northumberland. Edward died aged 15 in 1553. Lady Jane Grey was chosen as Queen by the Duke, but the public did not approve. She lasted 9 days, before being removed and executed.</p>
<p>Mary I 1553-1558</p> 	<p>Mary I was the daughter of Henry VIII and Catherine of Aragon and was a committed Catholic. She promised to return England to Rome and make the country Catholic again. She had over 280 Protestants burnt at the stake. Mary's popularity decreased because of this.</p>
<p>Elizabeth I 1558-1603</p> 	<p>Elizabeth I became Queen after her sister Mary died without an heir (son to become king). The daughter of Henry VIII and Anne Boleyn, she reversed Mary's move to make England Catholic again and kept Protestantism. She had a long and successful reign, including the defeat of the Spanish Armada in 1588. However, she did not marry or have children, meaning the Tudor line ended when she died.</p>

Timeline

1485 – Battle of Bosworth	1491 – Henry VIII born	1534 – 'Act of Supremacy'	1553 – Mary takes the throne	1558 – Elizabeth becomes Queen	1587 – Mary, Queen of Scots executed	1590 – first Shakespeare plays performed	1603 – Elizabeth I dies – end of Tudor line
---------------------------	------------------------	---------------------------	------------------------------	--------------------------------	--------------------------------------	--	---

Key Terms	Tasks
<p>Armada: The Spanish word for 'navy' – a huge fleet of ships.</p> <p>Catholic: Christians who believe the Pope is the head of the Church.</p> <p>Compromise: To meet someone half way during negotiations.</p> <p>Disolutions: Breaking up of the monasteries by Henry VIII.</p> <p>Divorce: The legal ending of a marriage.</p> <p>Excommunicate: A punishment that means a person is no longer seen as part of the church.</p> <p>Heir: The next in line to the throne.</p> <p>Monastery: A place where Catholic monks live, worshipping God and helping the poor.</p> <p>Pope: The head of the Roman Catholic Church.</p> <p>Propaganda: Information to persuade and try to make others think or behave in a certain way.</p> <p>Protestants: A branch of Christianity that separated from the Roman Catholic church during the Reformation.</p> <p>Recusants: Those who refused to attend church services during Elizabeth's reign and had to pay fines.</p> <p>Reformation: When the power and authority of the Pope was challenged and the Church of England set up.</p> <p>Renaissance: A time of great change with people becoming interested in art, learning and discovery of new things.</p>	<p>Task 1</p> <p>Using the 'Everyday Life in the Period' section, write a paragraph explaining whether you think life for the poor was fair in the Tudor period.</p> <p>Task 2</p> <p>Read the section on 'Major Events and Key Information' section. Write a summary of which event you think had the most significant impact (was the most important) for the Tudor period. Be sure to use examples from the information to support (back up) your judgement.</p> <p>Task 3</p> <p>From the 'Key People' section above, create a 10-question multiple choice quiz to test yourself or someone else. Make sure to make a note of the answers.</p> <p>Task 4</p> <p>Choose one of the 5 monarchs (king or queen) in the 'Key People' section above. Explain which monarch you think changed England the most in the Tudor period (this could be change for the better or change for the worse). You can use the information on this knowledge organiser or research one of the monarch's further using the Internet if you prefer.</p> <p>Task 5</p> <p>Read through the BBC Bitesize page on <i>The Reformation and its impact</i> using the link below or by scanning the QR code. Complete the multiple choice quiz to test your knowledge!</p> <p>https://www.bbc.co.uk/bitesize/topics/zwcsqpi/articles/zekcr2p</p> 
Big questions	
<p>Why did Henry VIII make England Protestant?</p> <p>What was the secret of Queen Elizabeth's success?</p>	
Notes	

THE HISTORY OF MUSIC

<p style="text-align: center;">ROMANTIC [1800...ish - 1900...ish]</p>	<p style="text-align: center;">The music sounds... Dramatic Emotional</p>	<p style="text-align: center;"><u>Composers</u> Chopin Liszt Schumann Brahms</p>	<p style="text-align: center;"><u>Instruments</u> Large Orchestra More Brass Percussion Saxophone invented</p>	<p style="text-align: center;"><u>Form</u> Opera Symphony Lieder (songs) Concerto Sonata</p>	<p style="text-align: center;"><u>Texture</u> Various: Homophonic Polyphonic Monophonic</p>
<p style="text-align: center;">CLASSICAL [1750 - 1800...ish]</p>	<p style="text-align: center;">The music sounds... Polite Elegant</p>	<p style="text-align: center;"><u>Composers</u> Haydn Mozart Beethoven</p>	<p style="text-align: center;"><u>Instruments</u> 'Medium'-sized orchestra Piano (new) Clarinet (new) Timpani</p>	<p style="text-align: center;"><u>Form</u> Opera Symphony Concerto Sonata String Quartet</p>	<p style="text-align: center;"><u>Texture</u> Mainly Homophonic</p>
<p style="text-align: center;">BAROQUE [1600...ish - 1750...ish]</p>	<p style="text-align: center;">The music sounds... Decorative Busy</p>	<p style="text-align: center;"><u>Composers</u> J. S. Bach Handel Vivaldi</p>	<p style="text-align: center;"><u>Instruments</u> Small orchestra Harpsichord Strings Often no conductor</p>	<p style="text-align: center;"><u>Forms</u> Opera Sonata Concerto</p>	<p style="text-align: center;"><u>Texture</u> Mainly Polyphonic</p>

Task 1: Learn the information in the *Baroque* period box. Test yourself to check your memory!

Task 2: Learn the information in the *Classical* period box. Test yourself to check your memory!

Task 3: Learn the information in the *Romantic* period box. Test yourself to check your memory!

Task 4: Create a mind map for each of the 3 musical periods **from memory – no peeking!** Include the following information: **dates – sounds like – composers**. **Self-assess** - fill any gaps **in red pen**.

Task 5: Create a mind map for each of the 3 musical periods **from memory – no peeking!** Include the following information: **instruments – forms – texture**. **Self-assess** - fill any gaps **in red pen**.

Task 6: Design a 'Musical Periods' timeline as a poster that shows what the main fashions of Baroque, Classical and Romantic music were.

****PLEASE LISTEN TO MUSIC BY COMPOSERS FROM THE BAROQUE, CLASSICAL AND ROMANTIC PERIOD ON YOUTUBE. CAN YOU HEAR THE DIFFERENCE BETWEEN THESE MUSICAL FASHIONS?**

Year 8 - Food And Nutrition

What is fat?

Fat is one of the five nutrients and is an essential part of your diet. However, many people eat too much fat, which is not good for their health.

Fats may also be called oils or lipids. Fats such as butter are solid at room temperature. Oils are liquid at room temperature.



Butter



Oil

What happens if we eat too much fat?

Eating foods high in fat can raise **cholesterol** levels on the blood. Cholesterol is a fatty substance needed for the body to function properly.

Eating too much fat can also lead to obesity, an increased risk of **diabetes** and heart disease. Most people agree that unsaturated vegetable fats are better for our health.

Saturated animal fats have been linked to increased cases of heart disease.

Why is fat important

- It keeps the body warm
 - It provides energy
 - It provides **fat-soluble vitamins**
 - It protects and protects our organs by covering them with fat
- Fats may be either:
- Animal fats - butter, lard, suet, cream, hard cheese. These are typically **saturated**
 - Vegetable fats - sunflower oil, olive oil, rapeseed oil, nuts. These fats are typically **unsaturated**.

Key Words

Fat-soluble vitamins - these are vitamins A, D, E and K.

Saturated Fats - usually from animal sources; can be harmful to health

Unsaturated Fats - usually from plant sources; can be good for health.

Cholesterol - a fatty substance which is needed for the normal functioning of the body.

Type 2 diabetes - a build up of fatty deposits in the coronary arteries.

Weekly Tasks

Week 1 - Make a leaflet for suitable for children, showing the main functions of fat.

Week 2 - Describe the key differences between fats and oils.

Week 3 - List the four functions of fat and consider what would happen without fat in our diet.

Week 4 - Make a list of at least 5 different foods that are sources of animal fat.

Week 5 - Make a list of at least 5 different foods that are sources of vegetable fat.

Week 6 - Make a list of fatty foods that you eat as part of your diet - labelling whether they are saturated or unsaturated fats.



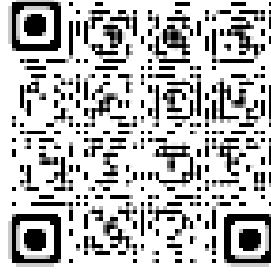
Computing Department Knowledge `Organiser: Year 8 Computing Systems

What is the Antikythera Mechanism?



<https://youtu.be/EZy4a5uTYH0>

Introduction to Computer Devices and Logic Gates



www.bbc.co.uk/bitesize/guides/zxb72hv/revision/1

Computing Systems

The invention of the computer has had a huge impact on our day-to-day lives, and they are now present everywhere – at home, at work and in education.

It is easy to recognise that personal computers, laptops and mobile devices are computers, but computers are also hidden in many more devices. Computers are found in many of the devices we use on a daily basis. Because they are relied on so heavily, knowing what they are and how to use them is valuable.

Input devices

An **input** device is any piece of computer hardware **used to provide data** to a **computer system**.

Output devices

An **output** device is any piece of computer hardware **used to communicate the results** of data that has been processed.

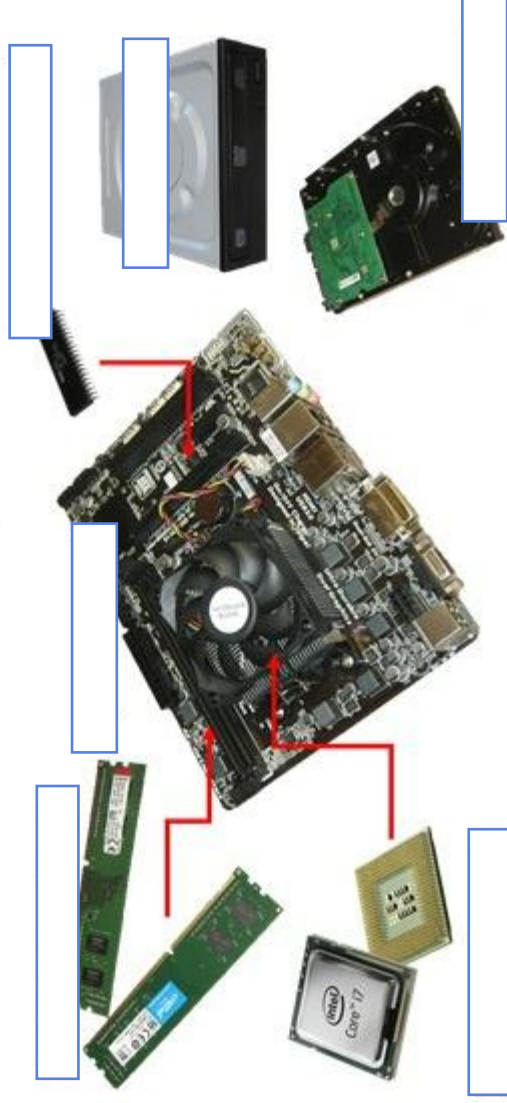
Identify whether each device is an input or output device: The first one has been done for you:

Device	Input Device	Output Device
Keyboard	✓	
Monitor		
Speakers		
Mouse		
Printer		
Headphones		
Webcam		



Computing Department Knowledge `Organiser: Year 8 Computing Systems

Internal Components



Label the Components

RAM (Random Access Memory)

ROM (Read Only Memory)

CD/DVD Drive

Hard Disk Drive

CPU (Central Processing Unit)

Motherboard

Operating Systems (OS)

Software that supports a computer's basic functions, such as: managing memory, managing the CPU and controlling devices.

- Windows
- Mac OS X
- Linux
- iOS
- Android

Application Software

Programs that allow the user to complete a specific task

- Word processing software e.g. Word
- Graphic design software
- Games

System Utility Software

Used to manage the computer and keep it running

- Antivirus
- Encryption
- System security



Computing Department Knowledge `Organiser: Year 8 Computing Systems

Computing System Key Words:
Binary: A number system that contains two symbols, 0 and 1. Also known as base 2.
Boolean: A data type in computing which only has two possible values, true or false.
Component: Working parts of a computer system.
Hardware: The physical parts of a computer system, eg a graphics card, hard disk drive or CD drive.
Input: Data which is inserted into a system for processing and/or storage.
Logic Gate: Circuit components which take several inputs, compare the inputs with each other, and provide a single output based on logical functions such as AND, OR and NOT.
Output: Data which is sent out of a system.
Software: Programs that run on a computer and complete a specific task.
Truth Table: Used to assess possible results of a Boolean algebra statement.



THE 4 P'S

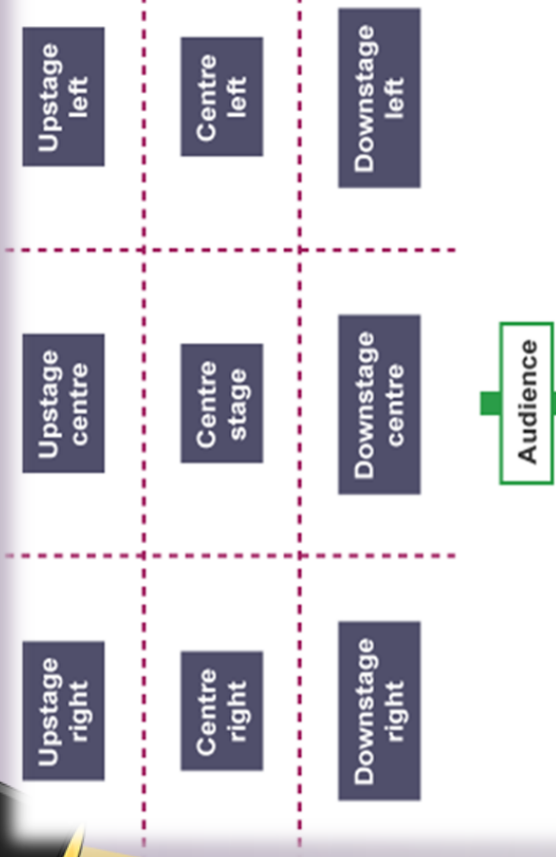
- PACE
- PITCH
- PAUSE
- PROJECTION

Spooky stories

New Skill/Technique ■ **Retrieval**

Knowledge/ skill	Definition
Stimuli	The starting point, idea or inspiration for your devised drama . It is what you base your drama around.
Hot seating	A character is questioned by the group about his or her background, behaviour and motivation.
Still Image or Freeze frame	This is where the action freezes as if someone has taken a picture midway through a performance. Conveys meaning and highlights the current scene.
Body as Prop	A genre (type) of drama that tells a story using over exaggerated movement, and physicality. Body as Prop Using your body to create props and objects on stage.
Teacher in role	The teacher plays a role. They may ask questions of the students, perhaps putting them into role as well.
Transition	This is the process in which something changes from one state to another
Movement	Where we move to on and around the stage avoiding the blocking another actor.
Storywhoosh/ Action narration	An interactive storytelling technique which enables a story to be brought alive by the storyteller and participants.
Characterisation	Developing and portraying a personality through voice and movement.
Promenade theatre	In promenade theatre there is no formal stage, both the audience and the actors are placed in the same space.
Narration	A commentary delivered to accompany a performance.
Soundscape	A collection of sounds created either by the actors themselves or by

Stage Positioning



BBC Bitesize 'KS3 Drama' Quiz:

RECALL:

What are the 3 main performance skills used for effective physical theatre?

What is a Genre? What Genre are we focussing on this term?

What two skills could you use to create a room in a haunted house?

DO NOT put your feet up on the chair in front of you

Turn OFF your phone

DO NOT talk/shout whilst watching a performance/show

THEATRE ETIQUETTE



DO NOT get out of your seat unless you have asked a member of staff

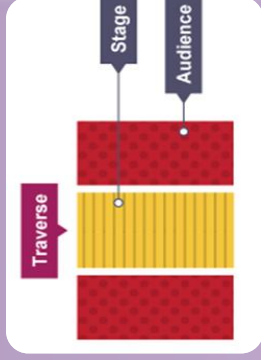
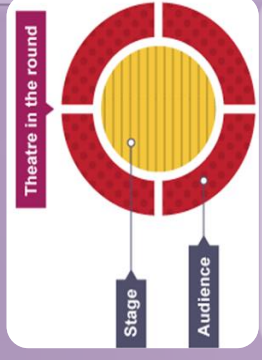
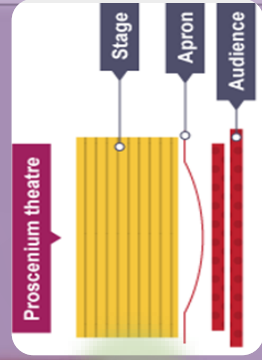
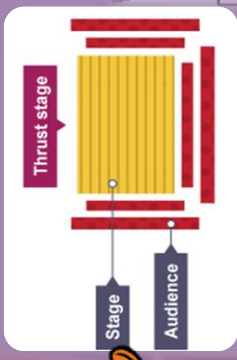
DO NOT leave any rubbish behind

BUT DO ENJOY YOURSELVES!

Tasks

Week 1	Create a colourful mind map using the information in the key skills table
Week 2	Sketch out the stage types
Week 3	Create a poster design for the Darkwood Manor competition
Week 4	Design a costume for 'Mrs Brown' who you will meet in lesson!
Week 5	Create a mind map of the key skills you have learnt in lesson this week
Week 6	Create a key drama skills quiz for your family and have a quiz night!

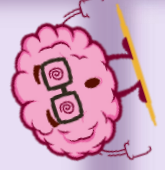
Stage Types



Key performance terminology for this term:

Vocal Skills... (Skills that involve using your VOICE)

- 1. Projection** Ensuring your voice is loud and clear for the audience to hear.
- 2. Volume** How loudly or quietly you say something. (Shouting, whispering)
- 3. Tone** The way you say something in order to communicate your emotions. (E.g. Angry, worried, shocked tone of voice)
- 4. Pace** The speed of what you say.
- 5. Pause** Moments of pause can create tension, or show that you are thinking.
- 6. Accent** Use of an accent tells the audience where your character is from.
- 7. Pitch** How high or low your voice is.
- 8. Emphasis** Changing the way a word or part of a sentence is said, in order to emphasise it. (Make it stand out.) Try emphasising the words in capital letters and see how it changes the meaning:
"How could YOU do that?"
"How could you do THAT?"



Physical Skills... (Skills that involve using your BODY)

- 1. Body Language** How an actor uses their body to communicate meaning. For example, crossing your arms could mean you are fed up.
- 2. Posture** The position an actor holds their body when sitting or standing. For example, an upright posture.
- 3. Gait** The way an actor walks.
- 4. Facial Expressions** A form of non-verbal communication that expresses the way you are feeling, using the face.
- 5. Gestures** A movement of part of the body, especially a hand or the head, to express an idea or meaning.
- 6. Stance** The way you position yourself when standing to communicate your role. An elderly person would have a different stance to a child!



Spanish - Key verbs and vocab

Key phrases for this half term - Holidays

1. **Normalmente voy a Italia** - Normally I go to Italy
2. **Voy con mi familia en avión** - I go with my family by plane
3. **El año pasado fui a España** - Last year I went to Spain.
4. **Fui con mi clase y fuimos en autocar** - I went with my class and we went by coach
5. **¡Fue flipante!** - It was awesome
6. **¡Lo pasé bomba!** - I had a great time!
7. **El hotel era muy grande** - the hotel was very big
8. **El primer día** visité monumentos - On the first day I visited monuments
9. **El último día** descansé en la playa - On the last day I relaxed on the beach
10. **¡Ojalá pudiera ir a Australia!** - If only I could go to Australia!

Normalmente voy a **Alemania** con **mi familia**. Vamos en **coche** y es muy **divertido**. Sin embargo, el año pasado fui a **Francia** con **mis amigos**. Fui en **avión** y ilo pasé **bomba**! El hotel era **pequeño** pero muy **lujoso**. El primer día **visité monumentos** y **sagué fotos** y fue **divertido**. El último día **tomé el sol** y **nadé en el mar**. Después, **descansé en la playa**. En el futuro me gustaría viajar más. ¡Ojalá pudiera ir a **Estados Unidos**!

Para ir más lejos: (To go further ...)



Scan this QR code with your phone or tablet. It will take you to BBC Bitesize where you can practice how to form the preterite (past) tense in Spanish - Very useful!



Your teacher should have given you your username and password for **Language Nut**. Log in and complete some of the revision games on there. It's great for practising speaking and listening skills!

Week 1: Practice key phrases 1-5 - look, cover, write, check, correct x 3.
Week 2: Practice key phrases 6 -10 - look, cover, write, check, correct x3.
Week 3: Translate the paragraph into English.

Week 4: Re-write the paragraph replacing the underlined parts with your own information.

Week 5: Create a mind map of any key phrases you can remember and then fill it in with red pen using this knowledge organiser.

Week 6: Teach it! Create a resource that will help teach others these key phrases. It could be a poster, a PowerPoint presentation, a leaflet or anything else. If you can, stick it in your home learning book.

Week 7: Write a paragraph about your holidays FROM MEMORY! Then check it over with your red pen. Read it out loud to a member of your family to practice your pronunciation.

Key Vocabulary and Definitions

Genre - a style or category of art, music, or literature.

Conventions - a set of typical rules which are generally accepted.

Setting - an environment or surrounding in which an event or story takes place.

Atmosphere - tone or mood of a place, situation, or creative work.

Pathetic Fallacy – when the weather reflects the mood.

Adverb - a word used to describe a verb (action word).

Adjective – a word used to describe a noun.

Imagery – vivid, descriptive language designed to paint pictures in the reader's mind. Similes, metaphors and personification.

Tension - a feeling of nervousness, excitement, or fear.

Foreshadowing - a writer gives an advance hint of what is to come later in the story.

Dialogue - A conversation between two or more people in a novel, play, story or film.

Y8 Ghost Stories Knowledge Organiser

Genre Conventions

- Death and darkness
- The Supernatural
- Curses or prophecies
- Madness or paranoia
- Mystery, terror and suspense
- Superstition

Typical Settings

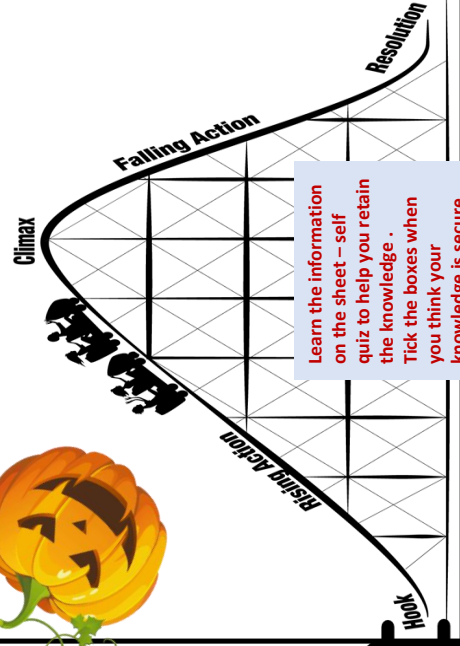
- Wild Landscapes
- Medieval castles or churches
- Gloomy, decayed or ruined environments
- A haunted house or school, funfair or forest
- Volatile and threatening weather

BOO!



Structure of a Story

1. **Hook** – Introduce setting and characters
2. **Rising Action** – The narrative begins to develop
3. **Climax** – The action is at its highest point. The tension and build up has reached a crisis point.
4. **Falling Action** - the main problem of the story is resolved. The story begins to slow down.
5. **Resolution** - any remaining problems are resolved and the story comes to an end.



Learn the information on the sheet – self quiz to help you retain the knowledge . Tick the boxes when you think your knowledge is secure.

Narrative Writing - Ghost Stories

Home Learning Tasks

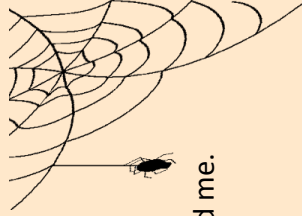
Week 1 Conventions

A convention is a rule, tradition or the way that something is usually done. Make a mind map of things that we might expect to find in a ghost story. Think about things like setting, weather, characters, plot, colours, mysterious objects etc.

Week 2 Show not tell

'The weather was hot' is an example of TELLING.
'The sun burned against my skin; beads of sweat rolled down my face' is an example of SHOWING.

Change the sentences below to sentences that 'show' rather than 'tell'.



1. Joe was terrified.
2. She was shocked.
3. The house looked scary.
4. I heard footsteps behind me.
5. The moon was shining.
6. I heard scary noises.
7. It was dark.
8. It was silent.
9. There was a strange smell.
10. It was cold and foggy.



Week 3 Adverbs

Adverbs are words that tell us more about a verb. Adverbs tell us **how**, **when** or **where** the action (**verb**) took place.

E.g. The sun **burned fiercely** against my skin; beads of sweat **gently rolled** down my face.

Using your improved sentences from Week 2, identify the verb in each sentence and try to add further detail by including an adverb.

Week 4 Character



Choose one of the images above. Write as much information as you can to develop this character. Name, age, words to describe personality, hobbies, likes and dislikes, fears, friends, enemies. How would you present them as a character in a ghost story?

Week 5 Tension



Imagine you are approaching this house. Describe the walk building as much tension as possible. Use as many of the following techniques as you can to help:

Repetition, Range of sentences, Pathetic fallacy, Sensory imagery – seeing, hearing, Narrator's feelings, Detailed description Adjectives, Adverbs, Similes, Metaphors, Personification.

Week 6 Story Structure

Using the story structure over the page on the knowledge organiser, **design a detailed plan** for your own ghost story. Ensure you include information for each section of the story. Decide what type of ending you will use e.g. Cliff-hanger ending, Plot twist ending, Happy ending, Learning a lesson ending, Question ending, Crystal ball ending

Year 8 Geography- Rocky World Knowledge Organiser

There are three types of rock:

- Igneous**
- Sedimentary**
- Metamorphic**

Each of the different rock types has different properties...

Igneous rocks are formed when liquid rock, called magma, cools down. They are made up of lots of interlocking crystals. The crystals fit very tightly together making the rock very hard. Extrusive rocks form above the ground and contain small crystals. Intrusive igneous rocks form underground and contain large crystals because they cool slowly, allowing the crystals to get bigger over time.

Igneous rocks do not contain fossils because they would melt in the hot magma.

Examples: granite, basalt, obsidian.

Sedimentary rocks are made up of sediment – tiny rock particles and bits of dead animals and plants. The rock is formed when layers of sediment deposited in lakes and seas are cemented together over millions of years.

Grains of sediment are usually rounded. This means that they do not fit together very closely, making the rock soft and crumbly.

The remains of dead animals and plants can be trapped in sediment when it is deposited, forming fossils over time.

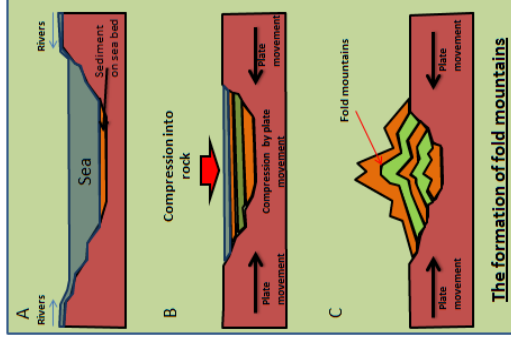
Examples: limestone, chalk, sandstone.

Metamorphic rocks are formed from other rocks that are chemically changed by pressure from surrounding rock, or by the heat of nearby magma.

They are made up of interlocking crystals. When a rock is formed under pressure, its crystals become arranged in layers. The rocks are usually quite hard but can break easily along these layers.

Metamorphic rocks sometimes contain fossils if they were formed from a sedimentary rock, but the fossils are usually squashed out of shape.

Examples: slate (formed from shale), marble (formed from limestone).

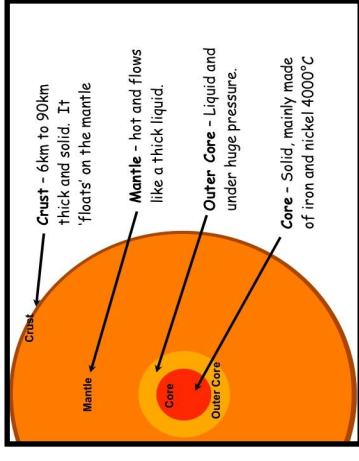


Fold mountain formation

- Fold mountains are mountains formed from folding of the earth's crust and tend to be made of sedimentary rocks.
- The crust of the earth is made up of plates. These plates move around very, very slowly.
- When two plates of similar density push together folding of the crust takes place.
- The crust is squashed together and forced upwards. Sedimentary rocks are forced upwards into a series of folds.
- The whole process takes millions of years.

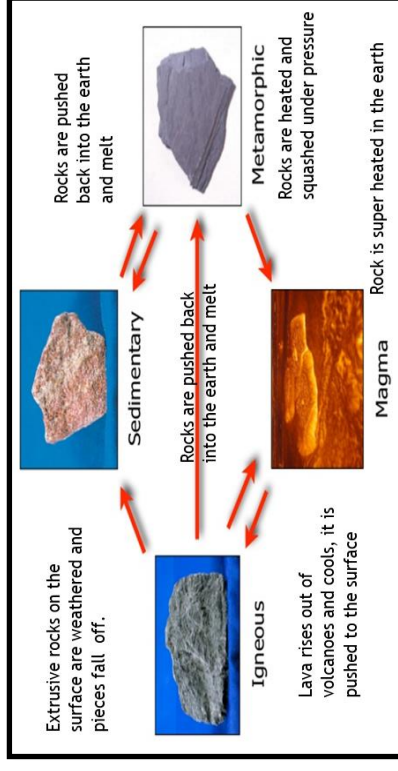
Key words & definitions

1. Water dripping from the roofs of caves leave behind microscopic particles of calcium carbonate. These build up as icicle shaped features. **Stalactite**
2. Drips splashing onto the floor of caves leave behind microscopic particles of calcium carbonate. These build up on the floor of caves. **Stalagmite**
3. Where a stalagmite and stalactite join you get a **pillar**.
4. An underground cave that has been hollowed out by the action of underground streams and by carbonation and solution. **Cavern**
5. Water flowing over an impermeable surface will, on reaching (permeable) limestone, be able to dissolve the joints into grooves. **Grykes**
6. Water flowing over an impermeable surface will, on reaching (permeable) limestone, leave blocks or clumps of limestone behind. **Clints**
7. When water flows down a swallow hole it flows underground along bedding planes and down joints. This continues until the water reaches and impermeable layer of rock then it is forced back to the surface (a spring). **Resurgence**
8. Is a sedimentary rock formed from the remains of tiny shells and micro-skeletons deposited on the sea bed. **Limestone**
9. Hollow place in the ground, a natural underground space large enough for a human to enter. **Cave**
10. Fine-grained natural rock or soil material that can be sticky to the touch when wet. **Clay**



Structure of the Earth

The Rock Cycle



Tasks - if you complete all 6, revisit some or all from memory

Task 1: Revise the 3 types of rocks and their characteristics. From memory create 3 spider diagrams for each rock type. Red pen anything that has been missed.

Task 2: Read over how fold mountains form, then create a storyboard showing in steps how these form.

Task 3: Using Google find out about how Mount Everest was formed. Explain why there are fossils found on the top of Mount Everest.

Task 4: Look over the structure of Earth diagram, Cover and then write down in order the layers and information about each layer. Red pen any missing detail.

Task 5: Learn the key definitions by getting someone to test you. Draw a quick diagram to help you remember each one. Use Google to find photos to help if needed

Task 6: Look over the rock cycle diagram. Cover and draw from memory. Sketch what each rock looks like.

HINDUISM

BACKGROUND

- Hinduism began in India and is one of the world's oldest religions
- It is also called Sanatan Dharma which means 'eternal truth'
- There are around 900 million Hindus in the world today
- Hindus use 'namaste' as a greeting. It offers peace and respect to the other person's soul



HINDU TEACHINGS:

KEY WORDS:

REINCARNATION	The belief that we are born, we live, we die and then are born again into a new body	PILGRIMAGE	A holy journey to a special place
DEITY	A Hindu god or goddess	BRAHMAN	The universal spirit that is in all things
KRISHNA	The popular Hindu god of compassion and love	GHAT	A platform used by pilgrims to the river Ganges
KARMA	A sense of universal justice, that we are rewarded and punished for the life that we have lived	GANGES	A holy river that is a place of pilgrimage
PRASHAD	Food that has been blessed by the gods	MANDIR	The Hindu place of worship, prayer and meditation
MURTI	A statue of a god	SAMSARA	The cycle of life
AUM	The holy symbol of Hinduism	NAMASTE	A Hindu greeting

**SOME
TASKS
FOR YOU
TO
COMPLETE**

Draw a symbol for each key word

Create a mind map of Hindu worship. Use different colours for mandir and pilgrimage

Create a key word quiz or flash cards

Write your answers to 3 reflection questions

Investigate an issue in the media that involves Hinduism

Create a poster of Hindu beliefs

Make flash cards for the Hindu deities

As we study think about...

How do these beliefs help Hindus?

How do the beliefs and actions make them feel?

What links can you make with your life?

How do they express their beliefs in everyday life?

What symbols/images do they use?

"Just as a man casts off worn out clothes.... so the soul casts off worn out bodies and enters others that are new."

"The whole universe comes from the Supreme Spirit."

"The lord lives in the heart of all creatures"

HINDU DEITIES

Hindus worship a Supreme Spirit:

BRAHMAN.

It is

- Universal (one, all-encompassing spirit)
- Neither male nor female
- Invisible
- Present in all living things
- Fulfilling roles in creation as different deities

BRAHMA – the god of creation. He creates new life and is matched with SARASWATI, the goddess of wisdom and music.



VISHNU – the god of protection. He sustains the world and keeps it safe. He is matched with LAKSHMI, the goddess of wealth and beauty.



SHIVA – the god of destruction. He destroys so that new life can come and is matched with PARVATI, the mother goddess.



What do they believe in?

REINCARNATION:

- Hindus believe in **samsara**, the idea that life goes in cycles
- They believe that your soul will go to a new life when you die
- Your new life depends on whether you have good or bad **karma**
- With enough good karma a Hindu's soul will one day be reunited with Brahman and become one with the universe



DHARMA:

- Hindus believe we have duties to fulfil in life
- The duties depend on whether we are a student, an adult or retired
- Performing these duties well brings good karma
- Dharma is linked to our caste (the level of society we are born into) to move up to a better caste we must have good karma

Where do they worship? IN THE MANDIR:

- At the front of the worship hall is a **shrine**. It has beautifully decorated statues of the gods which are called **murtis**.
- Food and flowers offered. When food is blessed by the god it becomes **prashad**.
- A bell is rung to announce that worship is beginning
- **Incense** is burnt to purify the air and carry prayers to god
- Flowers are offered, a reminder of beauty
- Men and women sit on the floor in front of the shrine
- A pilgrim may walk to a mandir for many miles barefoot to show their **commitment** to the gods



Where do they worship? ON PILGRIMAGE:

- They visit **mandirs** to pray as they believe that these prayers are more likely to be answered
- They **make offerings** to the gods as a sign of love and devotion.
- They visit the places like **Varanasi** where the gods were born or lived to show **respect**
- They stand on **ghats** (special platforms beside the river)
- They **bathe** in the river to **wash away their sins**. This is so that they can get good **karma**
- They **scatter ashes** of loved ones to speed up their journey to the **next life**



ART KNOWLEDGE ORGANISER

YEAR 8

Term 1 (1a)

Drawings and Techniques

Topic: Native American Art and Culture

Native American Art and Culture:

The **Native Americans**, also known as **American Indians**, lived in the United States for a very long time before **Christopher Columbus** discovered America. They were known as the 'indigenous people'. They were recognised as 'American Indians' because Christopher Columbus first thought that he had arrived in India and then the name stuck.

You can research about their amazing culture and learn about the things they love like Art, music, spirit animals, religion and how they lived. In your Art lessons you'll be looking closely at the different types of Art these people created. See examples.

The Native Americans lived within many different tribes. These tribes were hunter/ gatherers. Some of the most famous well known tribes of native America were the 'Cherokee, Apache, and the Navajo'. Some of the most famous Native Americans Pocahontas and Sitting Bull. You can research many stories about these tribes and individuals.

TASKS TO COMPLETE:

Week 1: Practice key literacy vocab 1-6 – look, cover, write, check, correct x 3. Read the sentences again and check for understanding.

Week 2: Practice key phrases 7 -12 - look, cover, write, check, correct x3. Read the sentences again and check for understanding.

Week 3: Create a page of mark-making techniques similar to the ones in image week 3 (below). Use either, pencil or pen to complete. You can google mark-making techniques for more ideas.

Week 4: Create a page of tonal experimental drawings, similar to the ones in image week 4 (below). This should include a tonal bar and some tonal shapes, showing light and dark tones. You can google tonal techniques for more ideas.

Week 5: Produce a drawing of an "Animal skull", see images week 5 (below). Use pencil tone and/or mark-making skills to demonstrate your knowledge (this needs to take two weeks).

Week 6: Continue your drawing of an "Animal skull", see images week 5 (below). Use pencil tone and/or mark-making skills to demonstrate your knowledge.

Week 7: Watch the videos in the further development section and create your own set of step-by-step instructions.

Key Literacy Vocabulary:

1: DRAWING: drawing is the act of leaving a mark on a page or surface.

2: MEDIA/MEDIUM: the materials and tools used by the artist to create a piece of work.

3: TECHNIQUE: the skill in which the artist uses the tools to create the piece of work.

4: MIXED MEDIA: a use of more than one material within the artwork.

5: EQUIPMENT/MATERIALS: A set of items/articals of materials, used in art to create work.

6: MARK MAKING: the different lines, patterns and textures used to create a piece of work.

7: TONE: the lightness or darkness of something.

8: CONTROL: How carefully you work with specific media.

to create a gradual transition or to soften lines.

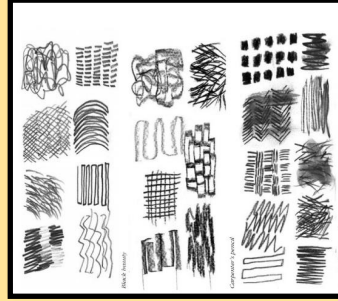
9: PROCESS: process refers to the steps undertaken to achieve something.

10: APPLICATION: the way a material is applied to a surface.

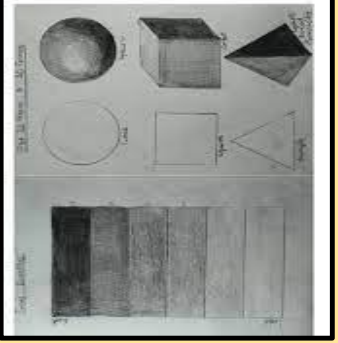
11: CONTROL: How carefully you work with specific media.

12: EMPHASIS: make something more prominent, stand out or have more significance within a piece of art work

Mark-making (week 3)



Tonal drawing (week 4)



Animal skull (week 5)



Further development

Watch these videos below. They will give you lots of ideas on how to explore new techniques, using different media.

Mark-Making



Tone ladder/bar



Tone





DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

Topic: Wooden Wheeled Children's Toy Project



YEAR 8 DT

My Tool Box



Tenon Saw – Used to cut straight lines in wood.



Coping Saw – Used to cut curves and internal shapes in



Try Square – Used to mark out right angles.



Vice – Used to hold an object.



Hack Saw – Used to cut metal.



Pyro pen – Used to burn designs into wood



Pillar/Bench Drill – Used to drill holes into different materials.



Machine vice/Drill Press Vice – Used to hold workpiece securely during drilling.



Belt Sander – Used to sand/smooth down different materials

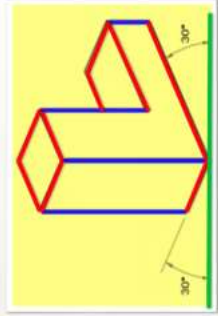
Focused topics

6 R's of Sustainability



Isometric drawing

In isometric projection the drawing is made up of a series of parallel **vertical lines** and parallel **30 degree lines**. There are no **horizontal lines**.



Oblique drawing

In oblique projection the drawing is made up of a series of parallel **horizontal and vertical lines** and parallel **45 degree lines**.



Key Terms

Hardwood - the wood from a deciduous, broadleaved tree (such as oak, ash, or beech)

Manufactured Board – timber sheets which are produced by gluing wood layers or fibres together (such as MDF, Plywood and Chipboard)

Pyrography - decorating wood by burning a design on the surface with a heated metallic point

Renewable - inexhaustible and replaceable

Softwood - the wood from a conifer (such as pine, fir, or spruce)

Sustainable - A sustainable resource can be replaced once used. As a tree is chopped down, many more can be planted to ensure the use of trees can be sustained.

Tasks

Task 1: Learn the tool names and their use.

Task 2: Learn the key words and the definition.

Task 3: Create 6 questions that can be answered from the information in the focused topic column.

Task 4: Draw two tools and write what they are for.

Task 5: Create a quiz based on task 1, 2 or 3. Get someone to test you.

Task 6: Create a mind map for the information you remember and red pen anything you've forgotten.

Task 7: Teach it. Create a task that can be used to teach some of the information from here.

To go further:

Introduction to oblique sketches:



More information about natural and manufactured timber:



Week One

Read your knowledge organiser focusing on **Acids & Bases** for 5 minutes. Then turn the organiser over and write a short summary of the topic.

The summary should include:

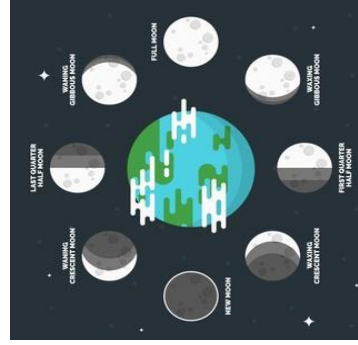
1. No more than 40 words
2. And should be written in full sentences.

Week Two

1. Define the term 'indicator'
2. Which indicator do we use mostly in the lab?
3. What pH indicates a neutral solution?
4. If a substance has a pH of 1, what type of substance is it?
5. If a substance has a pH of 14, what type of substance is it?

Week Three

1. Our Moon can sometimes be seen during the night. Explain why
2. Describe how a full moon occurs.
3. Describe how a new moon occurs.



Week Four

Pick 4 key words from the knowledge organiser page title **space**. Using those 4 key words make as many links between the words as you can.

Remember to include:

1. The 4 key words you have chosen
2. The links you have made between the words, these should be written along the arrow that connects them.

Week Five

Using your Home Learning book, make a quiz containing at least 10 questions from the topics **Acids & Bases** and **Space**.

Remember to include:

1. Answers to each question written in full sentences,
2. A variation in the type of question, Draw/state/explain etc.

Week Six

Read your knowledge organiser focusing on **Health and Lifestyle** for 5 minutes. Then turn the organiser over and write a short summary of the topic.

The summary should include:

1. No more than 40 words
2. And should be written in full sentences.



Have you completed your 4 daily goals?

Completion of your 4 daily goals this week will ensure you avoid a L1 detention next week! 😊

Home learning tips:

1. Answer any questions in full sentences.
2. Take your time reading through your knowledge organiser.
3. Read the task twice.
4. Ask your teacher in your next lesson if you are unsure about anything.
5. Not sure which week to do? Ask your teacher!

What do I need to be able to do?

- Define acids and alkalis in terms of neutralisation reactions
- Describe the reactions of acids with alkalis to produce a salt plus water
- Understand the pH scale for measuring acidity/alkalinity; and indicators
- Construct word equations to demonstrate neutralisation reactions
- Identify pH from colour of indicator and vice versa
- Describe the hazards associated with acids and alkalis

7. Uses of Neutralisation

Farmers use the base calcium oxide to neutralise acid soils, caused by acid rain

Your stomach contains hydrochloric acid, and too much of this causes indigestion. Antacid tablets contain bases such as magnesium hydroxide and magnesium carbonate to neutralise the extra acid.

Bee stings are acidic. They can be neutralised using baking powder, which contains sodium hydrogen carbonate

Bacteria in your mouth produce plaque acid that can damage your teeth.

Toothpaste contains the base calcium carbonate to neutralise the plaque acid.

7.9 – Acids & Bases

2. Indicators & The pH Scale

An **indicator** is a substance that **changes colour** when it is added to an acidic or alkaline solution. *Litmus paper and universal indicator are commonly used in the lab.*

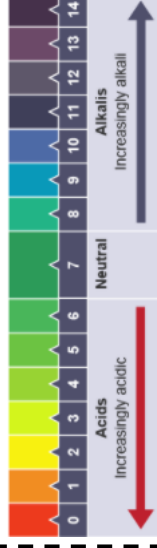
You'll see this **warning label** on bottles of strong acids and alkalis that we use in the lab.



To keep ourselves safe from harm we should wash our hands immediately if we get any on our skin, and report spillages to the teacher

Weak acids and alkalis do not pose much risk. Acids have a **sour taste** so can be used in food e.g. vinegar (ethanoic acid). Alkalis **feel soapy** so are used in toothpaste and shampoos. Even though weak acids are less hazardous, they will still hurt if you get them in your eyes!

Universal indicator is a very useful indicator because it not only tells us if a substance is acidic or alkaline, it can also indicate the **strength**.



- The closer to pH 0 you go, the more strongly acidic a solution is
- The closer to pH 14 you go, the more strongly alkaline a solution is

5. Making Salts

To make crystals of the salt, copper sulfate:
Copper oxide + sulfuric acid → copper sulfate + water

1. Warm the sulfuric acid gently using a Bunsen burner – *to increase the rate of reaction*
2. Add a spatula of copper oxide to sulfuric acid, one at a time and stir, until no more will dissolve – *this is to ensure all of the acid reacts*
3. Pour the mixture through funnel and filter paper – *to remove the excess copper oxide that didn't dissolve.*
4. Transfer the filtered solution to an evaporating dish and evaporate most (but not all) of the water using a Bunsen burner
5. Remove from the heat and leave to cool – *crystals will form*

Watch Video



To see this done

3. Neutralisation

A **neutralisation** reaction occurs when an acid and a base are mixed together. A neutral solution is made if you add the right amount of acid and base together.

Neutralisation is an **exothermic** reaction. Hint – See 7.5 Reactions for more on exothermic reactions

Different types of bases will make different products during neutralisation:

Metal oxide + acid → salt + water

e.g. copper oxide + sulfuric acid → copper sulfate + water

Metal hydroxide + acid → salt + water

e.g. lithium hydroxide + sulfuric acid → lithium sulfate + water

Metal carbonate + acid → salt + water + carbon dioxide

Zinc carbonate + sulfuric acid → zinc sulfate + water + carbon dioxide

4. Naming Salts

To name the salt made in neutralisation

reactions:

- Prefix of the name is dependent on the metal used
- Suffix is dependent on the acid used:

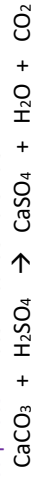
Type of Acid	Suffix of salt name
Hydrochloric acid	Chloride
Sulphuric acid	Sulphate
Nitric acid	Nitrate

e.g.

Lithium oxide + hydrochloric acid → lithium chloride + water



Calcium carbonate + sulphuric acid → calcium sulphate + water + carbon dioxide



What do I need to be able to do?

- Describe: gravity force as different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun
- Identify: our Sun as a star, other stars in our galaxy, other galaxies
- Describe: the seasons and the Earth's tilt, day length at different times of year, in different hemispheres
- Understand the light year as a unit of astronomical distance.
- Calculate weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$
- Scale models of distances between celestial bodies and sizes
- Modelling orbits and spin of celestial bodies
- Modelling: day night/seasons/temperature differences and phases of the moon with light source

1. The Night Sky

Our Solar System contains:

A **Star**: The Sun

Planets: Which go around the Sun

Satellites: Which go around planets

Smaller objects: Such as **asteroids** and **comets**

An **orbit** is a regular, repeating path that one object in space takes around another one.

These can be **circular** or **elliptical** depending on the object and the circumstances around its formation.



8.1 – Space

2. The Solar System

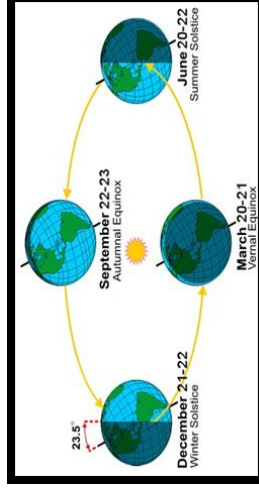


- 1. Mercury **Smaller than some moons!**
- 2. Venus **Hottest! (450°C)**
- 3. Earth **Home!**
- 4. Mars **6 rovers on here!**
- 5. Jupiter **Largest!**
- 6. Saturn **Less dense than water!**
- 7. Uranus **Spins on its side! (98° tilt)**
- 8. Neptune **Coldest! (-200°C)**

3. The Earth

- Hemisphere** – half a sphere (northern and southern)
- A day** - time taken for the Earth to spin on its axis once (24 hours)
- A year** - the time taken for the Earth to complete 1 orbit around the sun (365.25 days)
- Tilt** - the angle of rotation measured from perpendicular to the solar plane (23.5° for Earth).

Seasons:



6. The Universe

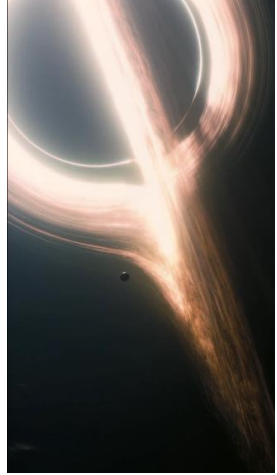
Galaxy - a large group of gravitationally bound stars. (Can number trillions!)

The Universe - everything in existence.

The Big Bang - an energetic event that occurred at the start of our Universes existence,

Black hole - the final stage of the life of the largest stars. Its gravity is so strong nothing can escape it.

Nebula - huge clouds of gas in which stars are formed.



5. Gravitational Field Strength

It doesn't matter where in the Universe you are, **your mass will not change**.

Your **weight** is **dependent** of the size of the **gravitational field strength**.

So, because "g" is around 6 times less on the Moon than it is on Earth, you would weigh around 6 times less on the Moon!

We can use the following equation to calculate the **weight** of an object on a planet (e.g. Earth):

$$\text{Weight} = \text{mass} \times \text{gravitational field strength}$$

$$(N) \quad (kg) \quad (N/kg)$$

$$E - W = m \times g$$

$$V - m = 65 \text{ kg} \quad g = 10 \text{ N/kg}$$

$$E - W = 65 \times 10$$

$$R - W = 650$$

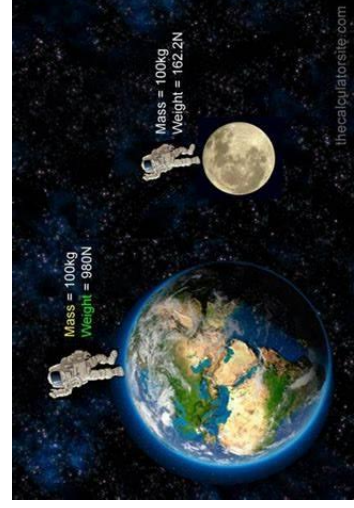
$$Y - W = 650 \text{ N/kg}$$

Weight is a force that is dependent on the amount of gravity an object feels.

Mass is a measure of how difficult it is to change the motion of an object.

Gravity (gravitational field strength) is the force acting on each kilogram of mass.

On Earth the gravitational field strength (g) is approximately 10 N/kg.

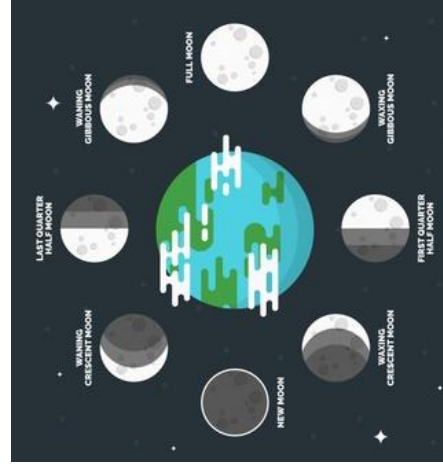


4. The Moon

The **Moon** is a natural satellite of the Earth.

The Moon completes 1 orbit of the Earth **every 28 days**.

Its position relative to the Earth and the Sun causes it to **appear different** in the night sky as the amount of observed **reflected** light changes.

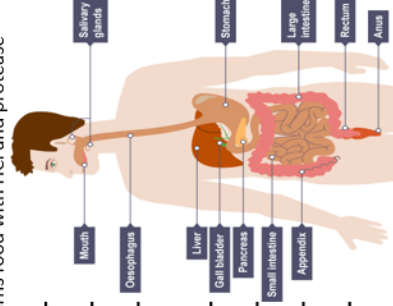


Health and Lifestyle

Digestion is the breakdown of carbohydrates, proteins and fats into small soluble substances to be absorbed into the blood.

The Digestive System

Mouth	Mechanical breakdown/chew food
Salivary glands	Produce saliva with amylase enzymes to breakdown starch
Oesophagus	Push chewed food to stomach
Stomach	Partial digestion of food/mechanically churns food with HCl and protease enzymes
Pancreas	Produces digestive enzymes
Liver	Produces bile
Gall bladder	Stores bile which breaks down fats (lipids) and neutralises the HCl(stomach acid)
Small intestine	Absorption of small soluble particles
Large intestine – colon	Where water is reabsorbed
Large intestine – rectum	Muscular section of the large intestines
Large intestine – anus	Where faeces leave the body



Types of Enzymes

Enzymes are proteins that function as biological catalysts. They can break down larger molecules into smaller, soluble molecules that can be absorbed in the small intestine.

Enzyme	Substrate	End product	Where produced
Protease	Protein	Amino acids	Stomach, pancreas
Lipase	Lipids	Fatty acids and glycerol	Pancreas
Amylase	Carbohydrates (starch)	Simple sugars	Mouth, small intestine

Enzymes

Organisms use enzymes to control chemical reactions. Enzymes are **catalysts**, so they speed up chemical reactions. They have an **active site** with a specific shape. A specific molecule slots into the active site (like a key into a lock) and the reaction takes place.



Absorb	Movement of a substance across a cell membrane
Active site	The area of the enzyme with the specific shape to make the reaction happen with the substrate(s)
Carbohydrate	Food group used as a source of energy
Catalyst	Chemical that speeds up a reaction
Denature	When an enzyme has its shape changed so it no longer works
Digestive enzyme	Enzymes which speed up the process of digest
Enzyme	A biological catalyst. One type of enzyme does one specific reaction
Lipid	Other name for fats, needed as a source of energy
Product	Chemical made during a reaction
Protein	Needed for growth and repair
Substrate	The chemical(s) which are involved in the enzyme catalysed reaction

Food Tests

Test for	Chemical	Result
Sugar	Add Benedict's solution	Turns brick red (or orange with less sugar)
Protein	Add Biuret solution	Turns purple
Starch	Add iodine	Turns blue black

These components of fitness will be tested within your next lessons

Fitness Testing

Feel free to YouTube the tests and practice them in your own time

Component of fitness	Test to perform
<u>Speed</u>	30m speed test
<u>Strength</u>	Handgrip Dynamometer
<u>Agility</u>	Illinois agility test
<u>Muscular endurance</u>	30 second sit up test

Component of fitness	Test to perform
<u>Cardiovascular endurance</u>	Bleep test/Cooper run
<u>Balance</u>	Standing stalk test
<u>Power</u>	Standing long jump
<u>Reaction time</u>	Ruler drop

Task 1

Give a sporting example for each component of fitness.

For example. Speed is needed for a defender in football when chasing down an attacker who is through on goal.

Another example. Balance is needed for a diver on the edge of the diving platform.

Task 4

Why is it important for athletes to have components of fitness when performing in sport?



Scan to view the 100m world record race.

Task 2

Answer the following questions:

- 1) When would a basketballer need agility in a match?
- 2) Why would a 100m sprinter need good reaction time?
- 3) True or False. Cardiovascular endurance is essential for long distance cyclists.

Task 3

Write out all the fitness tests in your book and without looking match up each component of fitness to the tests

PERFECT
PRACTICE
MAKES
PERFECT



SCAN ME

Learning to Learn



SCAN ME

The 'Listen' Project #1