HOME-LEARNING

YEAR 8

HALF TERM 4

"STRIVE FOR PROGRESS, NOT PERFECTION."

UNKNOWN

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!

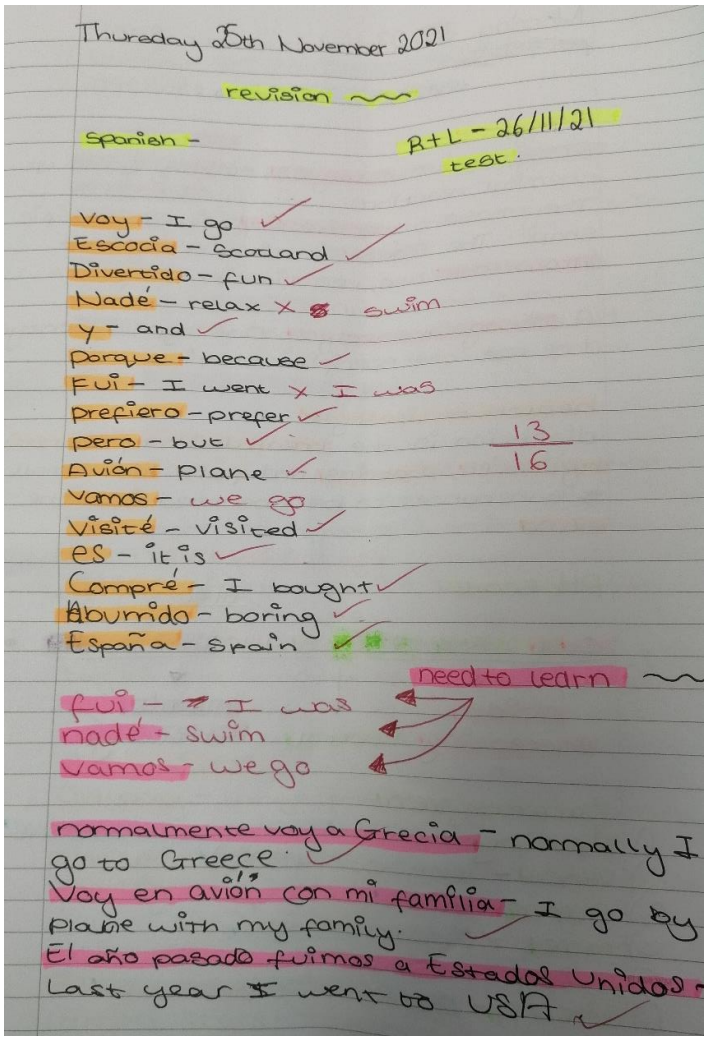
What does effective home-learning look like?

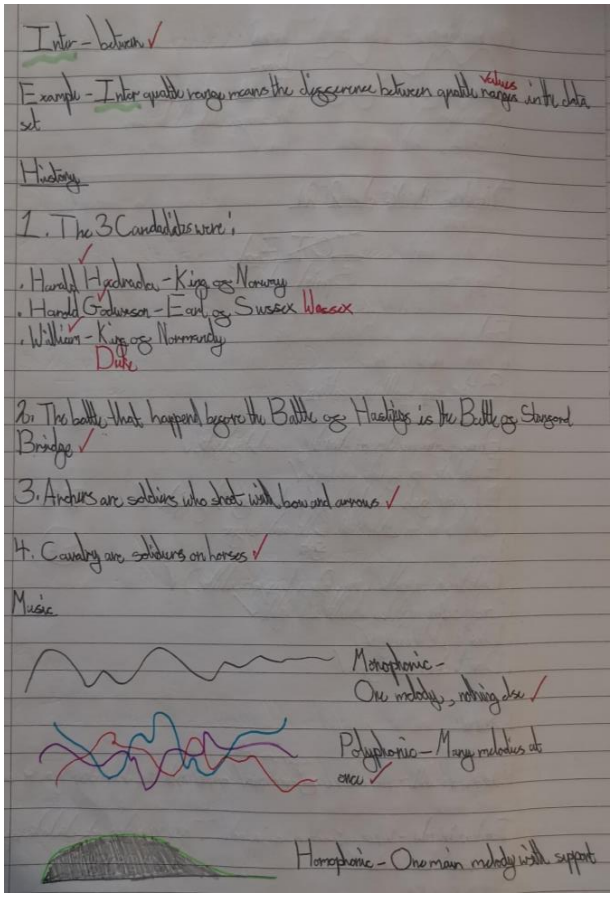
Here are some essential points to remember and some examples to see.

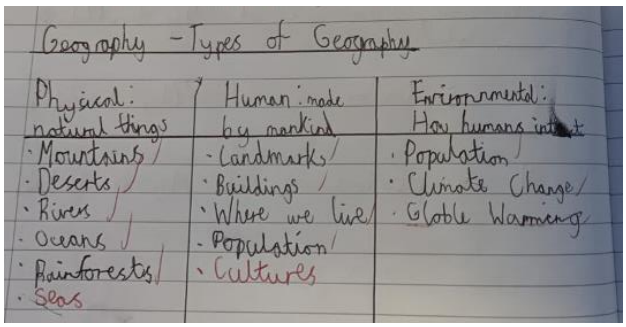
- Long term memories are created when you have to **think**. Simply copying does not help you remember. Testing yourself will make you **think** and remember

- 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	**Computing/Food**	**English**	**Design Technology (DT)**	
History	**Drama**	**Geography**	**Science** **[Knowledge Organisers]**	
Music	**Spanish**	**Art**	**Active Lifestyles/RS**	
← **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

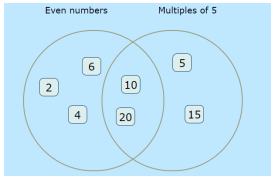
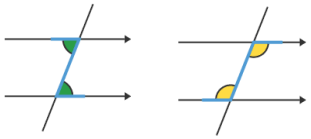
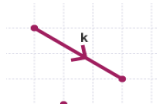
The 'Listen' Project #1

Mathematics

Your Maths Home Learning has two parts:

Part 1 is: Copy the definition of the key word and diagrams into your Home Learning Book, then use these to complete the task

Part 2 is: Scan the Corbett Code (or look up the video number) for extra practice.

Week	Key Word	Definition	Task	Corbett Code
1	Prime Factor	**Prime** factors are **factors** of a number that are, themselves, prime numbers. You can break a number into it's prime factors (prime factor decomposition) *Eg. 84 = 2 x 2 x 3 x 7 = 2^2 x 3 x 7*	Express as a product of prime factors (see the example) A) 30 B) 45 C) 60 What do you notice between a and c? Why does this happen?	223 Scan here
2	Highest Common Factor (HCF)	The largest number that is a factor or two other numbers. Eg Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24 Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18. 36 HCF of 24 and 36 is 12	Find the HCF of: A) 12 and 18 B) 18 and 24 C) 24 and 30	219 Scan here
3	Lowest Common Multiple (LCM)	The smallest number that is a multiple of two other numbers Eg. Multiples of 12: 12, 24, 36, 48, 60 Multiples of 18: 18. 36, 54, 72 LCM of 12 and 18 is 36	Find the LCM of: A) 4 and 6 B) 6 and 10 C) 8 and 12	Scan here
4	Venn Diagram	Two or more overlapping circles which show groups of belonging. In this example 10 and 20 go in to the middle because they are even numbers AND multiples of 5 	Draw a similar Venn diagram to this one and label the circles odd numbers and multiples of 3. Then put all the numbers from 1-20 in the diagram What do you think you would do with numbers than don't belong in either circle?	380
5	Alternate Angle	Alternate angles make a Z shape on two parallel lines. Alternate angles are equal 	Copy out the first diagram from the left. Use different colour pens to match up as many alternate angles as you can.	25 Scan here
6	Vector	A **vector** describes a movement from one point to another. A vector quantity has both **direction** and **magnitude** (size).	Draw 4 vectors (as arrows) in your book and describe them. Here is an example: **3 right, 2 down** 	353a Scan here

History KNOWLEDGE ORGANISER

Topic: How did Britain change, 1750-1900?

YEAR 8
HT4

Overview

The years 1750-1900 were a time of great change for Britain. Key areas of change included:

- Agriculture – New tools, fertilisers and harvesting techniques were introduced, resulting in increased productivity and agricultural prosperity.
- Industry – factories sprung up all over the country creating more efficient ways to produce goods such as wool, cotton and coal. The increase in factories brought thousands of new jobs.
- Transport and communications - Thomas Telford built roads and canals in the 1700s and George Stephenson and Brunel oversaw the 'Railway Mania' of the 1800s. There had previously been no very fast way of transporting goods and people around the country.
- Technology - There were also many scientific discoveries and technological inventions that changed society and industry. Changes to sanitation (keeping clean) and medical treatment such as the work of John Snow who worked on understanding how diseases spread and Edward Jenner who developed the first vaccination improved people's quality of life.

Key People and Terms

John Snow
Snow was an English doctor who discovered that the water in his local area was making everyone ill. His work led to the discovery of Cholera and improved health for thousands.

Isambard Kingdom Brunel
One of the most influential engineers of the Industrial Revolution. Brunel built railways and ships and opened up Britain to a new network of industry.

Industrial revolution	A time of great change in Britain between 1750 to 1900
Population	The number of people living in a particular place
Invention	Something new which is created, can be an object or an idea
Economy	The system of how money is used within a particular country
Agriculture	The process of producing food, and fibres by farming of certain plants or raising animals
Poverty	The lack of basic human needs such as clean water, nutrition, healthcare, education and shelter
Sanitation	Sanitation is the system that disposes of human waste

Factory working conditions

Long working hours: Normal shifts were usually 12-14 hours a day, with extra time required during busy periods.

Low wages: A typical wage for male workers was about 15 shillings (75p) a week, but women and children were paid much less, with children three shillings (15p). For this reason, employers preferred to employ women and children.

Cruel discipline: There was frequent "strapping" (hitting with a leather strap). Other punishments included nailing children's ears to the table and dowsing them in water butts to keep them awake.

Accidents: Forcing children to crawl into dangerous, unguarded machinery led to many accidents and deaths.

Health: The air was full of dust, which led to chest and lung diseases and loud noise made by machines damaged workers' hearing.

Living conditions

Overcrowding: Due to large numbers of people moving to the cities, there were not enough houses for all these people to live in.

Disease: Typhus, Typhoid, Tuberculosis and Cholera all existed in the cities of England. Overcrowding, low standard housing and poor-quality water supplies all helped spread disease.

Waste disposal: Gutters were filled with litter. Human waste was discharged directly into the sewers, which flowed straight into rivers.

Poor quality housing: houses were built very close together so there was little light or fresh air inside them. They did not have running water and people found it difficult to keep clean.

Lack of fresh water: People could get water from a variety of places, such as streams, wells and standpipes, but this water was often polluted by human waste.

Key inventions

The Steam Engine – 1717

Thomas Newcomen invents the first steam engine. It would later be improved by James Watt which meant steam engines could replace water and horse power in a wide variety of industries, which in turn allowed factories to be built anywhere.

The Water Frame -1769

Richard Arkwright invented a machine, powered by water, to spin cotton into yarn, quickly and easily. His machines did not need skilled operators so Arkwright paid unskilled women and others to work on them. This invention allowed factories and mills to be built.

The Spinning Jenny - 1770

James Hargreaves, a British carpenter and weaver, invents the spinning jenny. The machine spins more than one ball of yarn or thread at a time, making it easier and faster to make cloth. This allows more workers to make cloth more cheaply and increases the amount of factories built.

The Locomotive - 1814

Richard Trevithick was a pioneer in early steam engine technology. He developed a new high-pressure steam engine which could be used to reliably move goods and passengers. This invention made transport much easier and quicker.

ORIGINS OF THE BLUES

- Slaves sang **worksongs** in the fields
- When slavery ended, one way of earning a living for black Americans was to make music
- Their music became hugely popular

LYRIC STRUCTURE

Line A

Line A repeated

Line B – rhymes with line A

Lyrics reflect hard times/sadness.

CHORD STRUCTURE
12 Bar blues

I	I	I	I
IV	IV	I	I
V	IV	I	I

KEY MUSICAL FEATURES

Improvisation – making music up 'on the spot'

Blues scale – a set of notes (scale) used that gives The Blues its 'cool' sound

Call & Response – Where the singer sings a line and an instrument plays a short tune in reply

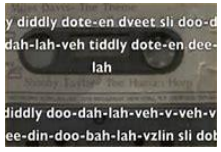
Pentatonic – 5 note scale
(the blues scale is based on this)

Walking Bass – A moving bassline, used in jazz too

Extended chords – Adding a seventh to a chord

KEY BLUES MUSICIANS

Bessie Smith	Muddy Waters
Robert Johnson	Blind Lemon Jefferson



COMMON INSTRUMENTS

- Acoustic & electric guitar (slide)
- Acoustic & electric bass
- Piano
- Trumpet and Saxophone
- Drum Kit
- Harmonica

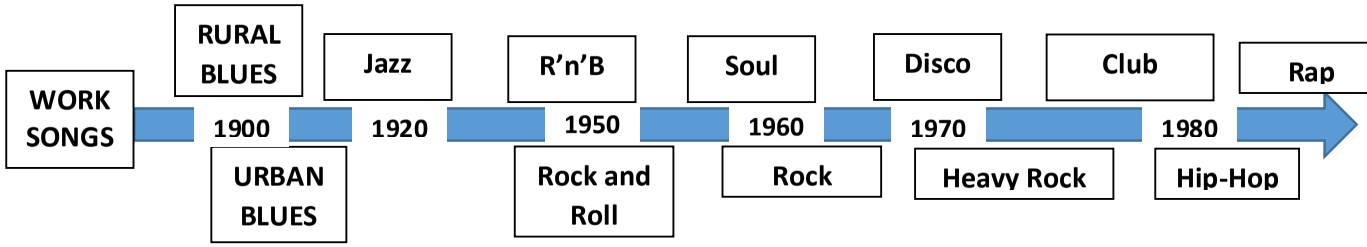
VOCAL TECHNIQUES

- **Scat** – Singing nonsense words and syllables: "do bop be do"
- **Growls** (like scat - also used in jazz)
- **Melisma –** Singing lots of notes to 1 syllable (used in jazz and pop)
- **Vibrato –** shaking your voice for emotion (used in most types of music)

TASKS:

1. Study the origins of the Blues diagram and box about slavery just below it.
2. Learn the lyric and chord structure of the blues.
3. Learn the names of key musicians and their vocal techniques.
4. Learn the key musical features and common instruments.
5. Create a 10 mark quiz based on your first 4 tasks.
6. Study the influence of The Blues – other musical genres and when they happened.
7. Listen to the Youtube clip on the **QR code** and answer the questions next to it. Use this KO to help.

THE INFLUENCE OF THE BLUES



Questions for Task 7:

- What instruments can you hear?
- What vocal techniques can you identify?
- Can you hear any key musical features?

1.5 Macronutrients – carbohydrates

▲ Foods high in fibre

Carbohydrate is one of the five nutrients and is an important part of your diet. Carbohydrates are divided into three groups:

1. **Sugar** – all sugars, treacle and syrups, honey, jam and marmalade. These are called either simple sugars (e.g. glucose) or double sugars (e.g. sucrose).
2. **Starch** – potatoes, rice, pasta, bread and yams. These are also called complex carbohydrates as they are made up of many simple sugars joined together.
3. **Dietary fibre** – found in the cell walls of fruits, vegetables and cereals. This is also called a complex carbohydrate as it is made up of many simple sugars joined together.

Free sugars are **added sugars** such as sugar, syrup and honey, which are more harmful to your health. **Fruit sugars** are natural sugars in the cell walls of plants.

The main function of carbohydrates is to provide energy for the body.

Protein

Protein is one of the five nutrients, and is an essential part of your diet.

It is needed for growth, repair, maintenance and energy. Some groups of people need more protein than others. For example, children and pregnant women need more protein for growth, and everyone needs more protein after injury to repair the body.

What are proteins made from?

Proteins are made up of **amino acids**. These are linked together to make a chain (see the diagram below). There are about 20 amino acids. These amino acids make lots of different types of protein, depending on which amino acids are in the chain.

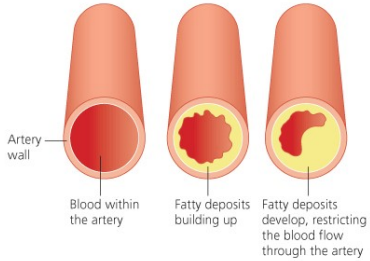
▲ A chain of amino acids

- Of these 20 amino acids, 10 are **essential amino acids** for children and 8 for adults. They need to be provided by your diet as the body can't make them.
- The two extra amino acids needed by children are for growth.

1.4 Macronutrients – fats and oils (lipids)

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.



▲ How fatty deposits build up in the blood vessels

Why is fat important in the diet?

- It keeps the body warm.
- It provides energy.
- It protects and cushions internal organs by covering them with fat.
- It provides **fat-soluble vitamins**.

Fats may be either:

- **animal fats** – butter, lard, suet, cream, hard cheese. Animal fats are usually **saturated**.

  OR
- **vegetable fats** – sunflower oil, olive oil, rape seed oil, nuts. Vegetable fats are usually **unsaturated**.

▲ Olive oil is liquid at room temperature

▲ Butter is solid at room temperature

Tasks:

1) Produce a range of flash cards using all the key words (underlined). Key word on one side and description on the other.
2) Create a variety of quiz question and answers using the website www.foodafactoflife.org.uk. The quiz should be on nutrients.
3) Create a mindmap on Carbohydrates. From the middle draw 3 spurs—sugar, starch and dietary fibre. Now list as many foods under each spur as possible.
4) Find a recipe for your favourite meal. Highlight all the different types of nutrient in the ingredients. Can you come up with a healthier alternative?

Computing Department Knowledge Organiser: Year 8 HTML

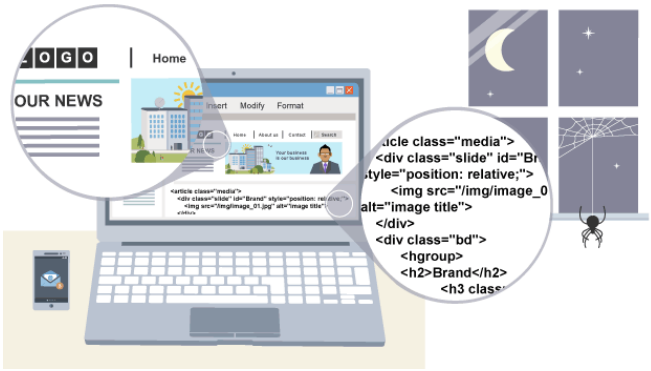
HTML - Using HTML to create websites

All web pages on the internet are created using a language called **Hypertext Markup Language** (HTML). HTML describes:

- what information appears on a webpage
- how it appears on the page (formatting)
- any links to other pages or sites

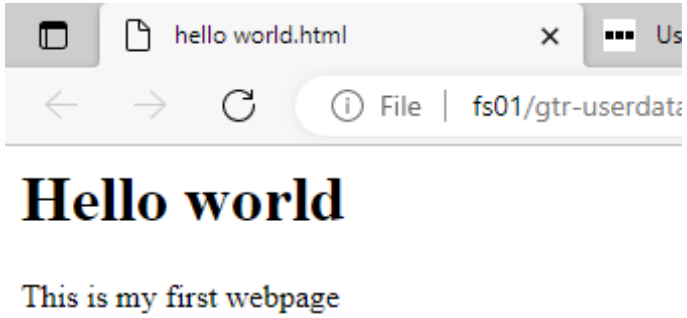
HTML can be written in specialist software, or in a simple text editor like Notepad.

As long as the document is saved with the file extension '.html' it can be opened and viewed as a webpage from a browser.



Use the QR code to read about the internet and HTML and complete the quiz.
What was your score: ...../10

Example webpage created in HTML



This example HTML code used to display the message on the webpage on your left:

```
<html>

<body>

<h1>Hello world</h1>

<p>This is my first webpage</p>

</body>

</html>
```

The code uses **tags** to describe the appearance of the information:

- `<html>` states that the document is a HTML document
- `<body>` states that the information appears in the body of the page
- `<h1>` states that the following text appears as a prominent heading
- `<p>` states that this is the beginning of a new paragraph

Computing Department Knowledge Organiser: Year 8 HTML

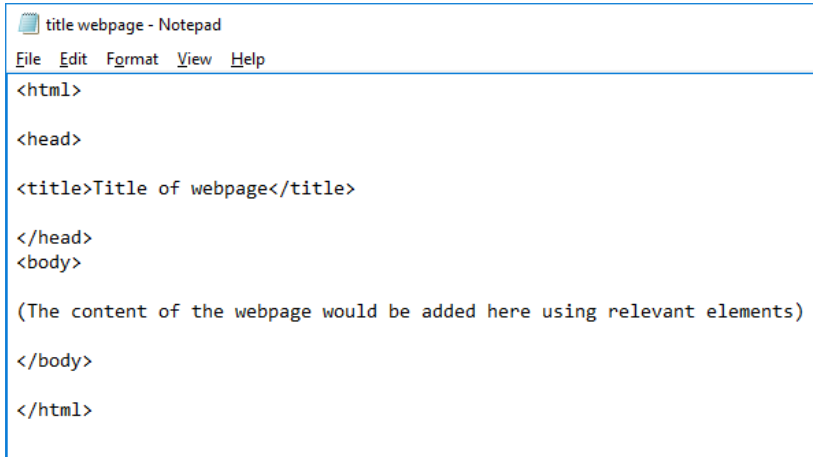
HTML – What are HTML tags?

What are HTML Tags?

- HTML tags help the browser to know how to display a web page to the user.
- You need to be familiar with how Hypertext Markup Language (HTML) is used to create web pages.

Tags start like `<tagname>` and usually end like this `</tagname>` although some can self-close.

Example webpage using the tags opposite in notepad:



There are **four critical tags** that are used to create webpages

`<html>...</html>`

The opening and closing tags of an HTML file. Tells the browser the rest of the document contains HTML tags.

`<head>...</head>`

These tags include all information about the page itself as well as links to JavaScript and CSS files. Metadata is entered here that can be indexed by search engines.

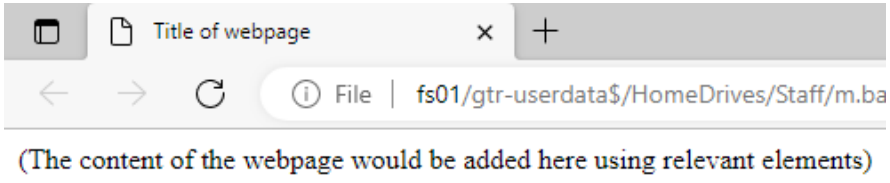
`<title>...</title>`

The text included between the opening and closing <title> and </title> tags is the title of the webpage. The title appears on browser tabs, as a page title. It is also what appears as the title of the webpage on search result pages.

`<body>...</body>`

Content within the <body>…</body> tags is the content that users will see on the page.

Example webpage using the HTML code on the left



Computing Department Knowledge Organiser: Year 8 HTML

HTML – What are other HTML tags can we use in a webpage?

Headings

Heading tags tell the browser to format the text within them in bold and a larger font size. This means that the text can then be used as a paragraph heading.

`<h1></h1>` tags produce the heading with the largest font size.

`<h6></h6>` tags produce the heading with the **smallest** font size.

h2, h3, h4 and h5 tags produce headings with font sizes in between h1 and h6.

Tags - Other tags you can use which tell the web browser how you want the page to be formatted:

Paragraphs - The `<p></p>` This tag makes the text one **paragraph**

Break `<br> </br>` This tag gives you a break between the text

Bold text `<b> </b>` This tag gives you bold text

Emphasise (italic text) `<em> </em>` This tag gives you italic text

Underline text `<u> </u>` This tag underlines your text

How to create a list on your webpage:
`<ul> </ul>` creates an unordered (bulleted) list
`<ol> </ol>` creates an ordered (numbered) list
`<li> </li>` adds an item to the list created
Here is an example of how you can create a **numbered list**:

```
<ol>
<li>insert text</li>
<li>insert text</li>
<li>insert text</li>
<li>insert text</li>
<li>insert text</li>
</ol>
```

Tasks:

1. **What does HTML stand for? Explain what HTML does.**

HTML Tag	What it does
<u></u>	
Can you research any other HTML tags and explain what they do?	

2. Complete this table in your home learning book:

3. **Write the HTML for a website about you or something you like. Try to include: a heading; some bold text; some underlined text; some text in italics; a background colour and an image. *Don't forget to close the HTML tags! </>***
4. **Draw what your web page will look like in a web browser.**

Gateacre Drama Departments: The Drama Maga-Scene

THE NEXT SCHEME OF LEARNING IS:

TITANIC

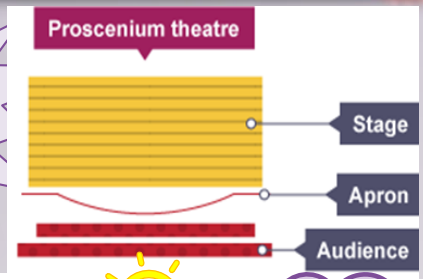
New Skill/Technique **Retrieval**

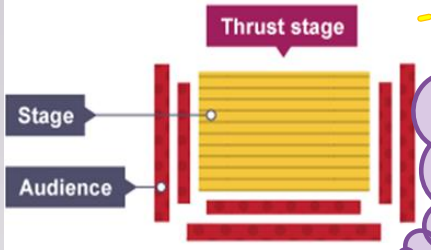
THEATRE ETIQUETTE

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

Knowledge/ skill	Definition
Stimuli	The starting point, idea or inspiration for your devised **drama**. It is what you base your **drama** around.
Sound design	The art and practice of creating sound tracks for a variety of needs in a performance.
Levels	Using different heights or levels onstage creates visual interest. It can also help to ensure that the audience see all of the action. Levels can be used to suggest status - meaning the power or authority one character has over another and can also be used to suggest various locations.
Mime	When an actor performs without the use of dialogue
Improvisation	A very spontaneous performance without specific or scripted preparation.
Placards	A printed or handwritten notice or sign used in a performance often to communicate a message to the audience.
Gait	The way an actor walks
Physical Theatre	Physical theatre is a well-known genre of theatrical performance that encompasses storytelling primarily through physical movement.
Role Play	Role play is the act of imitating the character and behaviour of someone who is different from yourself.
Debate	a formal discussion on a particular matter in a public meeting or legislative assembly, in which opposing arguments are put forward and which usually ends with a vote.
Narration	A commentary delivered to accompany a performance.
Flashback	A flashback is an interjected scene that takes the narrative back in time from the current point in the story.
Hot seating	A character is questioned by the group about his or her background, behaviour and motivation.
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.

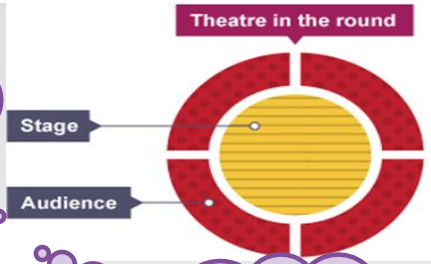
Stage Types

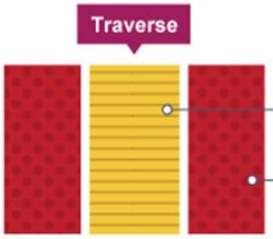




Task 1: Research Shakespeare's 'The Globe Theatre'.

Write down 3 interesting facts about it and share with your family!





Read this months Drama Maga-Scene

KEY PERFORMANCE TERMINOLOGY FOR THIS TERM:

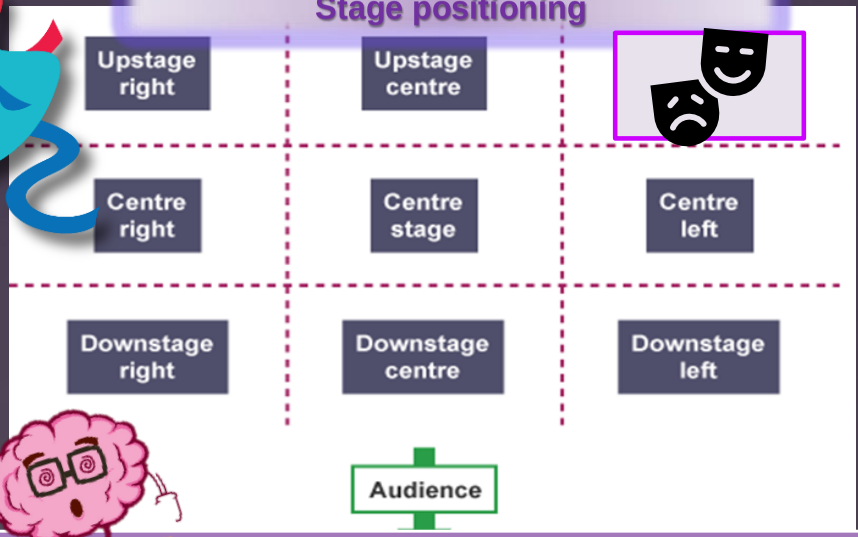
Physical Skills...(Skills that involve using your BODY)

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!

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?"

Stage positioning



Tasks

Week 2	Watch the two videos on the QR codes below and write down new information you have learnt!
Week 3	What stage position are our pesky drama faces covering? Create your own 'Stage Position Puzzle' and test your family!
Week 4	Write out the skills you have explored so far this term and try, by memory to describe what they are – using your KO only when you feel necessary!
Week 5	Description: A formal discussion on a particular matter in a public meeting or legislative assembly, in which opposing arguments are put forward and which usually ends with a vote. What is the skill?
Week 6	You have bagged yourself a 1st class ticket on the Titanic – write a monologue. How are you feeling? What do you expect? Why are you going to America?

Spanish - Key verbs and vocab

Key phrases

1. **Uso mi móvil para mandar SMS**– I use my phone to send messages.
2. **Siempre descargo aplicaciones**– I always download apps.
3. **Nunca saco fotos dado que es aburrido** – I never take photos because it's boring.
4. **A menudo escucho la música de Adele** –I often listen to Adele's music
5. **Me encanta el ritmo y canta bien** – I love the rhythm and she sings well.
6. **Ayer jugué juegos en mi móvil** – Yesterday I played games on my phone
7. **La semana pasada hice mis deberes** – Last week I did my homework
8. **Me encantan los concursos porque son divertidos** – I love gameshows because they are fun.
9. **Las películas de amor son estúpidas** – Romantic films are stupid
10. **Voy a ver más realitys porque son entretenidos** – I'm going to watch more reality shows because they're entertaining.

Normalmente **comparto mis vídeos favoritos** o **escucho Spotify** porque es **entretenido** pero ayer fui al cine con mis amigos. Vi una película de **guerra** y fue muy **impresionante** pero a veces me gusta ver las películas de **amor** pero son un poco **tontas**. Veo los **dibujos animados** cada día porque son **divertidos** y también me gusta escuchar la música. Prefiero la música de **Adele** porque **me encanta el ritmo** pero voy a escuchar más la música **clásica** porque **es relajante**.

Para ir más lejos: (To go further…)

Link to BBC Bitesize to test out your pronunciation.

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

Task 1: Practice key phrases 1-5 – look, cover, write, check, correct x 3. Read the sentences out loud to practice your pronunciation.

Task 2: Practice key phrases 6 -10 - look, cover, write, check, correct x3. Read the sentences out loud to practice your pronunciation.

Task 3: Pick one of the boxes of vocab from page 2 and draw a picture to represent each phrase in that box.

Task 4: Read through the model paragraph and translate what you can into English.

Task 5: Re-write the model paragraph, changing the underlined words and phrases. Try to do this without looking at the vocab!

Task 6: Create mind maps under the following headings: Activities, present tense and opinions. Do this from memory and then add to it with your red pen from the vocab page.

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

Spanish - Key verbs and vocab

El presente – Present tense

Chateo con mis amigos – I chat with my friends
Comparto mis vídeos favoritos – I share my favourite videos
Descargo melodías o aplicaciones – I download ringtones or apps
Hablo por Skype – I talk on Skype
Juego – I play
Leo mis SMS – I read my messages
Mando SMS – I send messages
Saco fotos – I take photos
Veo – I watch
Salgo con mis amigos – I go out with my friends
Voy al cine – I go to the cinema
Hago mis deberes – I do my homework

El pasado – Past tense

Chateé con mis amigos – I chatted with my friends
Compartí mis vídeos favoritos – I shared my favourite videos
Descargué melodías o aplicaciones – I downloaded ringtones or apps
Hablé por Skype – I talked on Skype
Jugué – I played
Leí mis SMS – I read my messages
Mandé SMS – I sent messages
Saqué fotos – I took photos
Vi – I watched
Salí con mis amigos – I went out with my friends
Fui al cine – I went to the cinema
Hice mis deberes – I did my homework

La televisión – TV

Un programa de deportes – a sports programme
Una comedia – a comedy
Un concurso – a gameshow
Un documental – a documentary
Un reality – a reality show
Una serie policíaca – a police series
Un dibujo animado – a cartoon
Una telenovela – a soap
El telediario – the news
Una película de terror – a horror film
Una película de amor – a love/romantic film
Una película de guerra – a war film
Una película de acción – an action film
Una película de ciencia-ficción – a sci-fi film

La música – music

Escucho de todo – I listen to everything
El rap - rap
El R 'n' B - RnB
El rock - rock
La música clásica - classical music
La música electrónica – electro music
La música pop – pop music
La música Latina – Latin music
La música de los años sesenta – 60s music

La letra – the lyrics
La melodía – the tune
El ritmo – the rhythm
…canta bien - …sings well

Las opiniones – opiniones

educativo – educational
gracioso - funny
informativo - informative
importante - important
inútil - pointless
interesante - interesting
estúpido/tonto – stupid/silly
útil - useful
entretenido - entertaining
pueril/infantil - childish
aburrido - boring
impresionante - impressive
bueno / malo – good/bad
emocionante – exciting

Year 8
William Shakespeare
Much Ado about Nothing

Structure and Form

Term	Definition
Prologue	An introductory section to a piece of literature or drama.
Rhyming couplet	Two lines of the same length that rhyme.
Soliloquy	A character speaking alone, voicing their thoughts out loud.
Aside	A comment made by a character, only to be heard by the audience.

Themes

Theme	Description
Deception	Both Don Pedro and Don John come up with schemes to **deceive** other characters; Don Pedro wants to make Beatrice and Benedick confess their love but Don John wants to destroy Hero's reputation and marriage to Claudio.
Gender	Beatrice is a non-typical Shakespearian woman as she is unmarried, whilst Hero conforms to typical **gender** roles as she is helpless and naïve.
Love	**Love** is seen in many forms throughout the play: Beatrice and Benedick eventually admit they **love** each other. Hero and Claudio fall in **love** at first sight and Leonato shows his fatherly **love** for his daughter and niece.

Character	Description
Beatrice	Leonato's strong and independent niece. Claims she dislikes men and is unmarried.
Benedick	Older companion of Don Pedro. A proud bachelor.
Hero	Leonato's sweet and innocent daughter. Falls in love with Claudio.
Claudio	Younger companion of Don Pedro who is often naïve and gullible. Falls in love with Hero.
Don Pedro	Prince of Arragon. Well liked and respected by everyone.
Don John	Don Pedro's illegitimate brother (know as "the bastard"). Causes most of the disruption in the play with his evil scheme.
Leonato	Governor of Messina. Hero's father and Beatrice's uncle. Has traditional values and can lose his temper.

Term	Definition
Simile	A comparison using the words 'like' or 'as' **Example:** *"He will hang upon him **like** a disease"*
Metaphor	A description saying something is something else **Example:** *"God help the noble Claudio, if he hath caught **the Benedick"***
Personification	Giving human qualities to something that us not human. **Example:** *"Four of his five **wits** went **halting** off"*
Dramatic irony	When the audience knows something that the characters do not. **Example: *The audience know that Claudio will shame Hero at the altar but she does not.***
Oxymoron	Two opposites used together to create an effect. **Example:** *"There is a kind of **merry war** betwixt Signior Benedick and her"*
Alliteration	A series of words that begin with the same letter for effect. **Example**: *"For a **h**awk, a **h**orse or a **h**usband."*
Hyperbole	Exaggerating something for emphasis or effect. **Example:** *"I would rather hear my dog bark at a crow than a man swear he loves me."*

Shakespeare - Much Ado about Nothing Home Learning Tasks

Week 1
Match the character to the description. The first one has been done for you.

Leonato		Don Pedro's brother
Hero		Leonato's niece, cousin of Hero
Claudio		Governor of Messina, father of Hero
Beatrice		Daughter of Leonato
Benedick		Prince of Aragon, returned from war
Don John		A friend of Don Pedro and Benedick
Don Pedro		Friend of Claudio, returned from war

Week 2
Plot summary

Summarise the plot in 10 bullet points.

Week 7
Language Techniques

Using the knowledge Organiser over the page, revise the examples of language techniques used in the play e.g. Simile, Metaphor, personification etc.

Week 3
Who am I?

Description	Character
'I am quite funny and clever. I have a love-hate relationship with one of the women in the play.'	
'I am very sweet and beautiful. I fall in love with a young soldier.'	
'I am a strong female character and I have a bit of a love-hate relationship with one of the male characters'	
'I am the governor of Messina and host of the party. I have a beautiful daughter.'	
'I am very brave soldier, but often led astray because I am young and naïve'.	

Week 7
Report it!

Write a police report for Borachio's involvement in the plot to stop the wedding of Claudio and Hero

OFFICIAL POLICE REPORT

Notes for the Reporting Officer: After exploring the scene of the crime and before speaking with Goldilocks, give complete details of what happened to aide in the investigation.

Who was involved? _____

What happened? _____

Where did the incident occur? _____

When did the incident happen? _____

Why do you think the accused did this? _____

How should he/she be punished? _____

Week 4
In their Shoes

Imagine you are one of the characters you met in Act 1. Pick one of the challenges below:

- Write a love letter from Claudio to Hero
- Write Don John's diary explaining how he feels about Don Pedro
- Write a soliloquy(see over page) for either Beatrice or Benedick to deliver to an audience, explaining how they feel about each other

Week 5
Shakesbook

Create a profile page for Shakesbook, a new social media platform. You could include:

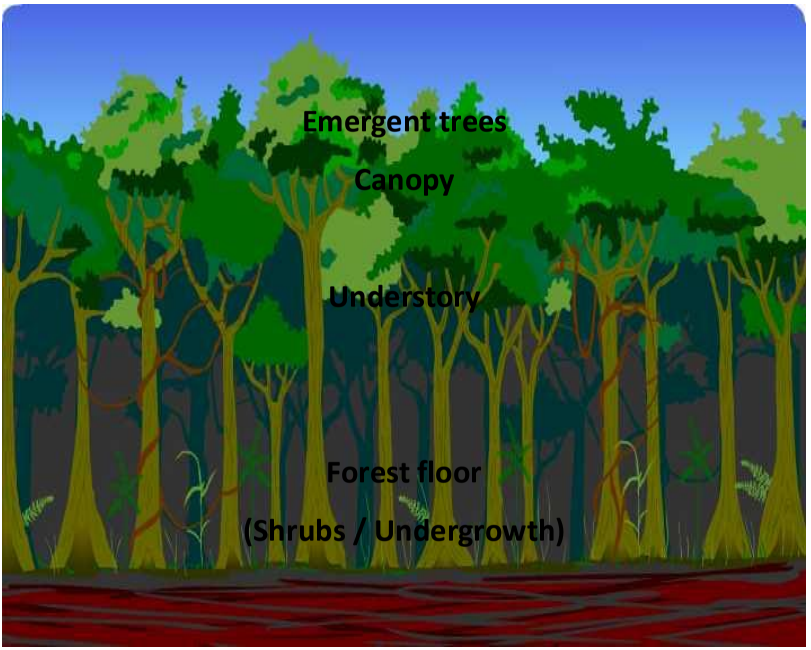
- List of friends/family
- Comment wall for friends/family to post
- A profile pic
- Your age
- Your relationship status
- Likes/dislikes
- Memes which reflect your personality

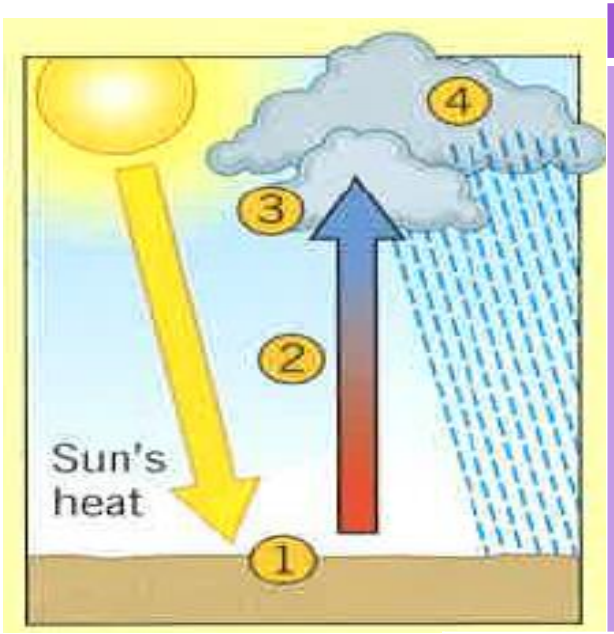
Week 6 Translator
Match the word to the meaning

Disdain	Politeness, manners
Courtesy	Traitor, defector
Turncoat	A worn out horse
Pernicious	Already decided or arranged
Predestinate	Someone who repeats others
Jade	Harmful, Poisonous
Parrot teacher	Contempt, Scorn

Rainforest structure- definitions

- **Emergent- 50m or taller. Usually supported by buttress roots.**
- **Canopy- A dense layer. Trees are 20-30m high. Many hardwood trees such as Mahogany.**
- **Understory-Dark and humid area containing saplings and shrubs.**
- **Forest floor- Covered with ferns and a deep layer of litter – fallen leaves and branches.**





Convectional rainfall

This precipitation is caused by very HOT WEATHER heating the ground:

1.Sun beats down.

2.The ground becomes very hot and heats the air above it.

3.The hot air rises = evaporates.

4.When it reaches the cool air up in the atmosphere it condenses to form clouds.

5.It rains – usually hard as this is a quick and intense process.

Services- a service or action that the biosphere provides for us e.g. the green lungs.

Year 8 Geography

Goods- things which the biosphere gives us (products) e.g. meat and fruit.

How the rainforest provides us with resources

- **Food-** Bananas, nuts, tea, coffee, palm oil. all originated in the rainforest.
- **Medicine-** Many types of medicine (more than 700) come from plants e.g. malaria (quinine). Heart conditions, diabetes, cancer (rosie periwinkle) etc.
- **Minerals-** Minerals such as gold and silver are found in rocks.
- **Materials-** Building materials such as wood- teak, mahogany.
- **Fuels-** Wood-can be burnt as a source of heat & energy.
- **Recreation-** Increasingly TRFs are exploited by travel companies bringing large groups of tourists. E.g. zip wires.

Tasks- if you complete all 5, revisit some or all from memory

Task 1: Revise the diagram of rainforest structure, then cover it and sketch the diagram from memory, (using a pencil) then self assess and add any of the layer names you have missed.
Task 2: Learn the definitions of the names of layers of the rainforest.
Task 3: Revise how the rainforest provides us with resources. Cover and then create a mind map of all the resources you can remember. Check back and add any you have missed in red pen.
Task 4: Learn the key terms for 'services' and 'goods' and then go back to your mind map from task 3 and then use 2 colours to highlight those things that are goods and those that are services. Don't forget to create a key.
Task 5: Create a flow diagram showing the 4 stages in convectional rainfall.

MORAL ISSUES

What are they?

A moral issue is one where there are many **different opinions** as to whether an action is right or wrong. In order to decide whether we should do it, people consider who they might help and who they might harm and then **weigh up the merits** of that action. Religious people will also look for **guidance in their holy books** and follow the **example of religious leaders**

SKILLS

- ✓ Consider two sides of an issue
- ✓ Understand religious teachings
- ✓ Share opinions respectfully

As we study think about…

What do religious teachings say about this?

How could I argue the other side?

What do I think about this?

What harm does this do?

How does this help people?

RELIGIOUS TEACHINGS

"Rule over the birds of the air and the fish of the sea"

GOD TO ADAM

"The Earth is green and beautiful and Allah has appointed you his stewards over it"

MUHAMMAD

"Do not kill"

THE 6TH COMMANDMENT

"Consider the work of God. Who can straighten what he has made crooked?"

THE BIBLE

KEY WORDS:

MORAL ISSUE	An issue that has no right or wrong answer, instead there is debate about the harm or help it brings	GENES	These contain our DNA which controls how we are genetically put together
POLLUTION	The damage that is being done to our environment	GENETIC ENGINEERING	Changing genes for a specific outcome
STEWARD	Someone who cares for the world and the things in it	'PLAYING GOD'	Doing something that is really God's job
KHALIFAH	The Muslim word for steward, given responsibility to care for the world from Allah	POVERTY	The state of being poor, without basics such as money, food, shelter etc.
DOMINION	Being in charge of something. Many religious people believe we have dominion over the environment	RIGHTS	The guaranteed expectations of every person. These are protected by law.

SOME TASKS FOR YOU TO COMPLETE

Draw a symbol for each key word

Create a mind map of one of the world issues. Add the two sides in a different colour

Create a key word quiz or flash cards

Write your answers to 3 reflection questions

Investigate a world issue. Remember to consider different views

Write a persuasive argument for a world issue

Rewrite the religious teachings in your own words

ISSUES IN OUR WORLD

GENETIC ENGINEERING

- We can grow better crops to feed people, which means less hunger and poverty
- But we cannot be sure of the impact of these changes, e.g. whether they will cause disease in the future
- Genetic engineering means we can cure diseases and stop people suffering, just like Jesus did.
- But maybe we don't have the right to be 'playing God' and interfering with nature
- We are being good stewards, using our brains and resources to make the world better
- But embryos (potential life) are wasted in order to achieve these improvements. Many believe this is killing.
- We can make our next generation healthier, cleverer and better looking
- But we are using our skills for trivial purposes and may be creating prejudice and discrimination

ANIMAL RIGHTS

- Animals have always been used by people to provide food, clothing, help with tasks and entertainment.
- But sometimes the use becomes abuse and animals are cruelly mistreated
- Animals are valuable in research. We can test products and drugs that keep people safe and cure diseases
- But why should animals suffer for the sake of human health and safety
- Animals are part of God's creation. He made them and gave us power over them.
- But we should care for them responsibly, not just treat them like tools. Hindus believe Brahman is in all living things
- Animal meat is a good source of protein and keeps us strong
- But we have other food available that doesn't need killing

THE ENVIRONMENT

- The world is a precious gift from God and we should look after it as stewards
- But God has given us dominion and we can use the resources when we need them
- The planet gives us food, medicine and everything we need to survive. We should share and protect our resources
- But business will be better and people will be richer if we use what we have
- Many, especially Jews, believe we need to pass on a good world to future generations
- But we need to make sure that people now have what they need before we worry about the future

POVERTY & HUMAN RIGHTS

The UN and the law guarantees human rights such as shelter, healthcare, education, family life etc.

- But sometimes people don't receive these because of bad governments, natural disasters, debt etc.
- As humans we want to treat people with dignity and equality and give them freedom
- But sometimes these are compromised for the sake of other needs (e.g. saving money, other priorities etc.)
- Charities like Christian Aid try to ensure basic needs are met for people around the world with:
  - emergency help (shelter, food, medicine, clean water)
  - long term help (schools, hospitals, orphanages, farming equipment etc.)
- But some people would like to see money spent on other things like support for the homeless or the NHS in the UK

ART KNOWLEDGE ORGANISER

Topic: Africa: Kente patterns and Clay

YEAR 8
Term 2 (January-March)
African Arts and Crafts

Context:

The value of African art is in its history. African art reflects the history and culture of Africa. It is not just an art form but also a representation of the people who created it. African art often uses bright colors, geometric designs, and a wide range of subjects. Abstract themes and depictions are common in the art. African art includes art in many different forms of Art such media as sculpture, painting, pottery, textiles, masks, rock art and jewelry. Traditional African Art is characterised by bold bright colours and intricate geometric designs and patterns.

There is a traditional story or legend about how Kente Cloth came to be. The story describes how two young men were inspired how by a spider who was weaving its web with delicate, intricate patterns in the moonlight. The spider offered to show the two young men how to weave the designs in return for favours and rewards. Kente is a beautiful cloth or textile which comes from West Africa. Weaving Kente Cloth is a cultural tradition of the Asante people of Ghana and these fabrics were originally used exclusively to dress royalty. Kente Cloth is no longer reserved for royalty. Anyone who wants and can afford Kente Cloth can have it. Kente Cloth is now used for clothing, bags, shoes and even home furnishings. Designers worldwide are inspired by this African textile tradition.

Pottery making and ceramics is a very ancient craft in Africa, as some of the oldest pottery remains known in the world were discovered on this continent. Once the clay had been made and shaped, the clay would dry in the sun. Once the clay was dry, it would be covered in wood bark and cooked outdoors on an open fire. In some African countries real Kilns would be used to cook and bake the clay. In most cases ceramics were made by women. Clay was worked on entirely by hand, shaped and designed into the required shape. To this day, clay pots and vessels are used to cook food, store water and grains.

Tasks to complete:

Week 1: AP1 revision: Create a mind map on the Arts and Crafts of Africa. Add your key literacy words and maybe some small drawings. Look for about 30 words on the page.

Week 2: Practice key literacy vocab 1-6 – look, cover, write, check, correct x 3. Read the sentences again and check for understanding.

Week 3: Practice key literacy vocab 6-11 - look, cover, write, check, correct x3. Read the sentences again and check for understanding.

Weeks 4/5: Watch the story of The Spider Weaver and the clip showing you how to create and make your own Kente inspired weave. Using bright paper create your own Kente Cloth inspired design in your Home Learning books.

Weeks 6/7: Watch the video which shows you how to create your own African inspired design using African motifs and geometric patterns. In your home learning book, design one of your own.

Weeks 8/9: Watch a story about artists Yinka Shonibare, Rachel Jones and Abbas Zahedi. How did they decide to become artists? What inspires them? Learn about their art in these short videos.

Weeks 10/11: Watch the video showing how to make vessels from clay. In your home learning book create a simple design for a clay vessel inspired by African ceramics. Decorate your design with African motifs and geometric patterns. Use the clay pot outline to help you and look up African patterns and designs to inspire your decoration.

Key Literacy Vocabulary:

1. **Kente Cloth:** Kente Cloth is made from thin strips about 4cm wide woven together on narrow looms, typically by men.
2. **Legend:** A traditional story with cultural significance.
3. **Weave:** To make fabric/cloth from long threads on a weaving loom.
4. **Composition:** This is the way that different elements in a piece of artwork are combined and arranged.
5. **Repeat Pattern**: The repetition of lines, shapes, tones, colours, textures to create a design.
6. **Geometric Patterns** – patterns containing shapes, objects or pictures that repeat themselves.
7. **Motif:** A recurring pattern or design that appears in a work of art.
8. **Symmetry**: An object or image has symmetry if it can be divided into two identical halves.
9. **Earth colours** – colours of the earth, for example, brown, brownish-reds, reds, yellow, green and orange. Pigments and colours created from the earth/plants/flowers.
10. **Border**: An ornamental/decorative design on the outer part or edge of something.
11. **Ceramics:** making objects from clay, then firing them at a high heat.

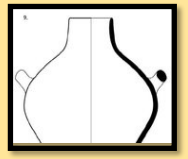
Weeks 4/5 – Scan this QR code to watch and listen to the story of the Spider Weaver and the legend of Kente Cloth.

Scan the QR code below and watch the clip showing you how to create your own Kente Cloth inspired weave. Find some bright paper and have a go

Weeks 6/7– scan this QR code to watch the video then create your own African inspired design with African motifs and patterns.

Weeks 8/9 – scan these QR codes to watch videos about Artists Yinka Shonibare, Rachel Jones and Abbas Zahedi to broaden your knowledge of Artists who have African heritage.

Weeks 10/11- Scan the QR code below to watch the video of West African pottery being made in Burkina Faso.



DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

Topic: Cam Toy Project

YEAR 8 DT

My Tool Box

Bench hook – Used to hold work in place when cutting

Coping Saw – Used to cut curves and internal shapes in wood.

Cordless drill – Used to drill and drive screws.

Tenon Saw – Used to cut straight lines in wood.

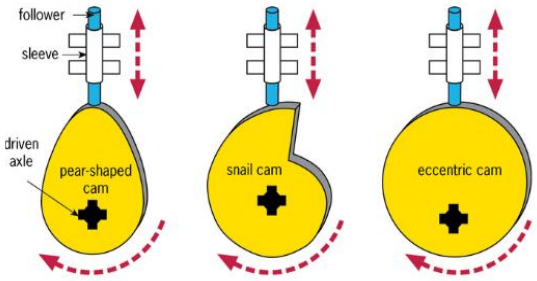
Marking Gauge – Used to mark out a parallel line on wood.

Quick Clamp – Used to clamp material

Cams and followers

A cam mechanism has two main parts:
- a cam- attached to a crankshaft, which rotates
- a follower – touches the cam and follows the shape, moving up and down

A CAM changes the input motion, which is usually rotary motion (a rotating motion), to a reciprocating motion of the follower. They are found in many machines and toys



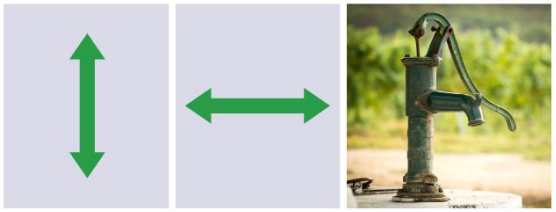
Types of Motion

Mechanical devices require motion. The four types of motion are:

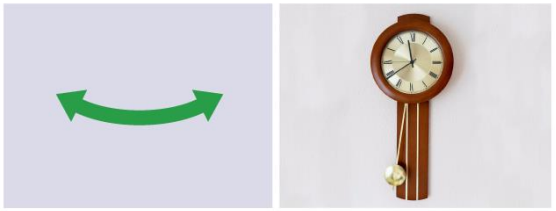
Linear motion moves something in a straight line, eg a train moving down a track:

Rotary motion is where something moves around an axis or pivot point, eg a wheel:

Reciprocating motion has a repeated up and down motion or back-and-forth motion, eg a piston or pump:



Oscillating motion has a curved backwards and forwards movement that swings on an axis or pivot point, eg a swing or a clock pendulum:



Key Terms

Linear Motion - this is movement in a straight line and in one direction. One of the best examples of this is a train / locomotive. When a train runs along a track, it is in a straight line and heading in one direction.

Rotary Motion – this is movement following a circular path, around a fixed point. A very good example of this is a bicycle wheel. The wheel rotates around a centre point.

Reciprocating motion - this is a repetitive movement left to right OR up and down. A good example of this type or motion is a piston, such as found in an engine.

Oscillating Motion – Oscillating motion occurs when an object swings left and then right (or vise-versa), from a fixed point. A very good example of this is a classic pendulum clock

Tasks

Task 1: Think of more examples of each type of motion.
Task 2: Draw the cam mechanism and learn the definition
Task 3: Create 6 questions that can be answered from the information on this knowledge organiser.
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 technical drawing:

More information about mechanical devices:

Week One

Read your knowledge organiser focusing on **Space** for 5 minutes. Turn to the page labelled **Space Key Questions.**

Cover the answers or cut the page out and fold down the middle line.

Answers questions 1 - 10 in full sentences.

Mark your own work using the answers.

Week Two

British Science Week!!

Turn to the information page about this years BSW which is themed 'Time' to find your activity for the week.

Week Three

Read your knowledge organiser focusing on **Space** for 5 minutes. Turn to the page labelled **Space Key Questions.**

Cover the answers or cut the page out and fold down the middle line.

Answers questions 11 - 20 in full sentences.

Mark your own work using the answers.

Week Four

Read your knowledge organiser focusing on **Space** for 5 minutes. Turn to the page labelled **Space Key Questions.**

Cover the answers or cut the page out and fold down the middle line.

Answers questions 21 - 30 in full sentences.

Mark your own work using the answers.

Week Five

Read your knowledge organiser focusing on **Adaptations & Inheritance** for 5 minutes. Turn to the page labelled **Adaptations & Inheritance Key Questions.**

Cover the answers or cut the page out and fold down the middle line.

Answers questions 1 - 12 in full sentences.

Mark your own work using the answers.

Week Six

Read your knowledge organiser focusing on **Adaptations & Inheritance** for 5 minutes. Turn to the page labelled **Adaptations & Inheritance Key Questions.**

Cover the answers or cut the page out and fold down the middle line.

Answers questions 13 - 24 in full sentences.

Mark your own work using the answers.

WE ARE USING

TASSOMAI

Have you completed your 4 daily goals?

Completion of your 4 daily goals this week will help progress! 😉

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!

8.5 – Space

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 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.

2. The Solar System

Smaller than some moons!

Hottest! (450°C)

Home!

6 rovers on here!

Largest!

Less dense than water!

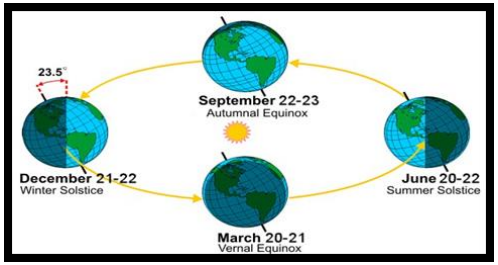
Spins on its side! (98° tilt)

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:

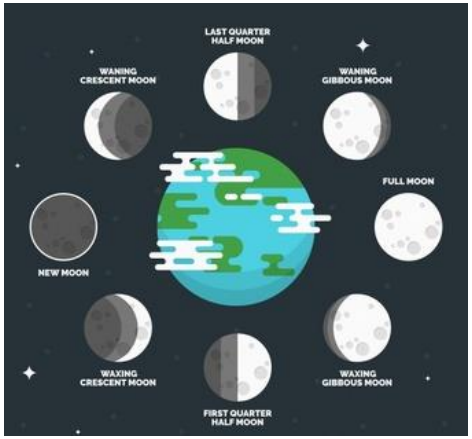


4. The Moon

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.



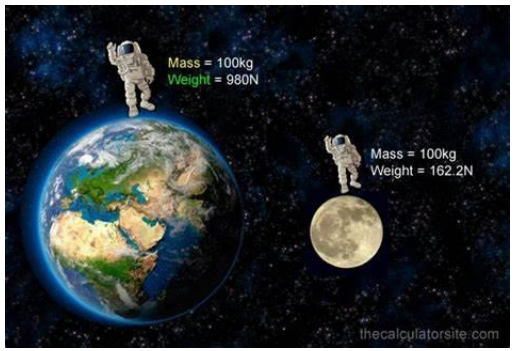
5. Gravitational Field Strength

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 9.8 N/kg.



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):

Weight = mass x gravitational field strength
(N) (kg) (N/kg)

E - W = m x g
V - m = 65 kg g = 10 N/kg
E - W = 65 x 10
R - W = 650
Y - W = 650 N/kg

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.

Space – Key Questions

Questions

1. What is a planet?
2. What is a star?
3. What is a moon?
4. What is an orbit?
5. What do we call our sun and the planets / objects in orbit around it?
6. What do we call a family of 100's of billions of stars gravitationally bound together?
7. What is our galaxy called?
8. What do we call everything in existence?
9. Name the 8 planets in our solar system.
10. Define a day, including its length.
11. Define a year, including its length.
12. By how many degrees is the Earth tilted on its axis?
13. The Earth can be thought of a sphere. What do we call one half of this sphere?
14. Why do we experience differing intensities of sunlight throughout the year?
15. Why are daytimes shorter in the northern hemisphere during the winter?
16. Why are daytimes longer in the northern hemisphere during the summer?
17. Why are daytimes and night times equal in duration during the middle of autumn and spring?
18. What do we call the different appearences the moon takes during its orbit?
19. How long does it take for the Moon to go through all of its phases?
20. What was the Big Bang?
21. What is a Black Hole?
22. What is a Nebula?
23. What is weight?
24. What is mass?
25. What is the value of g at the surface of the Earth?
26. State the equation that links weight, mass, and gravitational field strength.
27. What is weight?
28. What is mass?
29. What is the value of "g" at the surface of the Earth?
30. State the equation that links weight, mass, and gravitational field strength.

Answers

1. A planet is a spherical body that orbits a star, clearing its orbit of any other objects.
2. A star is a hot sphere of plasma, made mostly of Hydrogen.
3. A moon is a natural satellite that orbits a planet.
4. An orbit is a regular, repeating path that one object in space takes around another one.
5. Our sun and the objects orbiting it are known as the Solar System.
6. A family of 100's of billions of stars gravitationally bound together is known as a galaxy.
7. Our galaxy is celled the Milky Way.
8. Everything in existence is known as the Universe.
9. The 8 planets in our solar system are called: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.
10. A day is the time it takes for the Earth to rotate on its axis once, this takes approximately 24 hours.
11. A day is the time it takes for the Earth to orbit the sun, this takes approximately 365.25 days (1 year).
12. The Earth is tilted by 23.5 degrees on its axis.
13. Half of a sphere is known as a hemisphere.
14. Light hits the Earth's surface at different angles throughout the year. The more directly the light hits the surface, the higher the light intensity.
15. The northern hemisphere is tilted away from the sun in the winter, so less time is spent in sunlight and the days are shorter.
16. The northern hemisphere is tilted towards the sun in the winter, so more time is spent in sunlight and the days are longer.
17. The Earth is tilted at right angles to the sun in the middle of autumn and spring, so an equal amount of time (12 hours) is spent in day and night.
18. The moon's differing appearances are called phases.
19. The Moon takes approximately 28 days to go through all of its phases.
20. The Big Bang was an energetic event that occurred at the start of our Universes existence,
21. A Black hole is the final stage of the life of the largest stars. Its gravity is so strong nothing can escape it.
22. A Nebula is a huge clouds of gas in which stars are formed.
23. Weight is the force that acts on an object's mass due to gravity
24. Mass is a measure of how difficult it is to change the motion of an object.
25. Gravity (gravitational field strength) has a value of 9.8 N/kg on the Earth's surface.
26. Weight = mass x gravitational field strength
27. Weight is the force that acts on an object's mass due to gravity
28. Mass is a measure of how difficult it is to change the motion of an object.
29. Gravity (gravitational field strength) has a value of 9.8 N/kg on the Earth's surface.
30. Weight = mass x gravitational field strength

8.6 – Adaptations & Inheritance

What do I need to be able to do?

- Understand inheritance as the process by which genetic information is transmitted from one generation to the next
- Describe a simple model of chromosomes, genes and DNA in inheritance, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model
- Describe differences between species
- Describe the variation between individuals of the same species being continuous or discontinuous
- Understand the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection
- Understand that changes in environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which may lead to extinction
- Understand the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material.
- Produce measurements and graphical representation of continuous or discontinuous variation

1. Competition

In a habitat there is a limited supply of resources. To survive, animals **compete** to get enough of these resources.

Animals compete for:

- Food
- Water
- Space/territory
- Mates – to reproduce

Plants compete for:

- Light
- Water
- Mineral ions
- Space

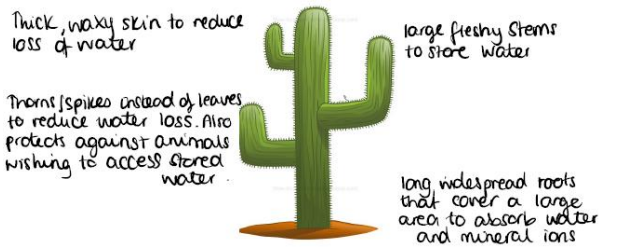
Remember – plants do not compete for food because they make their own glucose via photosynthesis.

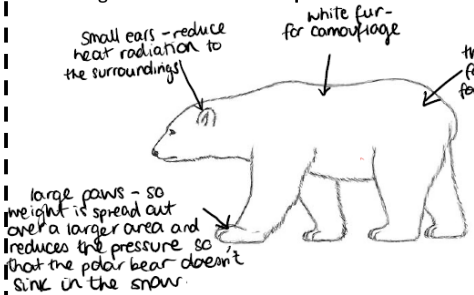
2. Adaptations

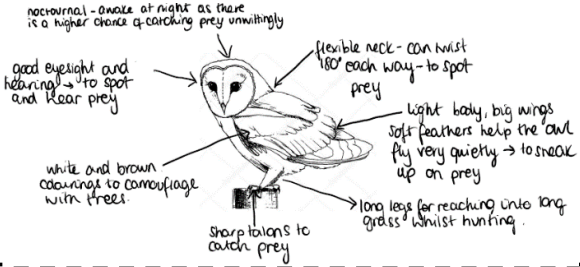
Animals need to be the best competitors for resources to make sure they survive.

Some animals have good eyesight or hearing which make it easier to spot their prey.

The features that enable an organism to compete better for resources than other organisms are called **adaptations**







3. Variation: Inherited & Environmental

Variation is the difference in characteristics. There is lots of variation between organisms of the same species. *e.g. humans have different heights, eye colour, hair colour, blood group etc*

Variation can either be:

Inherited – a result of genes inherited from parents *e.g. natural hair colour, eye colour, blood group, presence of dimples*

Environmental – as a result of differences in surroundings, or choices that the individual makes. *e.g. scars, tattoos, language spoken, accent*

This accounts for the differences observed in identical (genetically) twins.

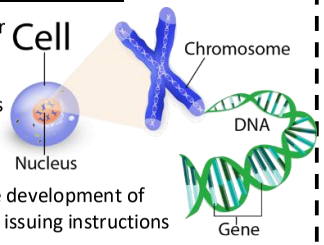
Or…as a result of **both inherited and environmental** factors

e.g. height – you inherit genes for your height from your parents, but it is also largely influences by your diet.

Similarly, with weight, intelligence etc

4. Inheritance

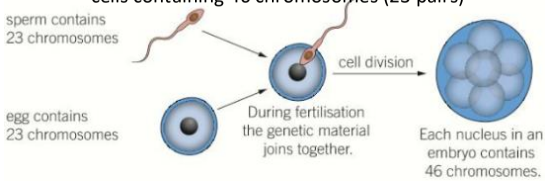
The genetic information for each organism is stored as a chemical, DNA, in the nucleus of cells. The DNA is tightly wound into chromosomes.



Different genes control the development of different characteristics by issuing instructions to the cell.

One gene contains the instructions for making one protein. Several genes work together to form a single characteristic, *e.g. eye colour.*

Egg and sperm cells are the only cells to contain **23 chromosomes**. They only have one copy of each chromosome. During **fertilisation, the nuclei of the egg and sperm cells fuse together.** The chromosomes pair up producing an embryo with cells containing 46 chromosomes (23 pairs)



5. Natural Selection

Scientists have shown that the species we see on Earth today have gradually changed over millions of years. This is called **evolution.** The fossil records provides evidence of species that are extinct e.g. dinosaurs

Organisms evolve through a process called natural selection

- Organisms within a species show variation – this is due to differences in their genes.
- Some organisms with characteristics that make them better adapted to their environment survive more and the less adapted organisms die. This is survival of the fittest
- The organisms that are better adapted reproduce and pass on their genes for the adaptations to their offspring.
- The offspring now also show these characteristics that make them better adapted
- This process is repeated many times. The species changes so much that a new species if formed. This is evolution

6. Extinction

Species become extinct when there are no longer any living individuals of that species.

Factors that lead to extinction:

- Change to their environment e.g. lack of resources
- Destruction of habitat
- Outbreak of a new disease
- Increased predation
- Increased competition

Scientists are trying to prevent endangered species from becoming extinct and also maintain **biodiversity**

One way is by using **gene banks**. Samples of the endangered species (e.g. plant cuttings and sex cells of animals) are stored so that their DNA can be used in the future to create new individuals

Adaptations & Inheritance – Key Questions

Questions

1. Define the term 'adaptation'
2. State 3 factors that animals compete for
3. State 3 factors that plants compete for
4. Describe 3 simple adaptations for a polar bear
5. Why are smaller ears beneficial to a polar bear?
6. Why is a hump beneficial to a camel?
7. What is the definition of the word 'predator' ?
8. Identify two examples of genetic variation
9. Explain how genetic variation is caused
10. Identify two examples of variation caused by both genetic and environmental
11. Explain why height may be seen as environmental variation
12. Compare environmental and genetic variation
13. Define the word 'variation'
14. Compare continuous and discontinuous/categoric data
15. What type of graph would you use for continuous data and why?
16. A student has drawn a bar chart - what type of variation is this best for showing?
17. What is an ecosystem?
18. How do plants adapt to survive a water scarce environment?
19. How do predators affect the population of their prey?
20. How do seasons affect animal behavior?
21. How does a combination of genetic and environmental factors lead to variation in a species?
22. How can a bar chart be used to display categoric variation data?
23. What does the human genome contain?
24. How many chromosomes are typically present in a human cell?

Answers

1. An adaptation is a physical or behavioral trait that has evolved in a species over time to increase its chances of survival and reproduction in its environment.
2. Animals compete for food, territory, and mates.
3. Plants compete for sunlight, water, and nutrients in the soil.
4. Polar bears have white fur for camouflage in the snow, a layer of blubber for insulation against the cold, and large paws to reduce force on the ice.
5. Smaller ears are beneficial to a polar bear because they reduce heat loss, as there is a smaller surface area.
6. A hump is beneficial to a camel as it stores fat, which can be used as a source of energy and water when resources are scarce in their desert habitat.
7. A predator is an organism that hunts and feeds on prey.
8. Two examples of genetic variation could be eye color and blood type.
9. Genetic variation is caused by differences in an organisms DNA.
10. Height and body weight can both be influenced by a combination of genetic factors (such as genes inherited from parents) and environmental factors (like diet and exercise).
11. Height is considered an environmental variation because, while genetics sets the potential height an individual can reach, environmental factors like nutrition and health can determine whether the individual reaches this potential.
12. Genetic variation is due to differences in the genes inherited from parents, while environmental variation is due to external factors like diet, lifestyle, and climate. Genetic variation remains constant throughout an individual's life, but environmental variation can change.
13. Variation refers to the differences between individuals within a species.
14. Continuous data can take any value within a range (like height or weight), whereas discontinuous/categoric data falls into distinct categories (like blood type or eye color).
15. A scatter graph is used for continuous data.
16. A bar chart is best for showing discontinuous or categoric variation.
17. An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment
18. Plants in water-scarce environments, like cacti, adapt by having thick, waxy skin to prevent water loss, and deep roots to absorb as much water as possible.
19. Predators affect the population of their prey by reducing their numbers. This can lead to a decline in the prey population if predation rates are high.
20. Some animals hibernate during the winter, while others migrate to warmer areas. Many species also have specific breeding seasons.
21. A combination of genetic and environmental factors can lead to variation by creating different physical traits or behaviors. For example, genetics may determine the potential height of a person, but nutrition (an environmental factor) will influence whether they reach that potential.
22. A bar chart can display categoric variation data by creating bars for each category, with the height or length of the bar representing the quantity of data in that category.
23. The human genome contains the complete set of genetic information for humans. It includes all the information needed to build and maintain a human being.
24. Most human cells have 46 chromosomes arranged in 23 pairs.

BRITISH SCIENCE WEEK

The theme this year for British Science Week is 'Time!' It's the 30th anniversary of British Science Week – we want you to celebrate this huge milestone with us, thinking about time since the Week began, and looking to the future!

The theme this year is **'Time'**, – there are loads of STEM topics to be explored! Students could create a poster showing how a certain type of technology has changed over time, or even the advancement of time-telling technology itself. Budding poster makers could also go futuristic show us how they think the world might look in years to come, or perhaps look at nature – lifecycles, lifespans, evolution and hibernation – nature is full of timely topics.

Your task this week is to create an A4 poster about TIME.
Posters should be bright and colourful!!

You are welcome to join Miss. Robinson in C505 after school on Wednesday to use pencils and coloured paper to create your masterpiece.

The Science department will be sending the 5 best posters to a national competition where you could win a prize!!!

Skill terms	Definitions
Down	An attempt to at play period of time that begins when the ball is snapped by the centre until the ball becomes dead.
Touchdown	When a team runs with, or catches the ball in the opponent's endzone.
Conversion	Points awarded after a touchdown when a team attempts to run or pass the ball into the endzone.
Handoff	When the QB hands the ball to another player after the snap.
Snap	A pass round the side or backwards through the legs of the Centre, which begins the game.
Line of Scrimmage (LoS)	An imaginary line across the width of the field of play beyond which a team cannot pass until the next play has begun. Play begins with a snap on this imaginary line with the ball in the middle of the field.
Safety	When an offensive player is tackled in their own endzone. (Please note, the word 'safety' is also used to refer to a particular defensive position.)
Offside	Movement of an offensive player on the LoS before the ball has been snapped or a defensive player crossing the LoS.

How to play

The aim of the game is to score more touchdowns than the opposition. A touchdown is scored when a player runs with the ball or catches it in the opponent's endzone (it does not need to be touched to the ground). The opposing team try to 'tackle' offensive players (pull their flags) which results in the game being stopped. The opposition gain possession if they pull a flag, or if the attacking team do not score a touchdown from four downs (plays or attempts).

Flag NFL

Offence

The offence has **4 downs** (attempts) to move the ball into the defenders' half of the field or to score a touchdown.

- The offensive team is awarded another set of 4 downs if the ball crosses the halfway line.
- The ball-carrier is 'tackled' if one flag is pulled.
- Play starts when the centre 'snaps' the ball to the QB. This means that, in one fluid motion from the ground, the centre snaps the ball through their legs to the QB standing 2 yards behind them. This must be done within 30 seconds of placing, or spotting, the ball in position for play to begin.
- Offensive players are not permitted to start their run down the field until the ball has been snapped. If they do, a false start is declared.
- The ball can only be thrown forward once on any down by a player who must be behind the **Line of Scrimmage (LoS)**. This is an imaginary line across the width of the field beyond which the teams cannot pass until the next play has begun.
- If a player catches a forward pass they cannot pass it on to another team member. They must run with it.
- A player cannot pick up and run with a ball that has hit the ground. The play is whistled 'dead' and the next play will begin from the last point of possession before the ball was dropped.
- The ball-carrier cannot push the defender's hand away from the flag or hold onto the opponent's flag to stop it being pulled. This is called 'flag guarding' and results in a penalty

Flag NFL

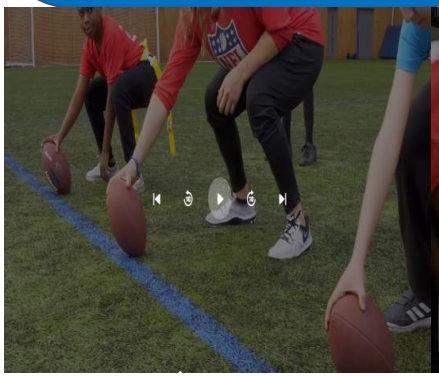
Snap

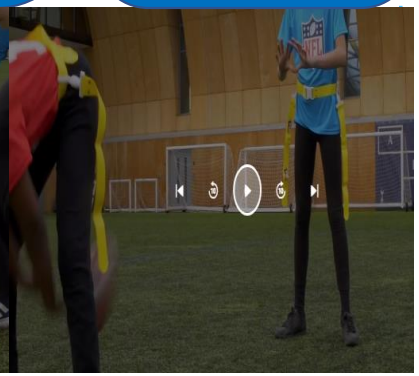
This is how to start the game. The snap is performed by the centre.

The centre starts with the ball and holds it in 1 hand with the ball on an angle

The teammate behind you is known as the quarter back and they will give the commands "ready, down, set, HUT!"

On "HUT" the centre throws the ball backwards between their legs to the quarter back who should receive the ball around their chest height (image 2)





Components of fitness in Flag NFL

- Speed
- Power
- Agility
- Reaction time
- Flexibility
- Co-ordination
- Cardiovascular endurance

Defence

Defenders try to stop the offensive team advancing the ball or scoring by:

- Intercepting (catching) the ball when it is in flight and catching it. If a defender intercepts the ball they can try to run it back to the opposing team's endzone for a touchdown.
- Hitting the ball away from the intended receiver while it is in flight.
- Pulling a flag from the receiver after the ball has been caught (Defenders can only pull flags from offensive players if they have possession of the ball).
- Pulling a flag from the RB as soon as a handoff is made. (Once the ball has been handed off, all defensive players can cross the LoS. This includes in the event of a fake hand-off or a 'play-action').
- If the ball doesn't cross the halfway line in 4 downs or there is no score the ball is handed to the opposing team. The offensive team takes possession from their own 5-yard line.
- Flag Football is a non-contact sport. No one can physically stop anyone running down the field of play or catching/ intercepting passes.

Task 1:

1) What is the name for the player who snaps the ball?
2) What are the 4 command words before snapping the ball?
3) What is the name of the player who receives the ball?
4) Where should the ball be received on the body

Task 2

On page 1
Cover up all the definitions but copy out all the skill terms and definitions and see how many definitions you can remember

Repeat this task more than once to try improve your score

Task 3

1) How is a touchdown scored?
2) What do defenders need to pull to tackle?
3) After 4 downs, what part of the field do the attacking team need to be at?

Task 4

Look at the Flag NFL playing field for no longer than 2 minutes.
Now based off memory, draw the Flag NFL playing field including all the details. The details should include all the distances in yards for each area and the names of that area.

Bonus stretch and challenge
Can you list the point systems for the areas on the playing field.

Answers Task 1

1) The centre
2) ready, set, down, HUT
3) quarterback
4) Around chest height

Answers Task 2

1) Uncover the definitions to see how many you got correct

Answers Task 3

1) when a player runs with the ball or catches it in the opponent's endzone
2) Pull the flag
3) Either half way line or endzone

Answers Task 4

Look back over the playing field on page 1.

Bonus stretch and challenge
6 point for the end zone
1 point for no run zone to endzone (after the touchdown)
2 points for 20 yards to endzone (after the touchdown)

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Learning to Learn

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The 'Listen' Project #1