

KNOWLEDGE ORGANISER



Summer Term 2024
Year 9



Name: _____ **Form:** _____

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How to use your Knowledge Organiser for Home Learning

- Knowledge Banks contain core knowledge that you must know
- It will help you retrieve what you learn in lessons so that you remember it in the long term
- You will use your Knowledge Bank to aid your home learning

For homework:

- You will need to create a home learning timetable so you can organise which subject you do on which days
- You will be asked to use a specific section of your Knowledge Bank to aid home learning
- Your home learning will involve retrieval (prior learning) and flipped learning (research-based task for topics not yet learnt)
- The length of home learning will be different depending on your subject, this information is in a different document
- You must write the subject and date in your homework book - if using
- You need to underline the subject and title as per lessons
- There will be rewards for excellent work and sanctions for work not complete
- your home learning will be set every Monday on ClassCharts
- Your homework will be set **every Monday** on Class Charts
- Completing your home learning is **YOUR** responsibility



Home Learning – Year 9 Summer Term

SUBJECT	HOME LEARNING TIME (12 weeks)	HOME LEARNING ACTIVITIES	WHERE TO COMPLETE e.g. home learning books, google classroom, subject home learning books, Seneca	HOW IT WILL BE MARKED
English	30 mins per week	Sparx Reader - students will read for at least 30 minutes per week Research task linked to SOW set at the beginning of the term	Sparx website	Students must accrue a certain number of points each week
Maths	30 mins per week	Retrieval: Pupils will recall work completed that week, plus other work in the year in consolidations tasks Flipped learning: Pupils will build on, extend work currently completed. This will feed into 'insights' given back to the teacher to feed into starter tasks	Sparx website	On the website
Science	30 mins per week	SENECA revision on topics taught that week, set by class teacher	On SENECA	Marked by SENECA and viewed for misconceptions by class teacher for Closing the gap
Geography	30 minutes per week	Retrieval activities based on the knowledge organiser. Flipped learning in the form of independent research. Revision will be set before mid and end of cycle assessments.	Geography: Complete on paper or shared as a Google doc / emailed to class teacher. Set on Class charts.	Through 5 a day, visual checks and questioning.
History	20/30 Minutes per fortnight (Set on Week B due on Week B)	Research tasks to find out about events happening during the same time period but elsewhere in the world. Retrieval to make connections to in class work.	Complete on paper / HW booklet. Template posted on Class Charts.	Homework handed in, checked & praise points awarded.

French/Spanish	20 minutes per week	Vocab learning based on a particular section of their Knowledge Organiser	Knowledge of learned vocab assessed in class	Corrected in class and PP added during the week
Art	1 hour per home learning, 3 hours total a term.	Home learning will consist of practical tasks focusing on retrieval and flipped knowledge linked to the project theme. Revision strategies will be included in home learning to support assessments.	To be completed on paper and work will be added to students' portfolios.	Home learning will be collected on the deadline by the class teacher, stamped and praise points awarded.
Ethics	30 minutes per half term	Seneca Learning	Class teacher	Through the Seneca platform
Drama	25 mins per homework	Every 3 weeks Retrieval: Students to complete activities based topics they have already learnt. Flipped Learning: Students to research new information for the next lessons and watch video examples	To be completed via Word Wall , google forms & Google Classroom	Self marking via google forms or word wall. Praise points awarded
Music	30 mins per 6 weeks (2x 15 mins per 6 weeks)	Google Form with retrieval listening activity for current topic, and flipped learning research activity for future topic.	Set on ClassCharts, completed on Google Forms	Marked on Google Forms
Food	20 mins per week	Pupils complete activities/worksheets based on topics learnt in class that week. Flipped learning: Pupils will research new information for the upcoming lesson to build on in class.	ClassCharts	Collected and marked by class teacher. Praise Points awarded
Computer Science	20/30 Minutes per fortnight (Set on Week A due on Week A)	Retrieval practice to define key terminology and showcasing understanding of key programming skills.	Completed on Google classroom or on paper.	Homework handed in, checked & praise points awarded.

ENGLISH

Year 9 English Summer : Poetry – Theme of Journeys

Poem and poet	Types of journeys	Key quotations
'Wherever I Hang' Grace Nichols	<ul style="list-style-type: none"> Physical from Guyana to England Spiritual reflection of the changes she has made in her viewpoints 	<ol style="list-style-type: none"> 'I leave me people, me land, me home / For reasons I not too sure' 'And de people pouring from de underground system / Like beans' 'I don't know really where I belong'
'The Night Mail' W. H. Auden	<ul style="list-style-type: none"> The journey of letters across the country 	<ol style="list-style-type: none"> 'This is the Night Mail crossing the border, / Bringing the cheque and the postal order' 'All Scotland waits for her: / In the dark glens, beside the pale-green sea lochs / Men long for news' 'For who can bear to feel himself forgotten?'
'Swing Low Sweet Chariot' Wallace Willis	<ul style="list-style-type: none"> The journey of slaves to freedom The journey of Christians to heaven 	<ol style="list-style-type: none"> 'Swing low, sweet chariot, Coming for to carry me home' 'Tell all my friends I'm coming too, Coming for to carry me home.' 'But still me soul feels heavenly bound'
'The Canterbury Tales' Geoffrey Chaucer	<ul style="list-style-type: none"> Pilgrimage to Canterbury From the city to the countryside 	<ol style="list-style-type: none"> 'pilgrims were they all / That toward Canterbury would ride' 'When April with his showers sweet with fruit / The drought of March has pierced unto the root' 'Of England they to Canterbury wend'
'Telling Tales' Patience Agbabi	<ul style="list-style-type: none"> Pilgrimage to Canterbury The journey of language evolving over time 	<ol style="list-style-type: none"> 'On this Routemaster bus: get cerebral/Tabard Inn to Canterbury Cathedral' from the grime to the clean-cut iambic./rime royale, rant or rap, get your slam kick 'Chaucer Tales, track by track, here's the remix'
'Paradise Lost' John Milton	<ul style="list-style-type: none"> The journey of Satan to hell 	<ol style="list-style-type: none"> 'Of Man's First Disobedience, and the Fruit / Of that Forbidden Tree' 'Who first seduc'd them to that foul revolt?' 'Him the Almighty Power / Hurld headlong flaming from th'Ethereal Skie'
'The Road Not Taken' Robert Frost	<ul style="list-style-type: none"> Reflecting on the journey taken between two roads The journey as a metaphor for a decision 	<ol style="list-style-type: none"> 'I took the one less travelled by, / And that has made all the difference' 'And both that morning equally lay' 'I shall be telling this with a sign / Somewhere ages and ages hence'
'My Father Thought It' Simon Armitage	<ul style="list-style-type: none"> The journey of growing up 	<ol style="list-style-type: none"> 'My father thought it bloody queer / the day I rolled home with a ring of silver in my ear' 'the hole became a sore, became a wound, and wept' 'At twenty-nine, it comes as no surprise to hear / my own voice breaking like a tear'
'Gap Year' Jackie Kay	<ul style="list-style-type: none"> The journey of motherhood The journey of a child growing up 	<ol style="list-style-type: none"> 'I remember your Moses basket before you were born' 'A flip and a skip ago, you were dreaming in your basket' 'I have a son out in the big wide world'



Year 9 knowledge bank

MATHS

For Maths, all students use Sparx for homework. However, it also uses codes (see third column) which give help videos to supports the students at home.

For the topics we study in any lesson (column 2), there are help videos linked. This will explain the essential knowledge (this is often called core knowledge in schools).

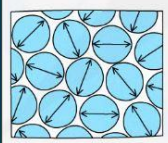
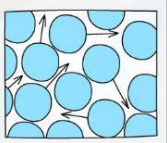
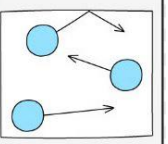
To access the help videos, type the code into the independent learning section of Sparx.

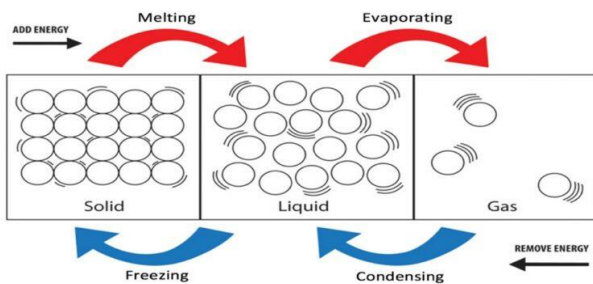
Summer Term

<p>Pythagoras' theorem</p> <p>Squares & square roots (R) Identify the hypotenuse of a right-angled triangle. Calculate the hypotenuse of a right-angled triangle. Calculate missing sides in right-angled triangles</p> <p>Linked Sparx Clips:</p> <p>U385</p>	<p>Enlargement & similarity</p> <p>Recognise enlargement & similarity. Enlarge a shape by a positive integer scale factor.</p> <p>Linked Sparx Clips: U519 U134 U578</p>	<p>Solving ratio & proportion problems</p> <p>Solve problems with direct proportion (R) Direct proportion & conversion graphs (R) Solve 'best buys' problems. Solve ratio problems given the whole or a part (R)</p> <p>Linked Sparx Clips:</p> <p>U721 U357 U238 U676</p>
<p>Rates</p> <p>Solve speed, distance & time problems without a calculator. Rates of change & their units Solve speed, distance & time problems with a calculator.</p> <p>Linked Sparx Clips:</p> <p>U151 U403 U910 U842 U896 U256</p>	<p>Probability</p> <p>Single event probability (R) Use diagrams to work out probabilities. Relative frequency Expected outcomes. Independent events</p> <p>Linked Sparx Clips:</p> <p>U408 U246 U699 U580 U558 U166 U729 U806</p>	<p>Algebraic representation</p> <p>Recognise different types of special case graphs. Draw and read simple quadratic graphs given a table of values</p> <p>Linked Sparx Clips:</p> <p>U989 U667 U593 U836 U747</p>

Year 9 Science Knowledge Bank - Summer Term (Chemistry)

States of matter

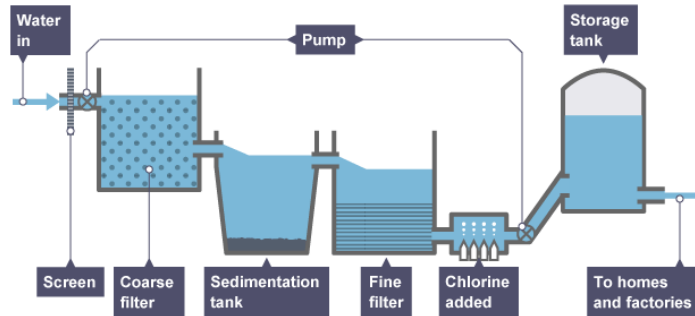
State	Solid	Liquid	Gas
Density	High	Medium	Low
Arrangement of particles	Regular pattern	Randomly arranged	Randomly arranged
Movement of particles	Vibrate around a fixed position	Move around each other	Move quickly in all directions
Energy of particles	Low energy	Greater energy	Highest energy
2D diagram			



Global warming

Global warming is the increase in average temperatures of the earth's atmosphere through the greenhouse effect which is caused by increases in pollutants such as carbon dioxide

Potable and waste water



Water for drinking goes through a 4 stage process

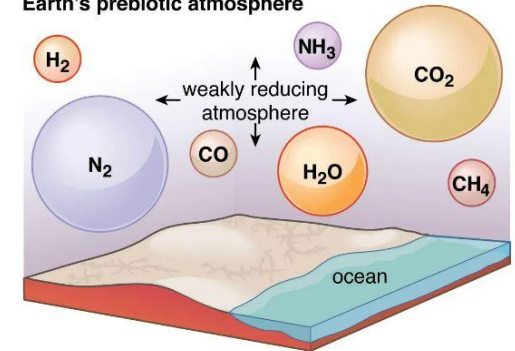
- 1 – **Screening** – Removes large solids
- 2 – **Clarification** – Allows solids to settle
- 3 – **Filtration** – Removes small particles
- 4 – **Chlorination** – Kills microorganisms

Waste water also goes through a four stage process before it is released into the environment

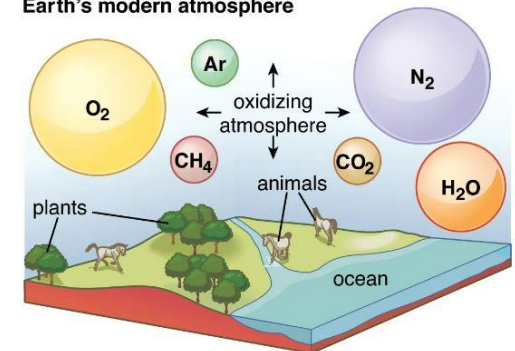
- 1 – **Screening** – Removes large solids
- 2 – **Sedimentation** – Allows solids to settle
- 3 – **Aeration** – Adds air to the mixture and allows bacteria to break down organic matter
- 4 – **Final settlement** – Allows any fine particles to settle before water is returned to the rivers.

Formation of the atmosphere

Earth's prebiotic atmosphere



Earth's modern atmosphere

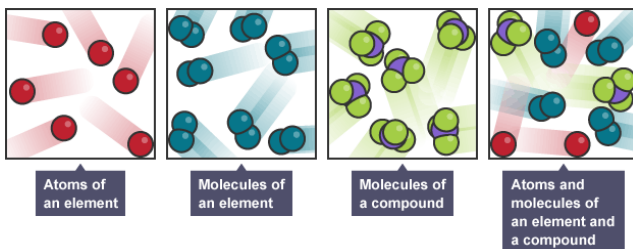


Climate change

Climate change is a change in global climate patterns caused by increasing levels of greenhouse gasses in the atmosphere

Year 9 Science Knowledge Bank - Summer Term (Chemistry)

Elements, mixtures and compounds

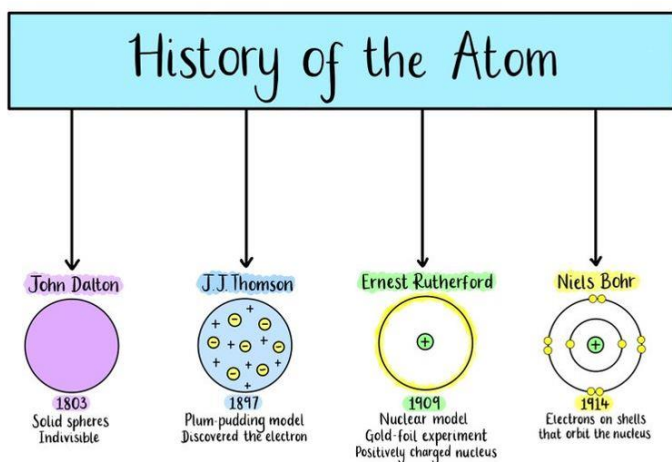


Element – A substance containing one type of atom.

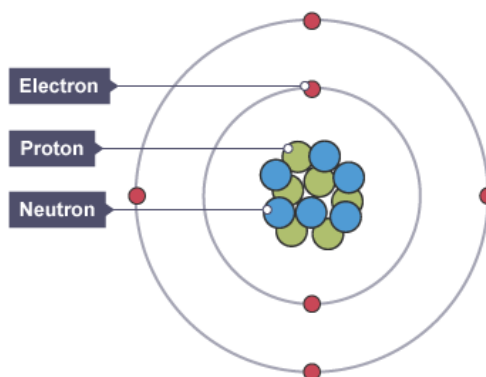
Compounds – Two or more elements chemically bonded together.

Mixture – Two or more elements not chemically bonded together.

History of the atom



Structure of the atom and electron configuration



Particle	Charge	Mass
Proton	Positive	1
Electron	Negative	Tiny or 1/2000
Neutron	No Charge	

Isotopes

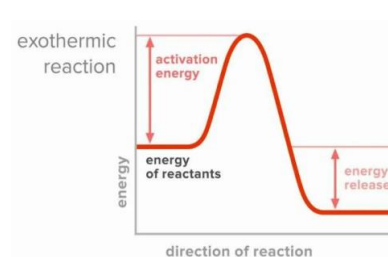
An isotope is atoms of the same element with a different number of neutrons.

Pollution

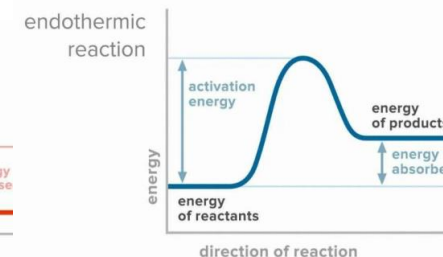
Increasing human population has led to an increase in pollution. Some of this is due to more fossil fuels being burnt for heat and power, more food being grown on land taken over for industry and housing. Pollution can be split into **land pollution** (Landfill not recycled), **Air pollution** (greenhouse gasses) and **Water pollution** (fertilisers and chemicals dissolved in water).

Exothermic and Endothermic Reactions

Exothermic reactions
Chemical reactions which **release energy to the surroundings** (Usually feel hot)



Endothermic reactions
Absorb energy from the surroundings (Usually feel cold)



Year 9 Science Knowledge Bank - Summer Term (Chemistry)

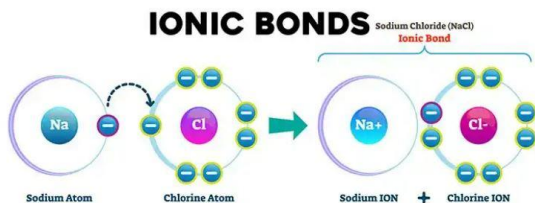
The modern periodic table

Elements are arranged in rows called **periods** in the order of **increasing atomic number**

Elements with similar properties are placed in vertical columns called **groups**.

Ions and Ionic bonding

An ionic bond forms between a metal and non metal and electrons are lost or gained during the reaction making a charged ion.



The modern periodic table was developed by **Dmitri Mendeleev**, he arranged the elements in order of **increasing atomic weights** and took into account the **properties of the elements**, he also **left** gaps in the periodic table for elements not discovered and using the table, could predict the properties of the element.

Metals and non metals

Metals are found on the on the left and middle of the periodic table. Non metals are found on the right side.

Property	Metals	Non metals
Appearance	Shiny	Dull
State at room temp	Solid (except mercury)	Solid, liquid and gas
Density	High	Low
Strength	Strong	Weak
Malleable or brittle	Malleable	Brittle
Conduction of heat and electricity	Good	Poor
Sound when hit	Sonerous	Make a dull sound

Group 1 elements

Group 1 elements have one electron in their outer shell, get more reactive as you go down the group, melting points decrease going down the group.

Group 7 elements

Group 7 elements have seven electrons in their outer shell, they are less reactive as you go down the group, melting points increase going down the group.

Group 0 elements



Group 0 elements have full outer shells, they are unreactive but glow different colours when an electric current is applied, their boiling points increase going down the group

COMPUTER SCIENCE

DATA REPRESENTATION

DENARY

Denary is the decimal number system that we are used to. It uses the numbers 0-9 and the column headings go up in powers of 10.

100 (Hundreds)	10 (Tens)	1 (Units)
2	3	8
2 lots of 100	3 lots of 10	8 lots of 1

BINARY

Binary uses the numbers 0 and 2. The column headings go up in power of 2:

128	64	32	16	8	4	2	1
0	1	0	0	0	1	1	1

$$64 + 4 + 2 + 1 = 71$$

HEXADECIMAL

Hexadecimal uses 0- F (A=10, B=11, C=12, D=13, E=14, F=15). The headings go up in powers of 16.

16	1
3	D
3 lots of 16	D (13) lots of 1

To convert a binary number to Hexadecimal, split into 2:

128	64	32	16
1	1	0	0

8	4	2	1
1	1	0	0

= C

$$3 * 16 = 48$$

$$D (13) * 1 = 13$$

$$48 + 13 = 61$$

= 7

BINARY ADDITION

$$\begin{array}{r}
 1\ 0\ 0\ 1\ 0\ 1\ 0\ 1 \\
 +\ 1\ 1\ 0\ 1\ 1\ 0\ 1\ 1 \\
 \hline
 1\ 1\ 1\ 1\ 1\ 0\ 0\ 0\ 0 \\
 1\ \quad\quad 1\ 1\ 1\ 1\ 1
 \end{array}$$

This binary addition gives an overflow error as the total does not fit in 8 bits (a byte).

CHARACTERS

Character sets = the characters that are recognised or represented by a computer system

ASCII = Each character is represented by a 7 bit number with a 0 in front to make it up to a byte.

Extended ASCII = Each character is represented by an 8 bit binary number. This gives 256 different possibilities.

Unicode = Each letter is represented by a 16-bit or 32-bit binary number. This gives at least twice as many character options as ASCII and allows the character set to represent characters and symbols from all languages.

IMAGES

Images are made up of pixels

The colour of each pixel is represented by a binary number

If an image uses 1 bit to represent each colour then it will only have 2 colours:

0	0	1	0	0
0	0	0	1	0
1	1	1	1	1
0	0	0	1	0
0	0	1	0	0

0	0	1	0	0
0	0	0	1	0
1	1	1	1	1
0	0	0	1	0
0	0	1	0	0

This is a 1-bit image so it uses 2 colours. 0=white and 1=black

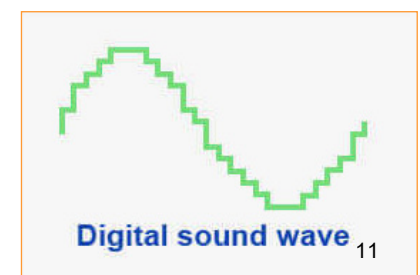
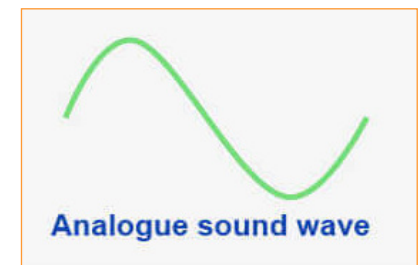
COMPUTER SCIENCE

SOUND

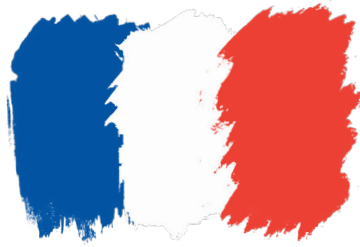
Analogue / Digital	Analogue sound waves must be converted into digital sound waves by taking a sample of the sound at set intervals. This is because computers can only work with digital 'numbers', and not analogue 'sound'
Sample rate	Number of times analogue signal is sampled per second. Measured in Hertz
Bit depth	Number of bits used per sample. Sometimes known as sample resolution
File size	Sample rate x sample resolution x seconds
Factors	Larger sample rate and/or bit depth will make the file size bigger and improve the playback quality; and vice versa. Also, making the duration of the recording longer will make the file size bigger, and vice versa

COMPRESSION

Compression	Compression is when a file is encoded so it uses fewer bits than the original file format
Lossless compression	Gets rid of unnecessary data to re-present data without losing any information. This process is reversible
Lossy compression	Gets rid of the least essential data. This is an irreversible process: once data is lost it can't be recovered



French



Present tense verbs

je poste	I post
je tchatte	I chat
j'utilise	I use
je regarde	I watch
il regarde	he watches
elle partage	she shares
nous achetons	we buy
ils utilisent	they use
elles tchattent	they (the girls) chat

Conditional verbs

je voudrais	I would like
je posterais	I would post
je tchatterais	I would chat
je regarderais	I would watch
j'acheterais	I would buy
je partagerais	I would share
j'utiliserais	I would use
on posterait	we would post
on regarderait	we would watch

Technology and everyday life

j'aime blogger	I like to blog
jouer en ligne	playing on line
participer à des forums	taking part in forums
me faire des amis	making friends
communiquer avec mes amis	communicating with friends
poster des commentaires	posting comments
faire partie d'une groupe	being part of a group
voter pour quelque chose	voting for things
regarder des vidéos amusants	watching funny videos
faire des recherches	doing research
faire mes devoirs	doing my homework
tchatter sur Snapchat	chatting on Snapchat



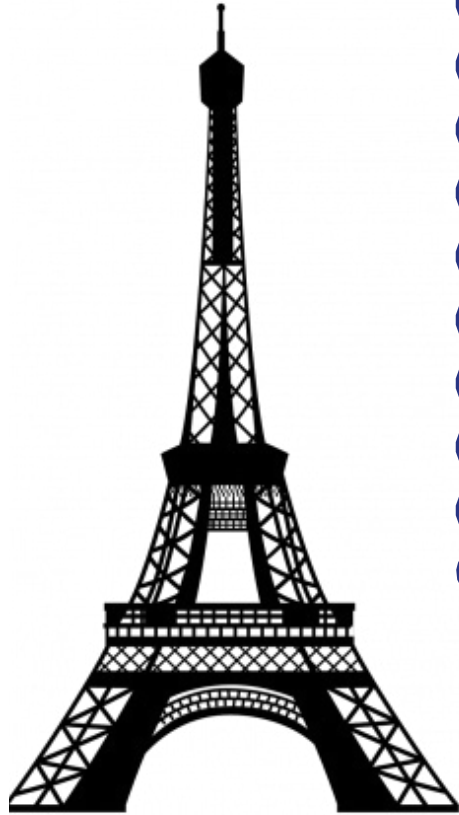
Devices

j'ai	I have
je voudrais avoir	I would like to have
j'ai toujours voulu avoir	I have always wanted to have
une tablette	a tablet
un ordinateur	a computer
une console	a console
un portable	a phone
un laptop	a laptop
un smartphone	a smartphone
une montre connectée	a smart watch

Tu t'en sers souvent? Are you online often?

je suis accro	I am addicted	ils ont raison	they are right
je suis dépendent	I am addicted	ils ont tort	they are wrong
j'utilise	I use	illégalement	illegally
je l'ai toujours	I always have it	en cas d'urgence	in case of emergency
je télécharge	I download		



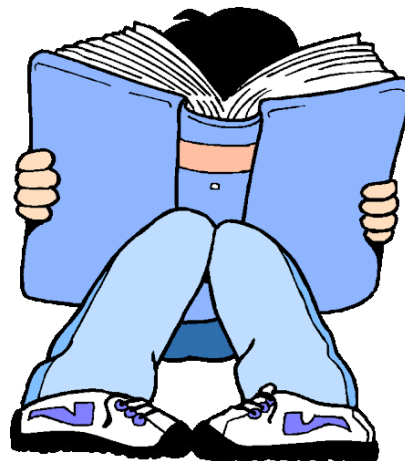


Past tense verbs

j'ai utilisé	I used
j'ai regardé	I watched
j'ai écouté	I listened
j'ai joué	I played
j'ai commandé	I ordered
j'ai téléchargé	I downloaded
j'ai acheté	I bought
j'ai communiqué	I communicated
J'ai chatté	I chatted
j'ai fait	I did
j'ai lu	I read
j'avais	I used to have

Future Tense Verbs

je vais utiliser	utilisé	I am going to use
on va regarder		we are going to watch
je vais écouter		I am going to listen
on va jouer		we are going to play
je vais commander		I am going to order
on va télécharger		we are going to download
je vais acheter		I am going to buy
on va communiquer		we are going to communicate
je vais chatter		I am going to chat
on va faire		we are going to do
je vais lire		I am going to read
j'aurai		I will have



Oh la la

GEOGRAPHY Climate Change

WHAT IS CLIMATE?

- Climate is the average weather in a place. It tells us what the weather is usually like.
- Climate is worked out by taking weather measurements over a long period of time (usually 30 years) and then calculating the average i.e. of temperature and rainfall.
- Weather is what you get on a day-to-day basis!

WHAT IS CLIMATE CHANGE?

A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels!

EVIDENCE FOR CLIMATE CHANGE

ANALYSIS OF POLLEN AND TREES

Allows us to see if more or less pollination has taken place. More pollen would suggest a warmer climate as there would be more pollen and less pollen would indicate the opposite.

WEATHER RECORDINGS

Thermometers are more accurate now and digital readings can be recorded remotely. This means you can easily tell if the climate has changed as you can compare different dates at different times.

ICE CORES

Locked inside ice are molecules and trapped air, which are preserved year on year with more snowfall. Subtle changes in temperature can be measured from ice cores extracted in Antarctica. These can be used to tell the climate from millions of years ago.

ROCKS AND FOSSILS

These can be studied for information covering longer time periods Eg. limestone would have been formed on the bottom of a warm seabed millions of years ago. Telling us what climate was like when first created

ORBITAL THEORY

- The Earth's orbit is sometimes circular, and sometimes more of an ellipse (oval)
- The Earth's axis tilts. Sometimes it is more upright, and sometimes more on its side.
- The Earth's axis wobbles, like a spinning top about to fall over.



NATURAL CAUSES OF CLIMATE CHANGE

SUNSPOT THEORY

- The Sun's output is not constant. Cycles have been detected that reduce or increase the amount of solar energy.
- Temperatures are greatest when there are plenty of sunspots - because it means other areas of the Sun are working even harder!



THE ERUPTION THEORY

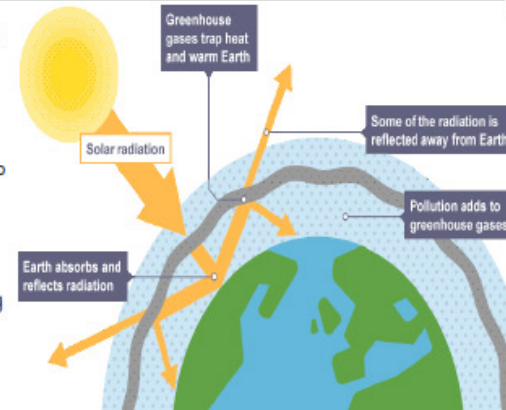
- Volcanic eruptions produce ash and sulphur dioxide gas. This is circulated globally by high level winds.
- The blanket of ash and gas will stop some sunlight reaching the Earth!
- Instead, the sunlight is reflected off the ash/gas, back into space.
- This cools the planet and lowers the average temperature.



THE GREENHOUSE EFFECT

- A natural function of the Earth's atmosphere is to keep in some of the heat that is lost from the Earth.
- The atmosphere allows the heat from the Sun (short-wave radiation) to pass through to heat the Earth's surface.
- The Earth's surface then gives off heat (long-wave radiation).
- This heat is trapped by **greenhouse gases** (eg methane, carbon dioxide and nitrous oxide), which radiate the heat back towards Earth.
- This process heats up the Earth.

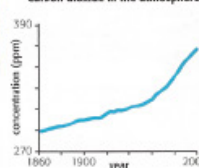
HUMAN CAUSES OF CLIMATE CHANGE



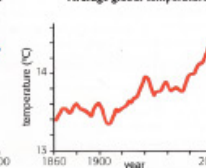
HUMAN FACTORS INCREASING WARMING

- Burning fossil fuels, eg coal, gas and oil - these release carbon dioxide into the atmosphere.
- Deforestation - trees absorb carbon dioxide during photosynthesis. If they are cut down, there will be higher amounts of carbon dioxide in the atmosphere.
- Dumping waste in landfill - when the waste decomposes it produces methane.
- Agriculture - agricultural practices lead to the release of nitrogen oxides into the atmosphere.

Carbon dioxide in the atmosphere



Average global temperature



- Carbon dioxide (CO₂) is a greenhouse gas.
- As technology has developed and the population on earth has increased, the amount of CO₂ has increased since 1860.
- Data clearly shows that although temperatures have fluctuated since 1960, the general pattern is that global temperatures have increased as CO₂ levels rise

IMPACTS OF CLIMATE CHANGE

UK

- Crops such as oranges, grapes and peaches can be grown in the UK
- Winter heating costs will be reduced as winters will be milder
- Accidents on the roads in winter will be less likely to occur
- Sea levels could rise, covering low lying areas, in particular east England
- Scottish ski resorts may have to close due to lack of snow
- Droughts and floods become more likely as extreme weather increases
- Increased demand for water in hotter summers puts pressure on water supplies

WORLDWIDE

- Energy consumption may decrease due to a warmer climate
- Longer growing season for agriculture
- Frozen regions such as Canada may be able to grow crops
- Sea level rise will affect 80 million people
- tropical storms will increase in magnitude (strength)
- Species in affected areas (eg Arctic) may become extinct
- Diseases such as malaria increase, an additional 280 million people may be affected

But the negative impacts of climate change will significantly outweigh the positives.

ADAPTING TO CLIMATE CHANGE

Adaptation strategies do not aim to reduce or stop global warming. Instead they aim to respond to climate change by limiting its negative effects. Strategies include:



- **AGRICULTURE** - farmers will have to adapt as some crops may not be able to grow in a warmer climate. However, other crops (eg oranges and grapes) will be able to be planted.



- **WATER SUPPLY** - water transfer schemes could be used. This is where water is transferred from an area of water surplus to an area of water shortage.



- **REDUCING RISK FROM SEA LEVEL RISE** - areas at risk from sea level rise may use sea defences to protect the land from being eroded away.

CLIMATE CHANGE ACTIVISM

Climate change activism and protests have increased in recent years. Below are some examples of action that is being taken to combat climate change.



- **Raising awareness:** sharing learning about the human impact of climate change with others.
- **Campaigning:** asking decision makers to do what they can to reduce greenhouse gas emissions and support communities to adapt to climate change.
- **Going green:** individuals, schools and communities taking action to reduce their own emissions.
- **Fundraising:** raising money for charities working against climate change.

ADAPTATION VS MITIGATION

MITIGATION

This involves reducing greenhouse gas emissions and increasing the sinks for these gases. This can be done by setting targets to reduce emissions, switching to renewable energy sources and carbon capture and storage.

ADAPTATION

This involves changing lifestyles to cope with the consequences of climate change. This includes managed retreat from eroding coastlines, the development of drought-resistant crops and the extension of conservation zones to enable the migration of species.

MITIGATING TO CLIMATE CHANGE

Mitigation means to reduce or prevent the effects of something from happening.

Mitigation strategies include:



- **ALTERNATIVE ENERGY** - using alternative energy such as solar, wind or tidal can reduce the use of fossil fuels. This will reduce the amount of carbon dioxide released into the atmosphere.



- **CARBON CAPTURE** - this is the removal of carbon dioxide from waste gases from power stations and then storing it in old oil and gas fields or coal mines underground. This reduces the amount of emissions into the atmosphere.



- **PLANTING TREES** - encouraging **afforestation** means that there will be more trees to absorb the carbon dioxide in the atmosphere during the process of photosynthesis.



- **INTERNATIONAL AGREEMENTS** - in 2005 the Kyoto Protocol became international law. The countries that signed up to the treaty pledged to reduce their carbon emissions by 5 per cent. However, this ran out in 2012 and its overall impact has been small. The US refused to join and major developing countries like China and India were not required to make any reductions.

AN INCONVENIENT TRUTH

An Inconvenient Truth is a 2006 American concert/documentary film directed by Davis Guggenheim about former United States Vice President Al Gore's campaign to educate people about global warming. The film features a slide show that, by Gore's own estimate, he has presented over a thousand times to audiences worldwide.



BEFORE THE FLOOD



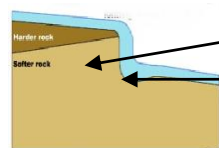
Before The Flood is the product of an incredible three-year journey that took place with my co-creator and director Fisher Stevens. We went to every corner of the globe to document the devastating impacts of climate change and questioned humanity's ability to reverse what may be the most catastrophic problem mankind has ever faced.

Geography: Rivers

Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed **vertically** to form narrow valleys.

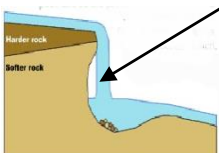
Formation of a Waterfall



1) River flows over alternative types of rocks.

2) River erodes soft rock faster creating a step.

3) Further hydraulic action and abrasion form a plunge pool beneath.



4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.

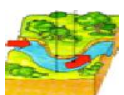
5) Waterfall retreats leaving steep sided gorge.

Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode **laterally** making the river wider.

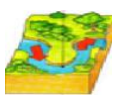
Formation of Ox-bow Lakes

Step 1



Erosion of outer bank forms river cliff. Deposition inner bank forms slip off slope.

Step 2



Further hydraulic action and abrasion of outer banks, neck gets smaller.

Step 3



Erosion breaks through neck, so river takes the fastest route, redirecting flow.

Step 4



Evaporation and deposition cuts off main channel leaving an oxbow lake.

What is Deposition?

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

Useful Video Links:

https://timeforgeography.co.uk/videos_list/rivers/
<https://www.bbc.com/bitesize/guides/z3b79qt/video>

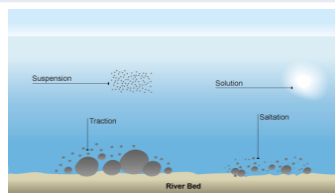
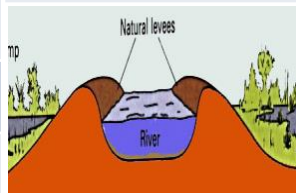
Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

Formation of Floodplains and levees

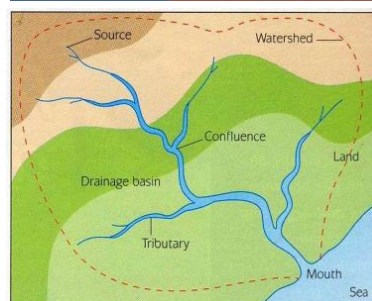
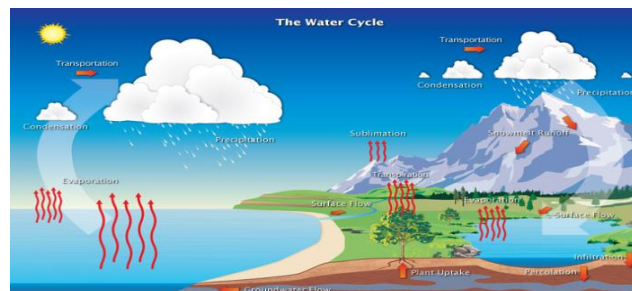
When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

- Nutrient rich soil makes it ideal for farming.
- Flat land for building houses.



Water Cycle Key Terms

Precipitation	Moisture falling from clouds as rain, snow or hail.
Interception	Vegetation prevent water reaching the ground.
Surface Runoff	Water flowing over surface of the land into rivers
Infiltration	Water absorbed into the soil from the ground.
Transpiration	Water lost through leaves of plants.



Types of Transportation

A natural process by which eroded material is carried/transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

Types of Erosion

The break down and transport of rocks – smooth, round and sorted.

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

River Management Schemes

Soft Engineering	Hard Engineering
Afforestation – plant trees to soak up rainwater, reduces flood risk. Demountable Flood Barriers put in place when warning raised. Managed Flooding – naturally let areas flood, protect settlements.	Straightening Channel – increases velocity to remove flood water. Artificial Levees – heightens river so flood water is contained. Deepening or widening river to increase capacity for a flood.

Physical and Human Causes of Flooding.

Physical: Prolong & heavy rainfall Long periods of rain causes soil to become saturated leading runoff.	Physical: Geology Impermeable rocks causes surface runoff to increase river discharge.
Physical: Relief Steep-sided valleys channels water to flow quickly into rivers causing greater discharge.	Human: Land Use Tarmac and concrete are impermeable. This prevents infiltration & causes surface runoff.

Drainage Basins

The land around a river, from which water drains into the river.

Tributary	A river that flows into a larger one.	Mouth	The point at which the river ends, in the sea, lake or ocean.
Confluence	Where two rivers join.	Watershed	An imaginary line separating one drainage basin from the next.
Source	The starting point of a river.	Bedload	Stones and other material that rolls or bounces along a river bed. ¹⁶

HISTORY Topic 5: What were the turning points of the Second World War?

22 nd June 1941	July 9 th 1941	7 th December 1941	2 nd February 1943	13 th May 1943	6 th June 1944	26 th March 1945	8 th May 1945
Operation Barbarossa launched by Nazi Germany against the USSR.	British cryptologists help to break the Enigma code.	Japanese surprise attack on Pearl Harbour.	USSR defeats Nazi Germany at the Battle of Stalingrad.	Allies push the Axis forces from North Africa.	Allied forces launch Operation Overlord, landing in Normandy, France.	The USA wins the major battle of Iwo Jima as part of its 'Island Hopping' Campaign.	Victory in Europe Day, with Nazi Germany surrendering.

Many Historians debate what they consider is the turning point of the Second World War, here are just a few to consider:

The Greatest Turning Point of WW2, Antony Beevor (2018)

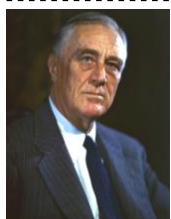
"The attack on Pearl Harbour of December 1941 is the most important turning point [...]. Germany was under no obligation to declare war on America, there is no way that the Nazis could have won after that particular moment. They were bound to be beaten eventually by the industrial power of America, by their manpower, and all the rest of it."

Twelve Turning Points of the Second World War, Philip Michael Hett Bell (2011)

"Germany's failure to capture Moscow during Operation Barbarossa was a significant turning point of the Second World War. This would allow the Soviet troops to prepare for an eventual successful counter-attack. Driving the Germans back to Berlin."

The Battle of Alamein: Turning Point, World War II, John Bierman, Colin Smith (2002)

"British Lieutenant General Bernard "Monty" Montgomery, whose showdown at the little Egyptian railway stop of El Alamein is one of the great moments in military history. Overcoming the Axis in Africa secured the British supply routes and provided a springboard to invade Italy."



Franklin D. Roosevelt, USA



Joseph Stalin, USSR



Winston Churchill, UK



Bernard Montgomery, UK



Erwin Rommel, Germany

Key Term	Definition
Turning Point	A time at which a decisive change in a situation occurs.
Cryptology	The study of codes, or the art of writing and solving them.
Non-Aggression Pact	A treaty between two or more states/countries that includes a promise not to take military action against each other.
Lebensraum	In German; living space.
Embargo	An official ban on trade or other commercial activity with a particular country.



Japanese attack on Pearl Harbour.

Allied landings on Normandy, 6th June 1944.

HISTORY Topic 6: “No Hitler, No Holocaust” How far do you agree?

1 st April 1933	11 th April 1933	10 th May 1933	September 1933	Summer 1935	November 9 th 1938
Hitler’s first action directly against the Jews was a boycott of all Jewish businesses.	Nazis issue a decree defining a non-Aryan as “anyone descended from non-Aryan, especially Jewish parents or grandparents.”	Burning of books in Berlin and throughout Germany.	Nazis establish Reich Chamber of Culture, then exclude Jews from the Arts.	Placards saying ‘Jews not wanted’ displayed in resorts, public buildings, restaurants and cafés. These were removed during the 1936 Olympic Games.	A massive, coordinated attack on Jews throughout the German Reich - during the night and into the next day - has come to be known as Kristallnacht or The Night of Broken Glass.

Key Term	Definition
Holocaust	A destruction or slaughter on a mass scale.
Anti-Semitism	Hostility to or prejudice against Jewish people.
Genocide	The deliberate killing of a large number of people from a particular nation or ethnic group, with the aim of destroying that nation or group.
Aryan Race	A race that the Nazis believed to have ‘racial purity.’
Persecution	Hostility and ill-treatment on the bases of ethnicity, religion, or sexual orientation or political beliefs.
Scape Goat	A person or thing taking the blame for others.
Concentration Camps	A place where a large number of people have been imprisoned in a small area with inadequate facilities.
Kristallnacht	Known as the “Night of the Broken Glass”, an event of violent antisemitism in Nazi Germany.
Pogrom	An organised massacre of a particular ethnic group.
Final Solution	A policy of exterminating European Jews.



Locations of the Concentration & Death Camps during the Holocaust.



Reinhard Heydrich



Gate to Auschwitz I with the sign “Work sets you free.” Note the “B” is upside down, as a show of resistance.

Auschwitz II – Birkenau gatehouse. The train track led toward the gas chambers at the rear of the camp.



Heinrich Himmler

Art ART NOW

Fertile Questions

- How does Art make people powerful?
- Can Art provoke action?
- Why is Art empowering?

Formal Elements:

Line - Tone - Colour - Shape - Pattern - Composition

Key Words

- Activism** - campaigning to make changes in society for the believed greater good.
- Installation** - art that is created, constructed, or installed on the site where it is exhibited.
- Propaganda** - information, ideas, or rumours deliberately spread to help or harm a person, group, movement, institution or nation.
- Contemporary** - of the present time; modern.

Brief:

The Box in Plymouth is hosting an Art Activism protest for current issues; such as LGBTQ+ rights, Black Lives Matter, Climate Change and War. The Box would like students to create an installation idea for a room where the protest will take place. The curator of The Box would like to see a personal response where a chosen issue is represented visually. The installation ideas must be developed in the style of one Activist Artist which delivers a specific message. You will create 'Art in a box'.



Guerilla Girls

Artist Activism

Throughout history, artists have reacted against oppression, violence, injustice and inequalities. They have stood up for the voiceless and marginalised. Art Activism challenges traditional boundaries, hierarchies and rules imposed by those in power. It's an act of defiance. It is hugely important as it can influence the thinking of the general public, as well as leaders and politicians. Often images speak louder than words. After all, an image paints a 1000 words! Art can make a message accessible and universal. Art influences society by changing opinions, instilling values and translating experiences across space and time.



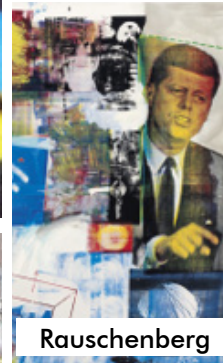
Shepherd Fairey



My Dog Sighs



Robert Indiana



Rauschenberg

Artists to Research:

Kate DeCiccio, Robert Indiana, Rauschenberg, Rob & Roberta Smith, My Dog Sighs, Banksy, Marcel Duchamp, Hannah Höch, Jacob Lawrence, Keith Haring, Paula Rego, Guerrilla Girls, Ai Wei Wei, Void One, Marina Debris, David Wojnarowicz, Barbara Kruger, Diego Rivera, Frida Kahlo, Kehinde Wiley, Shepard Fairey, Yoko Ono, Faith Ringgold

Quotes

"Art should comfort the disturbed and disturb the comfortable."

Banksy

"To be an artist, one must . . . never shirk from the truth as he understands it."

Diego Rivera

"Seeing is no longer believing. The very notion of truth has been put into crisis. In a world bloated with images, we are finally learning that photographs do indeed lie."

Barbara Kruger



Banksy

Hannah Höch

Barbara Kruger

Practical Knowledge



TYPOGRAPHY

SYMBOLS



Top Tips

- Watch Newsround - keep up to date.
- Research current Art Activism.
- Watch this - can you find others?

https://www.youtube.com/watch?v=BN-C5N60u_M



DEVISING

CREATING AN ORIGINAL PIECE OF DRAMA FROM A STIMULUS.

WHAT IS A STIMULUS?

A starting point or idea for a performance, e.g.:

- A picture
- A poem
- An object
- A piece of text
- A news headline
- A caption
- A word
- A theme
- A song
- A piece of music
- Social media
- Current issue

- | | |
|----------------|---------------------|
| Split role | Split stage |
| Unison | Canon |
| Direct address | Placards |
| Cross-cut | Monologue |
| Multi-role | Repetition and echo |

DRAMA TECHNIQUE

Still image, thought-track, flashback, marking the moment, slow motions, choral speech, choral movement, sound-scape.

STYLE

- Naturalistic
- Non-naturalistic (Brecht)
- EPIC
- Physical theatre
- Mime

REHEARSAL TECHNIQUES

- Hot-seating
- Back story
- Character modelling
- Emotional memory

PRACTITIONERS

- Brecht
- Stanislavski
- Frantic assembly
- Anne Teresa De Keersmaeker

THEATRICAL SKILLS

VOCAL

- Tone
- Pitch
- Pace
- Volume
- Projection
- Accent
- Pause
- Timing
- Intonation
- Emotional range

PHYSICAL

- Posture
- Movement
- Gait
- Level
- Spacial awareness
- Eye contact
- Proxemics
- Gesture
- Facial expressions
- Pace

RESPONDING TO A STIMULUS

- What ideas generally come to mind?
- What does this make you think of?
- How does the stimulus make you feel?
- What themes do you associate with your stimulus?
- Which characters do you associate with your stimulus?
- Which settings do you associate with your stimulus?
- What research will you undertake?
- What did you find out once you had completed research?
- What do you want to show through your character? What do you want the audience to see about them?
- What was the initial purpose of your piece overall? What message do you want to show?
- How do you want your audience to feel?



DEVISING DRAMA

FRANTIC ASSEMBLY

- Physical Theatre Company
- They create work which reflects modern day culture
- Contemporary
- Vivid and dynamic
- Performances include movement, design, mime and text
- Non- naturalistic
- Non-verbal
- Subtext

CREATIVE PROCESS

- Chair duets
- Round by through
- Push hands
- Sequencing moves
- Contact improvisation
- Sling of material
- The moment **before** the movement
- The moment **of** the movement
- The moment **after** the movement

PHYSICAL THEATRE

Creating drama and telling a story using only your body and movement.

Choral movement

Negative space

Unison

Canon



WHAT TYPE OF GROUP MEMBER ARE YOU?

LEADER: you have ideas and are happy to express them. You enjoy being in charge. You may sometimes be frustrated if others aren't following you or disagree with you.

HELPER: you don't usually lead, but you are happy to put forward your ideas and work with others. You may assist Leaders to see their ideas through or encourage others to take part.

PASSENGER: you don't want to lead and you aren't confident about putting your ideas forward. However, you will go along with what the group wants to do.

BLOCKER: you find group work frustrating and you don't positively help the group. You might tend to argue with others, refuse to co-operate or become distracted.

DRAMA LOG BOOK

Section 1:
Response to stimulus

Section 2:
Development and collaboration

Section 3:
Analysis and evaluation

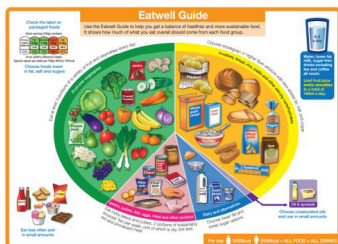
Food & Nutrition

Name: _____



The Eatwell Guide

- When choosing food and drinks, current healthy eating guidelines should be followed.



The Eatwell Guide

- Comprises 5 main food groups.
- Is suitable for most people over 2 years of age.
- Shows the proportions in which different groups of foods are needed in order to have a well-balanced and healthy diet.
- Shows proportions representative of food eaten over a day or more.

8 tips for healthier eating

These eight practical tips cover the basics of healthy eating, and can help you make healthier choices.

- Base your meals on starchy carbohydrates.
- Eat lots of fruit and veg.
- Eat more fish – including a portion of oily fish.
- Cut down on saturated fat and sugar.
- Eat less salt (max. 6g a day for adults).
- Get active and be a healthy weight.
- Don't get thirsty.
- Don't skip breakfast.

Composite/combination food

Much of the food people eat is in the form of dishes or meals with more than one kind of food component in them. For example, pizzas, casseroles, spaghetti bolognese and sandwiches are all made with ingredients from more than one food group. These are often called 'combination' or 'composite' foods.



Key terms

The Eatwell Guide: A healthy eating model showing the types and proportions of foods needed in the diet.

Hydration: The process of replacing water in the body.

Dietary fibre: A type of carbohydrate found in plant foods.

Composite/combination food: Food made with ingredients from more than one food group.

Fruit and vegetables

- This group should make up just over a third of the food eaten each day.
- Aim to eat at least five portions of a variety each day.
- Choose from fresh, frozen, canned, dried or juiced.
- A portion is around 80g (3 heaped tbs).
- 30g of dried fruit or 150ml glass of fruit juice or smoothie count as a max of 1 portion each day.

Beans, pulses, fish, eggs, meat and other protein

- Sources of protein, vitamins and minerals.
- Recommendations include to aim for at least two portions of fish a week, one oily, and; people who eat more than 90g/day of red or processed meat, should cut down to no more than 70g/day.

Hydration

- Aim to drink 6-8 glasses of fluid every day.
- Water, lower fat milk and sugar-free drinks including tea and coffee all count.
- Fruit juice and smoothies also count but should be limited to no more than a combined total of 150ml per day.

Potatoes, bread, rice, pasta or other starchy carbohydrates

- Base meals around starchy carbohydrate food.
- This group should make up just over a third of the diet.
- Choose higher-fibre, wholegrain varieties.

Oil and spreads

- Unsaturated fats are healthier fats that are usually from plant sources and in liquid form as oil, e.g. olive oil.
- Generally, people are eating too much saturated fat and need to reduce consumption.

Fibre

- Dietary fibre is a type of carbohydrate found in plant foods.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; and, seeds.
- Dietary fibre helps to: reduce the risk of heart disease, diabetes and some cancers; help weight control; bulk up stools; prevent constipation; improve gut health.
- The recommended average intake for dietary fibre is 30g per day for adults.

Dairy and alternatives

- Good sources of protein and vitamins.
- An important source of calcium, which helps to keep bones strong.
- Should go for lower fat and lower sugar products where possible.

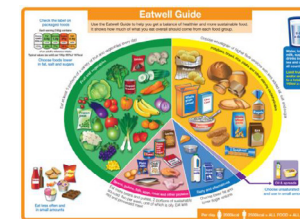
Foods high fat, salt and sugar

- Includes products such as chocolate, cakes, biscuits, full-sugar soft drinks, butter and ice cream.
- Are high in fat, sugar and energy and are not needed in the diet.
- If included, should be had infrequently and in small amounts.

To find out more, go to:
<https://bit.ly/2QzUMfe>

Meals and snacks can be sorted into The Eatwell Guide food groups.

Composite/combination food - Lasagne



Pasta (lasagne sheets): **Potatoes, bread, rice, pasta or other starchy carbohydrates**

Onions, garlic and chopped tomatoes: **Fruit and vegetables**

Lean minced meat (or meat substitute): **Beans, pulses, fish, eggs, meat and other protein**

Cheese sauce made with milk and cheese: **Dairy and alternatives**

Olive/vegetable oil used to cook onions and mince: **Oil and spreads**

Task

Plan a menu for a day that applies the principles of The Eatwell Guide and the 8 tips for healthier eating. Make one of the dishes, complete a sensory evaluation and calculate the energy and nutrients provided using nutritional analysis.

Name:

Date:

Diet, activity and health



- There are health issues related to dietary excess or deficiency.
- It is important to include a variety of different activity in everyday living, supporting physical, social and mental wellbeing.

A balanced diet

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



Malnutrition

Having intakes of energy and/or nutrients below or in excess of needs for long periods of time can affect health.

The risk of **malnutrition** is increased by:

- increased requirements for some nutrients;
- restricted range of foods;
- reduction in available income;
- very low income;
- medical conditions;
- psychological conditions.

Diet and health

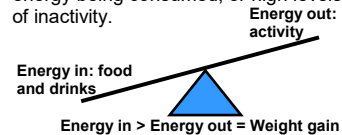
There is a link between a poor diet, and the risk of developing some diseases.

This includes the risk of:

- cancer;
- coronary heart disease (CHD);
- bone health;
- anaemia.

Over nutrition

The most common over nutrition problem is obesity caused by too much energy being consumed, or high levels of inactivity.



Body Mass Index

BMI measures your height and weight to work out if your weight is healthy.

$$\text{BMI} = \frac{\text{weight (kg)}}{(\text{height in m})^2}$$

Recommended BMI range (adults)

Less than 18.5	Underweight
18.5 to 25	Desirable
25-30	Overweight
30-35	Obese (Class I)
35-40	Obese (Class II)
Over 40	Morbidly obese

Under nutrition

Worldwide, Kwashiorkor and marasmus are two common diseases caused by a lack of protein and energy. Fat soluble vitamins (A, D, E and K) are stored in the body so it takes time for deficiency diseases to develop.

Diet and cancer

The World Cancer Research Fund has released nine cancer prevention recommendations.

- Be a healthy weight.
- Move more.
- Avoid high-calorie foods and drinks.
- Enjoy more grains, veg, fruit and barley.
- Limit intake of red meat and avoid processed meat.
- Don't drink alcohol.
- Eat less salt.
- Don't rely on supplements.
- Breastfeed your baby.

Diet and CHD

It is believed that 80% of CHD and strokes could be prevented by changes to lifestyle factors, such as diet, physical activity and smoking.

Changes to the diet to reduce the risk of CHD include:

- increasing oily fish intake;
- reducing salt intake;
- increasing fruit and vegetables;
- decreasing alcohol consumption.

Activity recommendations

Pre-schoolers (3 to 4 years): 180 minutes (3 hours) spread throughout the day, including at least 60 minutes of moderate-to-vigorous intensity physical activity

Children and young people (5-18 years): at least 60 minutes of physical activity every day and engage in a variety of types and intensities of physical activity across the week.

Adults (19-64 years): at least 150 minutes each week (moderate intensity), or have 75 minutes of vigorous activity a week and do muscle strengthening activities on two days or more each week.

Moderate activity



Vigorous activity



Muscle strengthening activities



Inactivity

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

1 in 4 women and 1 in 5 men are classified as inactive (<30 mins per week).

Obesity

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

Task

Create a poster that contains information on what constitutes a healthy diet and some top tips on how to get active. Include information on how getting active and having a healthy diet can reduce the risk of some health issues and some other tips on how to reduce the risk of these.

For more information, go to: <https://bit.ly/32BF4FJ>

Key terms

Deficiency diseases: Adverse bodily conditions caused by a lack of a nutrient.

Iron deficiency anaemia: A condition caused by insufficient iron in the body. Common symptoms include tiredness and lethargy.

Kwashiorkor: A severe type of protein-energy malnutrition.

Malnutrition: When the diet does not contain the right amount of nutrients.

Marasmus: A severe type of energy malnutrition in all forms, including protein.

Moderate activity: Will raise your heart rate, and make you breathe faster and feel warmer.

Obesity: Extreme overweight. Obese adults have a BMI of 30 or above.

Sedentary behaviour: Requires little energy expenditure and includes sitting or lying down to watch television, use the computer, read, work or study, and sitting when travelling to school or work.

Vigorous activity: Makes you breathe hard and fast.

Name:

Date:

Energy, nutrients and digestion



- Food and drinks provide energy and nutrients in different amounts, they have important functions in the body and people require different amounts during their life.
- Digestion involves different parts of the body, each having an important role.

Energy
Energy is essential for life, and is required to fuel many different body processes, growth and activities. These include:

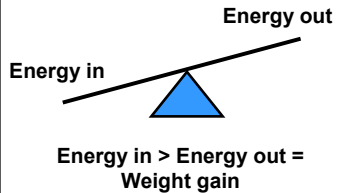
- keeping the heart beating;
- keeping the organs functioning;
- maintenance of body temperature;
- muscle contraction.

Different people need different amounts of dietary energy depending on their:

- age;
- gender;
- body size;
- level of activity;
- genes.



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



- Tasks**
1. Create an infographic on either macronutrients or micronutrients. Focus on the definition of each nutrient, recommendations and sources.
 2. Draw the digestive system and label each of the body parts and the stages of digestion that occur at each part.
 3. Calculate the energy and nutrients provided by a food diary for one or two days using <http://explorefood.foodafactoflife.org.uk> - reflect on the results.

Energy from food

- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with the term calories (kcal).
- Different macronutrients provide different amounts of energy.

	Energy per 100g
Carbohydrate	16kJ (3.75 kcals)
Protein	17kJ (4 kcals)
Alcohol	29kJ (7kcals)
Fat	37kJ (9 kcals)

Energy requirements vary from person to person, depending on the Basal Metabolic Rate (BMR) and Physical Activity Level (PAL).

Total energy expenditure = BMR x PAL

Body Mass Index (BMI) can be used to identify if an adult is a correct weight for height.

BMI = $\frac{\text{weight (kg)}}{(\text{height in m})^2}$

Recommended BMI range (adults)	
Less than 18.5	Underweight
18.5 to 25	Desirable
25-30	Overweight
30-35	Obese (Class I)
35-40	Obese (Class II)
Over 40	Morbidly obese

Nutrients
There are two different types of nutrients:

- macronutrients;
- micronutrients.

There are three macronutrients that are essential for health:

- carbohydrate;
- protein;
- fat.

There are two types of micronutrients:

- vitamins;
- minerals.

Carbohydrate
Free sugars include all sugars added to foods, plus sugars naturally present in honey, syrups and unsweetened fruit juice.

Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine.

Sugars include a variety of different sugar molecules such as sucrose

Starchy foods are the main source of carbohydrate for most people and are an important source of energy. We should be choosing wholegrain versions of starchy foods where possible.

Protein
Protein is made up of building blocks called amino acids. There are 20 amino acids found in protein. For adults, eight of these have to be provided by the diet (this is higher in children). These are called essential amino acids, which cannot be made by the human body.

Fat
Sources of fat include:

- saturated fat;
- monounsaturated fat;
- polyunsaturated fat.

A high saturated fat intake is linked with high blood cholesterol levels.

Micronutrients
Vitamins
There are two groups of vitamins:

- fat-soluble vitamins, e.g. vitamins A and D.
- water-soluble vitamins, e.g. B vitamins (thiamin, riboflavin, niacin, folate, vitamin B12) and vitamin C.

Minerals
Minerals are inorganic substances required by the body in small amounts for a variety of different functions. Examples include: calcium, sodium and iron. Most micronutrients are mostly provided by the diet. An exception is vitamin D which can be synthesised by the action of sunlight on the skin.

Calcium is essential for a number of important functions such as the maintenance of bones and teeth, blood clotting and normal muscle function.

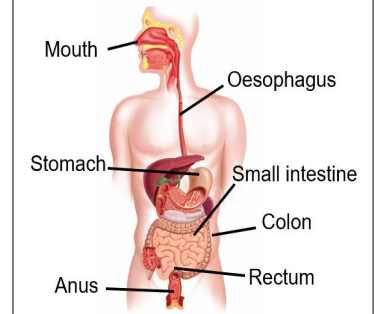
Sodium is needed for regulating the amount of water and other substances in the body.

Iron is essential for the formation of haemoglobin in red blood cells. Red blood cells carry oxygen and transport it around the body. Iron is also required for normal metabolism and removing waste substances from the body.

Stages of digestion
Ingestion - the intake of food into the gastrointestinal (GI) tract.
Digestion - a series of physical and chemical processes which begin in the mouth, but take place mainly in the stomach and small intestine.
Absorption - the passage of digested food substances across the gastrointestinal lining into the bloodstream and lymphatic system.
Elimination - the excretion of undigested food substances (such as cellulose) or waste in faeces.

Key terms
Energy: The power the body requires to stay alive and function.
Digestion: The process by which food is broken down in the digestive tract to release nutrients for absorption.
Macronutrients: Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.
Micronutrients: Nutrients which are needed in the diet in very small amounts.

Digestion
The body requires energy from food and drink. Our bodies release the energy and nutrients from food. The food passes down the Gastrointestinal tract (GI) tract as shown below.



To find out more, go to: <https://bit.ly/31CBike>

Name:

Date:



Food hygiene

- Good food safety and hygiene practices are essential to reduce the risk of food poisoning.

Food poisoning

Food poisoning can be caused by:

- bacteria, e.g. through cross-contamination from pests, unclean hands and dirty equipment, or bacteria already present in the food, such as salmonella;
- physical contaminants, e.g. hair, plasters, egg shells, packaging;
- chemicals, e.g. cleaning chemicals.

Bacterial contamination is the most common cause.

Microorganisms occur naturally in the environment, on cereals, vegetables, fruit, animals, people, water, soil and in the air. Most bacteria are harmless but a small number can cause illness. Harmful bacteria are called pathogenic bacteria.

The process of food becoming unfit to eat through oxidation, contamination or growth of micro-organisms is known as food spoilage.

Bacterial growth and multiplication

All bacteria, including those that are harmful, have four requirements to survive and grow:

- food;
- moisture;
- warmth;
- time.



High risk food

Bacteria easily multiply on foods known as 'high-risk food'. These are often high in protein or fat, such as cooked meat and fish, dairy foods and eggs. Cooked pasta and rice are also regarded as high risk foods if they are not cooled quickly after cooking and stored below 5°C.

Moisture

Bacteria need moisture to survive. Dried foods, such as powdered milk, cereals or dried egg do not support bacterial growth, if properly stored. However, if moisture is added, any bacteria still alive can quickly begin to multiply.

Symptoms of food poisoning

The symptoms of food poisoning include:

- nausea;
- vomiting;
- stomach pains;
- diarrhoea.

People at risk

Elderly people, babies and anyone who is ill or pregnant needs to be extra careful about the food they eat.

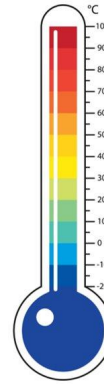
Why clean?

To remove grease, dirt and grime, and prevent food poisoning and pests.

Temperatures to remember

To reduce the risk of food poisoning, good temperature control is vital:

- 5-63°C – the danger zone where bacteria grow most readily.
- 37°C – body temperature, optimum temperature for bacterial growth.
- 8°C – maximum legal temperature for cold food, i.e. your fridge.
- 5°C (or below) – the ideal temperature your fridge should be.
- 75°C – if cooking food, the core temperature, middle or thickest part should reach at least this temperature.
- 75°C – if reheating food, it should reach at least this temperature. In Scotland food should reach at least 82°C.



Allergen and food intolerance awareness

There are 14 ingredients (allergens) that are the main reason for adverse reactions to food. Cross-contamination of food containing these allergens must be prevented to reduce the risk of harm. They must also be labelled on pre-packaged food and menus so that consumers can make safe choices. The 14 allergens are:

- | | |
|---------------------------|-----------------|
| Celery (and celeriac) | Milk |
| Cereals containing gluten | Molluscs |
| Crustaceans | Mustard |
| Eggs | Nuts |
| Fish | Peanuts |
| Lupin | Sesame |
| | Soybeans |
| | Sulphur dioxide |

Where should food be stored in the fridge?

Cheese, dairy and egg-based products

The temperature is usually coolest and most constant at the top of the fridge, allowing these foods to keep best here.

Cooked meats

Cooked meats should always be stored above raw meats to prevent contamination from raw meat.

Raw meats and fish

Raw meats and fish should be below cooked meats and sealed in containers to prevent contamination of salad and vegetables.

Salad and vegetables

These should be stored in the drawer(s) at the bottom of the fridge. The lidded drawers hold more moisture, preventing the leaves from drying out.

Time

When bacteria spend enough time on the right types of food, at warm temperatures, they can multiply to levels that cause illness.

Reheat food only once and eat leftovers within 48 hours.

Use-by-date

You've got until the end of this date to use or freeze the food before it becomes too risky to eat.

USE BY:

25/08/20

KEEP REFRIGERATED

Getting ready to cook

- Remove blazers/jumpers and roll up long sleeves.
- Tie up long hair and tuck in ties or head coverings.
- Thoroughly wash and dry hands.
- Put on a clean apron.

Best-before-date

You can eat food past this date but it might not be at its best quality.

BEST BEFORE:

25/08/21

STORE IN A COOL DRY PLACE

Key terms

Allergens: Substances that can cause an adverse reaction to food. Cross-contamination must be prevented to reduce the risk of harm.

Bacteria: Small living organisms that can reproduce to form colonies. Some bacteria can be harmful (pathogenic) and others are necessary for food production, e.g. to make cheese and yogurt.

Cross-contamination: The transfer of bacteria from one source to another. Usually raw food to ready-to-eat food but can also be the transfer of bacteria from unclean hands, equipment, cloths or pests. Can also relate to allergens.

Food poisoning: Illness resulting from eating food which contains food poisoning micro-organisms or toxins produced by micro-organisms.

High risk ingredients: Food which is ready to eat, e.g. cooked meat and fish, cooked eggs, dairy products, sandwiches and ready meals.

Task

Create a poster highlighting the top tips for ensuring food is safe to eat. Include personal hygiene, safe storage, preparation and cooking of food.

To find out more, go to:

<https://bit.ly/2Z97B5f>

Name:

Date:

Food labelling

- Food labels provide information, which helps people to know when to eat food, and how to store it safely.
- Nutrition and allergy information on food labels help to make informed food and drink choices.



Food labelling

Information on the labels of pre-packed food and drink products can be legally required or just for consumer information.

Legally required information:

- country of origin and place of provenance;
- date mark;
- list of ingredients (including additives and allergens);
- name and address of the manufacturer, packer or seller;
- name of food or drink;
- nutrition information;
- storage and preparation instructions;
- weight or volume.

Consumer information:

- front-of-pack nutrition label;
- price;
- serving suggestions/image.

Allergen labelling

There are 14 ingredients (allergens) that are the main reason for adverse reactions to food. They must be labelled on pre-packaged food and menus so that consumers can make safe choices.

From summer 2021 new legislation will tighten the rules requiring food that is prepared for direct sale, e.g. in a coffee shop, to carry a full list of ingredients.

The 14 allergens are:

Foods containing gluten, present in wheat, barley and rye 	Crustaceans 	Eggs 	Fish 	Lupin
Peanuts 	Soybeans 	Milk 	Nuts 	Molluscs
Celery 	Mustard 	Sesame seeds 	Sulphur dioxide 	

Nutrition information

Nutrition information can help consumers make healthier choices.

Back-of-pack nutrition information is legally required.

NUTRITION

When heated according to instructions

Typical values	Per 100g	Each pack (390g**)
Energy	457kJ 109kcal	1781kJ 424kcal
Fat	3.9g	15.2g
of which saturates	1.9g	7.5g
Carbohydrate	12.1g	47.1g
of which sugars	1.6g	6.2g
Fibre	1.1g	4.2g
Protein	5.8g	22.6g
Salt	0.6g	2.2g

Key terms

Allergen: An ingredient that may cause an adverse reaction to food.

Back-of-pack labelling: Is legally required and can help consumers make healthier choices.

Front-of-pack labelling: Is voluntary but must provide certain information and can use red, amber and green colour coding. **Use-by-date:** Relates to the safety of the food. Food must be eaten by this date.

Best-before-date: Relates to the quality of the food. Food may still be eaten beyond this date.

Date marks/shelf life

'**Use by**' dates relate to the safety of the food and '**best before**' dates relate to quality. Eating foods after their '**use by**' date could lead to food poisoning.

USE BY:

25/08/20

KEEP REFRIGERATED

BEST BEFORE:

25/08/21

STORE IN A COOL DRY PLACE

Baby leaf salad

Keep refrigerated. Once opened consume within 24 hours and by the 'use by' date shown.

Ingredients

It is a legal requirement to include an ingredients list on packaged or pre-prepared foods. The ingredients must appear in descending order and with the allergens identified in **bold**, **highlighted**, underlined or in *italics*.

INGREDIENTS

Water, Carrots, Onions, Red Lentils (4.5%), Potatoes, Cauliflower, Leeks, Peas, Cornflour, **Wheat** flour, Cream (**milk**), Yeast Extract, Concentrated Tomato Paste, Garlic, Sugar, **Celery** Seed, Sunflower Oil, Herb and Spice, White Pepper, Parsley

ALLERGY ADVICE

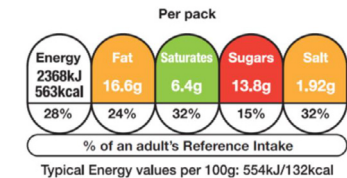
For allergens, see ingredients in **bold**

Front-of-pack labelling

Front-of-pack nutrition information is voluntary. If a food business chooses to provide this, only the following information may be provided:

- energy only;
- energy along with fat, saturates, sugars and salt.

Red, amber and green colours, if used, show at a glance whether a food is high, medium or low for fat, saturates, sugars or salt. The colour coding can be used to compare two products.




Task

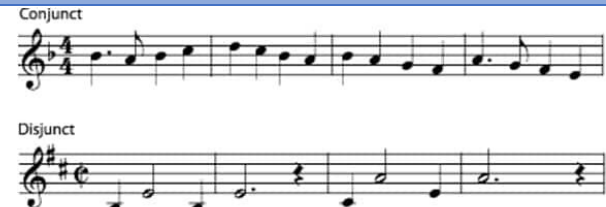
Produce a food label for a dish you have made. Ensure that the label includes the information required by law that relates to food hygiene and safety, i.e. a date mark, ingredient list (with allergens identified) and storage instructions.

MUSIC

POPULAR SONG



Exploring Popular Songs and Musical Arrangements

A. Popular Song Structure	B. Key Words	C. Lead Sheet Notation and Arrangements
<p>SONG STRUCTURE – How a song is made up of or divided into different sections (see below) and the order in which these sections occur. To work out the structure of a song, it's helpful to analyse the LYRICS and listen to a recording for the song (for instrumental sections). INTRO – often shortened to 'intro', the first section of a song which sets the mood of the song and is sometimes, but not always, an instrumental section using the song's chord pattern.</p> <p>VERSES – songs normally have several verses. Verses introduce the song's theme and have the same melody but different lyrics for each verse which helps develop the song's narrative and story. Songs made up entirely of verses are called STROPHIC.</p> <p>LINK – a optional short section often used to join different parts of a song together, often instrumental, and sometimes joins verses together or appears at other points within a song.</p> <p>PRE-CHORUS – an optional section of music that occurs before the CHORUS which helps the music move forward and "prepare" for what is to come.</p> <p>CHORUS – occurs several times within a song and contains the most memorable HOOK/RIFF. The chorus relays the message of the song and is repeated with the same melody and lyrics each time it is heard. In popular songs, the chorus is often repeated several times towards the end of the song.</p> <p>MIDDLE 8/BRIDGE – a section (often 8 bars in length) that provides contrasting musical material often featuring an instrumental or vocal solo using new musical material allowing the performer to display their technical skill on their instrument or voice. CODA/OUTRO – The final section of a popular song which brings it to an end (Coda is Italian for "tail"!)</p>	<p>LYRICS – The words of a song, usually consisting of VERSES and a CHORUS.</p> <p>HOOK – A 'musical hook' is usually the 'catchy bit' of the song that you will remember. It is often short and used and repeated in different places throughout the piece. Hooks can be either MELODIC, RHYTHMIC or VERBAL/LYRICAL.</p> <p>RIFF – A repeated musical pattern often used in the introduction and instrumental breaks in a song or piece of music. Riffs can be rhythmic, melodic or lyrical, short and repeated.</p> <p>MELODY – The main tune of the song often sung by the LEAD SINGER.</p> <p>COUNTER-MELODY – An 'extra' melody often performed 'on top of' the main melody that 'fits' with it a DESCANT or INSTRUMENTAL SOLO.</p> <p>TEXTURE – The layers that make up a song e.g., <i>Melody, Counter-Melody, Hooks/Riffs, Chords, Accompaniment, Bass Line</i>.</p>	<p>A LEAD SHEET is a form of musical NOTATION that contains only the essential elements of a popular song such as the MELODY, LYRICS, RIFFS, CHORDS (often as guitar chord symbols) and BASS LINE; it is not as developed as a FULL SCORE ARRANGEMENT and is open to interpretation by performers who need to use and adapt the given elements to create their own musical ARRANGEMENT: their "version" of an existing song.</p> <p>COVER (VERSION) – A new performance, remake or recording by someone other than the original artist or composer of the song.</p> 

D. Conjunct and Disjunct Melodic Motion	
<p>CONJUNCT MELODIC MOTION – Melodies which move mainly by use notes which are next to or close to one another. DISJUNCT MELODIC MOTION – Melodies which move mainly by leap or use which are not next to or close to one another.</p> <p>MELODIC RANGE – The distance between the lowest and highest notes in a melody.</p>	 <p>Conjunct step or notes</p> <p>Disjunct pitched</p>

E. Song Timbre and Sonority (Instruments that are used to Accompany Songs)

Pop Bands often feature a **DRUM KIT** and **PERCUSSION** to provide the rhythm along with **ELECTRIC GUITARS (LEAD GUITAR, RHYTHM GUITAR and BASS GUITAR)** and **KEYBOARDS**. Sometimes **ACOUSTIC INSTRUMENTS** are used such as the **PIANO** or **ACOUSTIC GUITAR**. **ORCHESTRAL INSTRUMENTS** are often found in pop songs such as the **STRINGS, SAXOPHONE, TROMBONE** and **TRUMPET**. Singers are essential to a pop song - **LEAD SINGER** – Often the "frontline" member of the band (most famous) who sings most of the melody line to the song. **BACKING SINGERS** support the lead singer providing **HARMONY** or a **COUNTER-MELODY** (a melody that is often higher in pitch and different, but still 'fits with' the main melody) and do not sing all the time but just at certain points within a pop song e.g. in the chorus.

Dance Music

Exploring Rhythm, Chords and Metre in Music for Dance

The RHYTHMS of dance music always match the STEPS of the dance: the two are inter-related. Dance music is based on CHORD PATTERNS: mainly PRIMARY CHORDS (I, IV & V(7)) and has a clear MELODY with an ACCOMPANIMENT (HOMOPHONIC TEXTURE). Different dances and their music use different METRES/TIME SIGNATURES.



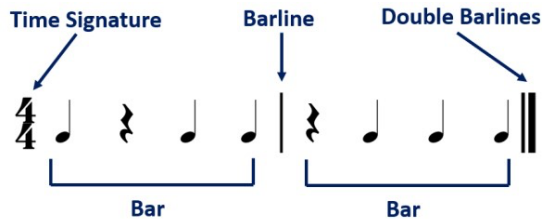
A. Pulse, Time and Metre in Dance Music

The **BEAT** or **PULSE** of dance music is always **REGULAR**. Here is a regular crotchet pulse of 12 beats:



A single **BEAT** is a basic unit of musical time. In dance music, beats are grouped together to make a repeating pattern – normally made up of either twos, threes or fours.

The repeating pattern of beats gives us the **METRE** or the **TIME SIGNATURE** at the start of a piece of music. Each repetition of the beat-pattern is called a **BAR** and bars are separated by vertical lines called **BARLINES**. A **DOUBLE BARLINE** always comes at the end of a piece of music or section of music.



The **TOP NUMBER** of a time signature tells you how many beats there are in each bar. The **BOTTOM NUMBER** tells you what types or note values these beats are (as divisions of a semibreve = 1):

1 = Semibreve

2 = Minim

4 = Crotchet

8 = Quaver

16 = Semiquaver

4/4 can also be shown by a "C" meaning

COMMON TIME



B. Simple Time in Dance Music

SIMPLE DUPLÉ METRE: Two beats to a bar



Dance music such as **MARCHES**, the **TANGO** and **IRISH REEL** often use simple duplé metre.

SIMPLE TRIPLE METRE: Three beats to a bar



Dance music such as **WALTZES** and the **MINUET**, **COURANTE** and **SARABANDE** from the Baroque Dance Suite often use simple triple metre.

SIMPLE QUADRUPLE METRE: Four beats to a bar



Dance music such as the **TANGO**, the **IRISH REEL**, the **ALLEMANDE** from The Baroque Dance Suite, **AMERICAN LINE DANCE MUSIC** (Country and Western), **DISCO** and **CLUB DANCE** often use simple quadruple metre.

C. Simple and Compound Time

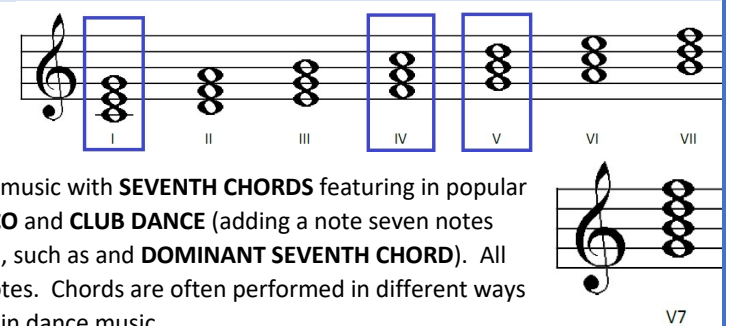
	Simple Time Signatures			Compound Time Signatures		
Duple Metre	2/4	3/4	4/4	6/8	6/4	6/16
Triple Metre	3/4	3/8	3/8	9/8	9/4	9/16
Quadruple Metre	4/4	4/2	4/8	12/8	12/4	12/16

Dance music such as the **IRISH JIG** and the **GIGUE** from the Baroque Dance Suite often use compound duple metre (6/8) with a "ONE and a TWO and a" feel to the music.

D. Chords in Dance Music

Dance music is based on **CHORD PATTERNS**.

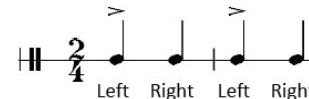
PRIMARY CHORDS: **CHORD I**, **CHORD IV** and **CHORD V** are most commonly used in dance music with **SEVENTH CHORDS** featuring in popular dance music such as **DISCO** and **CLUB DANCE** (adding a note seven notes above the root of a chord, such as and **DOMINANT SEVENTH CHORD**).



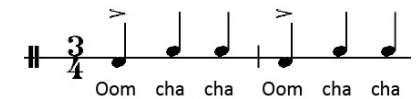
All seventh chords have 4 notes. Chords are often performed in different ways as an **ACCOMPANIMENT** in dance music.

E. Characteristic Rhythms in Dance Music

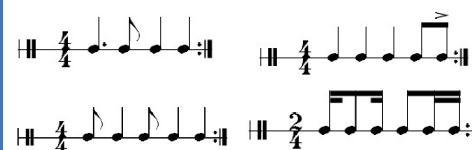
The **MARCH** has a strong **LEFT**, right, **LEFT**, right rhythm:



The **WALTZ** has a strong **OOM**-cha-cha, **OOM**-cha-cha rhythm:






The **TANGO** has several rhythms:



FOUR-ON-THE-FLOOR is a common rhythm in **DISCO** and more modern dance music:

Count	1	and a	2	and a	3	and a	4	and a
Bass Drum	●		●		●		●	
Snare Drum or Hand Claps			●				●	
Hi-Hat	●	●		●	●	●	●	●
Cymbal								

<p>F. Marches</p>  <p>Often with military connections or performed at ceremonies by large groups together. SIMPLE DUPLÉ METRE (2/4 time signature), although some marches can be in 4/4). Strong emphasis on the first beat of the bar (LEFT, right, LEFT, right). Clear MELODY and ACCOMPANIMENT (HOMOPHONIC TEXTURE). Uses mainly PRIMARY CHORDS (I, IV & V). Often performed by MARCHING BANDS featuring BRASS, DRUMS and PERCUSSION.</p>	<p>G. The Waltz</p>  <p>A PAIRED DANCE with couples close, arms around and facing each other. Popular in Vienna and became a fashionable BALLROOM DANCE.</p> <p>SIMPLE TRIPLE METRE (3/4 time signature). Emphasis on first beat of the bar. Clear OOM-cha-cha, OOM-cha-cha rhythm. Clear MELODY and ACCOMPANIMENT (HOMOPHONIC TEXTURE). REGULAR 4-BAR PHRASES. Slow HARMONIC RHYTHM using PRIMARY CHORDS (I, IV & V). Performed by ORCHESTRAS. STRINGS (occasionally WOODWIND) normally have the MELODY LINE.</p>	<p>H. Latin Dance: The Tango</p>  <p>Originated in Argentina and became a popular LATIN BALLROOM DANCE. A dramatic and sensual PAIRED DANCE with close contact, serious expressions, and quick, jerky movements. Characteristic crisp "TANGO RHYTHMS" (see E.) often DOTTED/SYNCOPATED RHYTHMS. SIMPLE DUPLÉ METRE (2/4) or SIMPLE QUADRUPLE METRE (4/4). Often MINOR TONALITY (sometimes MAJOR for contrast). Clear MELODY and ACCOMPANIMENT (HOMOPHONIC TEXTURE). Uses mainly PRIMARY CHORDS (I, IV & V). Instruments such as BANDONEON, VIOLIN, CELLO, DOUBLE BASS (often plucked – PIZZICATO), SPANISH/ACOUSTIC GUITAR, PIANO.</p>	<p>I. The Baroque Dance Suite</p>  <p>Popular between 1600-1750, a collection of shorter dances (MOVEMENTS) grouped together to form a SUITE. Dances included: ALLEMANDE (German, 4/4, Stately) COURANGE (French, 3/4, Lively, Dotted Rhythms and Disjunct melody) SARABANDE (Spanish, 3/2, Slow and Stately, emphasis on 2nd beat of bar) MINUET (3/4, Elegant, Stately) GIGUE (6/8, Fast, Lively, Triplet Rhythms) All dances in BINARY FORM (AB) with each section repeated (AABB). Performed by a group of instruments such as HARPSICHORD, LUTE, VIOLIN, CELLO, OBOE, RECORDER, FLUTE.</p>
<p>J. American Line Dance</p> <p>GROUP SYNCHRONISED DANCE. All dancers face same way standing in lines performing steps at the same time without touching. Accompanied by COUNTRY AND WESTERN MUSIC: CATCHY MELODY, CROTCHET BASS LINE, SIMPLE HARMONY (CHORDS I & V) in crotchets. SIMPLE QUADRUPLE METRE (4/4) POPULAR SONG FORM MAJOR TONALITY Instruments such as GUITARS (Electric and Acoustic), STEEL GUITAR, DRUMS, BANJO, FIDDLE, HARMONICA, ACCORDION.</p> 	<p>K. Irish Jig and Reel</p>  <p>Traditional FOLK DANCES from Ireland with intricate footwork and arms by sides. REEL: COMPOUND TIME (6/8); JIG: SIMPLE TIME (2/4 or 4/4) both with "two in a bar" feel, continuous bouncy quaver or semiquaver rhythms, fast tempo and DECORATED melodies. BINARY FORM. MAJOR/MINOR or MODAL. Folk Instruments include: FIDDLE, FLUTE, TIN WHISTLE, ACCORDION, BODHRAN, UILLEANN PIPES, HARP.</p>	<p>L. Disco</p>  <p>Appeared in 1970's as an individual, IMPROVISED DANCE in clubs from a mix of jazz, funk and soul.</p> <p>SIMPLE QUADRUPLE METRE (4/4) FAST TEMPO (around 120 BPM) FOUR-ON-THE-FLOOR RHYTHM (see E.) SYNCOPATED bass line parts. Simple CHORD PATTERNS using CHORDS I and V and SEVENTH CHORDS. POPULAR SONG FORM with a strong GROOVE (long repeated rhythm section) and fade out endings, and catchy HOOKS/RIFFS. GUITARS, VOCALS, DRUMS, STRING/BRASS SOUNDS, SYNTHESISERS, SAMPLES.</p>	<p>M. Club Dance</p>  <p>Influenced by MUSIC TECHNOLOGY: samplers, synthesisers, sequencers and drum machines. Various genres: House, Techno, Drum and Bass, Garage, Trance, Ambient. Dancing in individual and IMPROVISED on one spot. SIMPLE QUADRUPLE METRE (4/4). Use of ELECTRONIC SOUNDS. A STRONG BEAT emphasised by the DRUM and STRONG BASS LINES. SHORT PHRASES and REPETITIVE SECTIONS. FAST TEMPO (Ambient is slower/chilled) Complex, layered drum patterns. Inclusion of SAMPLES.</p>



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