

Year 8

HALF TERM 1

KNOWLEDGE ORGANISERS



Look at the information carefully. Read it three times. It may help to say it as you read it.



Cover it up with your hand or a piece of paper.



Write it out, from memory.



Check what you have written matches the information on the knowledge organiser exactly. Tick your work with a purple pen to show it is correct if it does.



If it doesn't match exactly, use your purple pen to correct it.



Orsett Heath
Academy

Masters of Recall

Week 1	Week 2	Week 3
Culture – a particular society at a particular time and place. Multicultural - the presence of several distinct cultures within one society. Rascal- a mischievous or dishonest person Scamper- to run quickly and lightly, especially in a playful manner	Parched: dried out with heat abode: a residence or dwelling Disenchant: to free from illusion or disillusionment. Bore: carry the weight of; support	Beheld: to have seen or observed. Slyly: in a way that is devious or untrustworthy Demise: the end of existence or operation
Week 4	Week 5	Week 6
aspiration: ambition, goal, or aim Pragmatism: a practical approach to problems and issues. Epitome: a person or thing that is a perfect example of a particular type or quality.	Acclimate: To become used to a new climate or situation Gravitas: a sense of great seriousness or weightiness Colonisation: the process of taking control over an indigenous population.	Guide: something that offers basic information or instruction. Review: to look at again Impetuous: acting or done quickly without thought.

Maths Year 8	Term 1A Units 1 – 2: Number/Area and Volume	
Week 1	Week 2	Week 3
÷2 The last digit is even (0,2,4,6,8) ÷3 The sum of the digits is divisible by 3 ÷4 The last 2 digits are divisible by 4 ÷5 The last digit is a 0 or 5 ÷6 The number is divisible by 2 and 3 ÷8 The last 3 digits are divisible by 8 ÷9 The sum of the digits is divisible by 9 ÷10 The last digit is a zero DIVISIBILITY RULES ÷ divisor 14 2.6 quotient 36.4 dividend 28 84 84 0 Divide Line up decimal point in the quotient with decimal point in the dividend. An effective strategy for multiplication halving and doubling example $8 \times 15 = 4 \times 30$ $= 2 \times 60$ $= 1 \times 120$ $= 120$ halving doubling	An integer is a positive or negative whole number and zero. + + = + - + = + + + = - - + = - Multiplication and division + x + results in + - x - results in + + x - results in - - x + results in - Index or Power Base $4^3 = 4 \times 4 \times 4$ Expanded Form The cube root of 64 equals 4, because $\sqrt[3]{64} = 4$ $4 \cdot 4 \cdot 4 = 64$	A prime number is a whole number that has exactly two factors: itself and 1. HCF: largest whole number that is a factor of two or more numbers. LCM: smallest multiple that two or more numbers have in common. Product of prime factors Any composite number can be split up into a product of prime factors – primes which multiply to give the original number. You can use a "tree" to organise your work when finding the product of primes. 2 is prime; stop this branch. Both 2 and 3 are prime; stop here. Write your answer as a product of the prime numbers. Split 12 into two factors (2 x 6) 6 is not prime; split 6 into two factors (2 x 3) In power/index form, this would be $2^2 \times 3$ 80 120 2 2 2 5 3 HCF = $2 \times 2 \times 2 \times 5 = 40$ (product of the intersection) LCM = $2 \times 120 = 240$ (product of all the numbers)
Week 4	Week 5	Week 6
Area is the amount of space in a 2D shape. It is measured in square units, e.g. cm², m², km². Area = $\frac{\text{base} \times \text{height}}{2}$ $A = \frac{1}{2}bh$ height base Quadrilaterals Formulas Rectangle Area (A) = $w \times l$ here, w = width, l = length Square Area (A) = a^2 here, a = side Parallelogram Area (A) = $b \times h$ here, b = base, h = height Trapezoid Area (A) = $\frac{1}{2}(a + b) \times h$ here, a = long base, b = short base, h = height	Volume is the amount of space a 3D shape occupies. The units for volume are cubic units, e.g. cm³, m³, km³. Volume of Cubes & Cuboids Volume of cube/cuboid = length x breadth x height 4cm cube 4cm 4cm 4cm x 4cm x 4cm = 64cm³ 3cm cuboid 10cm 5cm 10cm x 5cm x 3cm = 150cm³ surface area of a cube $S = 6x^2$ where x is the side length of the cube. A net shows what a 3D solid looks	Converting metric units of area: mm² cm² m² ÷10² ÷100² ×10² ×100² 1 mL = 1 cm³ 1 m³ = 1000 L Converting metric units of volume: mm³ cm³ m³ ÷10³ ÷100³ ×10³ ×100³ 1 foot (ft) ≈ 30 cm 1 mile ≈ 1.6 km 1 kg ≈ 2.2 pounds (lb) 1 litre ≈ 1.75 pints 1 gallon ≈ 4.5 litres face edge vertex

Nutrition and a Balanced Diet

A balanced diet contains the correct amounts of:

- **Carbohydrates (sugars/glucose):** Provide energy for everyday activities.
- **Proteins:** Needed for growth and repair of cells.
- **Fats:** Used for long-term energy storage.
- **Vitamins and minerals:** Support general health.
- **Fibre:** Keeps the digestive system healthy.
- **Water:** Transports substances around the body and allows chemical reactions to occur.

Food Tests

Food substance	Test	Positive result
Starch (carbohydrate)	Add iodine	Orange → blue/black
Sugar	Add Benedict's solution and heat to 60°C	Blue → green/yellow/brick red (depending on amount of sugar)
Protein	Add biuret solution	Blue → purple

Digestion

Mouth	Food is chewed and mixed with saliva containing amylase .
Oesophagus	Moves food to the stomach.
Stomach	Churns food and mixes it with acid and protease enzymes.
Small intestine	Enzymes complete digestion and nutrients are absorbed into the blood.
Large intestine	Absorbs water.
Rectum and anus	Waste leaves the body.

Enzyme	Breaks down	Products made
Amylase	Starch	Sugars
Protease	Proteins	Amino acids
Lipase	Fats	Fatty acids and glycerol

Energy and Respiration

Type	When it happens	Word equation
Aerobic respiration	Everyday activities and low-intensity exercise (in mitochondria)	Glucose + oxygen → carbon dioxide + water + lots of energy
Anaerobic respiration	Intense exercise, such as sprinting (in cytoplasm)	Glucose → lactic acid + less energy

The Effects of Exercise

When we exercise, muscles need more energy, so:

Respiration rate increases in muscle cells.

More glucose and oxygen are needed.

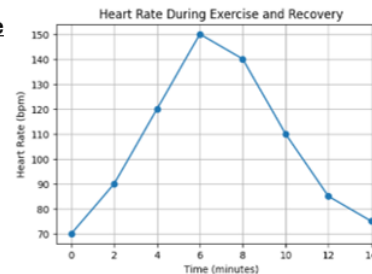
Breathing becomes faster and deeper to take in more oxygen.

Stored carbohydrates and fats are released as glucose into the blood.

The heart beats faster to deliver oxygen and glucose to muscles.

The body gets hotter because faster energy transfers release more heat.

Interpreting heart rate graphs



- Heart rate starts at about **70 bpm** when the student is resting.
- Heart rate **increases during exercise**.
- The highest heart rate is about **150 bpm at 6 minutes**.
- Heart rate increases because **muscles need more oxygen and glucose for respiration**.
- After exercise, the heart rate **decreases during recovery**.
- The heart rate returns close to the resting rate because the body's demand for oxygen and energy decreases when exercise stops.

The Effects of Drugs and alcohol

Drug: substance that changes how the **body or brain** functions.

Medicines: drugs used to treat illness; take as **instructed**—too much can be dangerous.

Smoking: nicotine is **addictive**; smoking damages lungs and increases risk of **lung cancer and heart disease**.

Alcohol: slows the brain/nervous system, affecting **judgement, coordination and reaction time**; excess can damage the **liver**.

Addiction: dependence on a drug that makes it **difficult to stop**, e.g. nicotine.

History

In what ways did the English Civil War turn the country upside down?

YEAR 8 TERM 1

Week 1	Week 2	Week 3
Civil War – A war between citizens of the same country. Divine Right of Kings – The belief that the king is chosen by God and therefore has absolute power. Puritan – A strict or extreme protestant Charles I faced lots of problems during his reign which led to the Civil War. For example: • He refused to call parliament for 11 years • He was not a strong leader • People thought he acted like a Catholic despite being a Protestant.	Royalists – Supporters of King Charles I, sometimes known as the Cavaliers. Parliamentarians – Supporters of Parliament, sometimes known as the Roundheads. New Model Army – The name of the professional parliamentarian fighting force. Pride's Purge – the event when moderate parliament members were excluded from voting about Charles I, to make sure that he would be executed.	Regicide – the killing of a monarch. For example, the execution of Charles I was a regicide. Rump Parliament – The remaining parliament after Pride's Purge Interregnum – the period of time where England existed as a commonwealth without a monarch Oliver Cromwell – the Lord Protector (leader) of England during the Interregnum Oliver Cromwell was a strict Puritan leader who banned many forms of entertainment like, theatre, football and gambling.
Week 4	Week 5	Week 6
Levellers – They believed in religious tolerance and that every man over 21 should have the right to vote. Quakers – They believed that everyone should equally be able to preach the Bible and that war is wrong. Ranters – They believed by sinning, you get closer to God (some believe this group didn't really exist). Diggers – They believed all of the world's wealth and resources should be shared equally by all. Ordinary groups of people could use the printing press to cheaply spread their ideas.	Restoration – When the monarchy returned after the Interregnum and Charles II became king. Bill of Rights – Ensured that monarchs were subject to the law, parliament met frequently and has freedom of speech, and parliament's approval was needed for laws and taxes. The Glorious Revolution – When William of Orange and Mary (daughter of James II) became monarchs of Britain after signing the Bill of Rights. After this, the idea of the 'Divine Right of Kings' was over and England became a country with a constitutional monarchy.	Social – How people lived and what they thought about their lives Political – How people were ruled and who had power Religious – What people believed about the Church and God

Masters of Recall

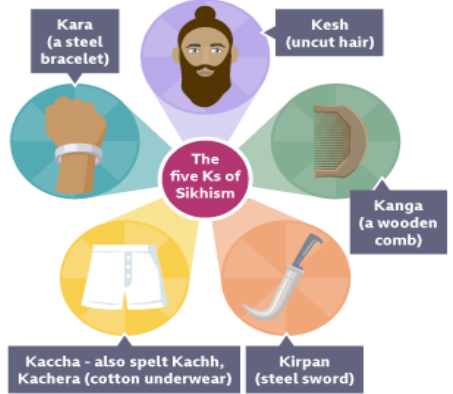
Geography

River Rivals

YEAR 8 TERM 1

Week 1	Week 2	Week 3
atmosphere – a thin layer of gas around Earth. natural resource – something produced naturally on Earth's surface, e.g., water, gold, wood. river – a natural moving body of water that transports water over the land towards the sea. soil – the material on the surface of the Earth made up of tiny pieces of broken rock. It is needed to grow plants water cycle – the continual movement of water through ocean, atmosphere, and land.	channel – the land that holds the river water. floodplain – the flat, fertile ground either side of the channel which is covered by water during a flood. mouth – the end of a river, where it meets the sea. precipitation – any weather where water is falling from the sky e.g. rain or snow. source – the start of a river, found in highland. upstream – towards the start of the river.	agriculture – farming for crops or farming animals. arid – very dry because of no rain. densely populated – an area with a lot of people living there. deposit – to put something in a particular place. region – an area, e.g. the region of north-east Africa.
Week 4	Week 5	Week 6
aerial – the view from above (birds eye view). nutrients – chemicals that are used to maintain healthy living. sediment – small pieces of sand and soil that settle on the floor. scale – the size of an area shown on a map soil fertility – the ability of soil to have plants growing on it	demand – the need for something to be available. irrigation – supplying water to help crops grow. overextraction – removing too much of a natural resource. scale bar – a ruler image on a map that shows the size of an area on the map. supply – the amount of something that is available.	conflict – fighting or a serious disagreement. economy – the system of work, jobs trade and money. GERD – the Grand Ethiopian Renaissance Dam. A very large dam built on the Nile in Ethiopia. hydroelectric power (HEP) – using the power of moving water to create energy. treaty – a written agreement between two countries.

Week 1	Week 2	Week 3
es gab → there was es hatte → it had es war → it was gestern → yesterday früher → previously	ich habe ... gewohnt → I have lived/stayed in einem Ferienhaus → in a holiday home in einem Wohnwagen → in a caravan in einem Jugendherberge → in a youth hostel bei Freunden → at friends	ich habe ... gespielt → I have played ich habe ... gegessen → I have eaten ich habe ... gemacht → I have done ich habe ... gekauft → I have bought ich habe ... gesehen → I have seen
Week 4	Week 5	Week 6
ich bin ... gefahren → I travelled mit dem Reisebus → by coach mit dem Auto → by car mit dem Schiff → by boat mit dem Zug → by train	ich bin ... gegangen → I went ich bin ... geflogen → I flew ich bin ... geschwommen → I swam ich bin ... geblieben → I stayed ich bin ... gewandert → I hiked	ungefähr → approximately nur → only dort → there es hat... geregnet → it rained es hat ... geschneit → it snowed

Week 1	Week 2	Week 3
Sikhism- The worlds fifth largest religion, originating in the Punjab over 500 years ago. Sikh- A follower of Sikhism Khanda- Sikh symbol, representing faith and courage 	Gurdwara- Sikh place of worship Guru Nanak- The founder of Sikhism Guru Granth Sahib- The Sikh holy book 	Ik Onkar- Symbol meaning there is only one God  Monotheism- The belief in one God Waheguru ('wonderful lord') Satnam ('eternal reality') Akal Purakh ('eternal one')
Week 4	Week 5	Week 6
Guru- Means teacher Janam Sakhis- A book containing stories of the childhood of Guru Nanak Guru Gobind Singh- The last living Guru	Adi Granth- A summary book of the Guru Granth Sahib Gurmukhi- Language the Guru Granth Sahib is written in 5 K's- 5 items that members of the Khalsa are obliged to wear	 <i>Masters of Recall</i>

Week 1

SONORITY (also called **TIMBRE**)

The characteristic tone colour of an instrument or voice, allowing listeners to distinguish between different sounds even when they play the same pitch.

Sonority can be described by many different words including – *velvety, screechy, throaty, rattling, mellow, chirpy, brassy, sharp, heavy, buzzing, crisp, metallic, wooden etc.*

CONDUCTOR – The musical leader of an ensemble who uses a baton and gestures to control tempo, dynamics, balance, timing, and performers' entries.

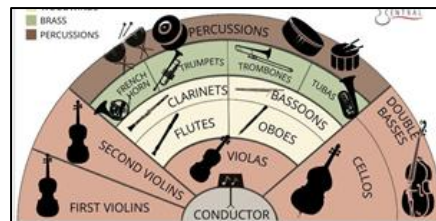
Week 2

ORCHESTRA – A large **ENSEMBLE** (group of musicians) of performers on various musical instruments who play music together. No set numbers of performers although a **SYMPHONY ORCHESTRA** (a large orchestra) can have between **80-100+** performers.

FAMILIES/SECTIONS – Instruments of the orchestra can be divided into

4 families or sections:

STRINGS,
WOODWIND,
BRASS and
PERCUSSION.

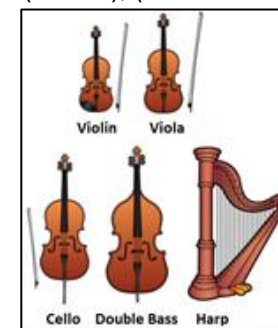


Week 3

STRING SECTION/FAMILY

Largest section of the orchestra who sit at the front, directly in front of the conductor. Usually played with a **BOW (ARCO)**, (not the **HARP**) but can be

PLUCKED (PIZZICATO).
VIOLINS split into two groups: **1st VIOLINS** (often have the main **MELODY** of the piece of music) and **2nd VIOLINS.**



Week 4

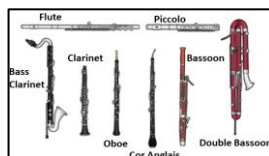
WOODWIND SECTION/FAMILY

Originally made from wood (some now metal and plastic). All are **BLOWN**.

FLUTES: Flute and Piccolo – air blown over hole.

SINGLE REED (small piece of bamboo in the mouthpiece): Clarinet, Bass Clarinet & Saxophone.

DOUBLE REED (two reeds in the mouthpiece): Oboe, Cor Anglais, Bassoon, Double Bassoon.

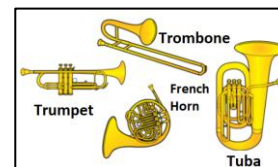


Week 5

BRASS SECTION/FAMILY

Four types of brass instruments in an orchestra, all made from metal – usually brass and **BLOWN** by the player 'buzzing their lips' into a **MOUTHPIECE**. The Trumpet, French Horn and Tuba all have three **VALVES** which adjust the length of the tubing allowing for different notes to be played. The Trombone

has a **SLIDE** which adjusts the length of the tubing.



Week 6

PERCUSSION SECTION/FAMILY

Always located at the very back of the orchestra. Large number of instruments which produce their sound then *hit, struck, scraped, or shaken*.

TUNED PERCUSSION (able to play different pitches/notes)



UNTUNED PERCUSSION (only able to produce 'sounds').



Masters of Recall

Subject: Drama

Topic: Physical Theatre

YEAR 8 TERM 1

Week 1	Week 2	Week 3
Charlie Chaplin 1887 – 1977: A British silent Movie actor, specialising in mime and slapstick comedy.  Rowan Atkinson born in 1955: A British actor specialising in mime and Comedy. Famous for his character Mr Bean.  Mime: The Drama technique of communicating without words, relying on Facial expressions. Body language, Movement and Gesture's.	Given circumstance = The plot, the facts, the incidents, the period, the time and place of the action... the way of life for the Drama. Character Intention = what is the character's goal in this scene?	Body Props: A body prop is where you use your own body to create a prop in drama. By combining more than one body, you can make larger props and pieces of set. The advantages of body-propping are that it engages the audience: Your props and set can move during the scene. You can make just about anything Your play can be performed anywhere. Inanimate Objects: An object that is not alive such as a rock, a book, a chair. In Drama and particularly when using Physical Theatre, it can be interesting to give inanimate objects a personality and bring them to life for the audience.
Week 4	Week 5	Week 6
Soundscape: use of sounds which are combined to create mood and atmosphere. 8 states of Physical Tension: 1. Exhausted (floppy jellyfish, so relaxed you cannot move a muscle) 2. Laid back (Californian cool dude) 3. One movement at a time (just woken up, 'sleepy zombie') 4. Neutral (normal, no story) 5. Is there a bomb in the room? (alert – 'is someone following me?') 6. There is a bomb in the room! (suspense) 7. The bomb's about to go off! (panic mode, passionate) 8. Rigor mortis (frozen with fear, so tense you cannot move)	Fairytale: a short story that belongs to the folklore genre. They usually convey a moral lesson or teach values, such as kindness, bravery, or honesty. Overcoming various challenges in the story allows the hero to resolve the central problem but also grow as a character and demonstrate these values. These lessons are usually woven into the story's plot. Spilt Screen: Splitting the stage in half to show two parts of a scene clearly, i.e. knocking on a front door and inside the hallway. Cross Cutting: Bringing the two scenes in the spilt screen to life at the same time by freezing and starting the action. This needs to be well rehearsed. Transition: Moving from one scene to the next with professionalism and speed. Can be done in a stylised way too.	Assessment Criteria: - Mime - Body Props 8 States of Tension - Soundscape - voice & body percussion - Exaggerated characterisation - voice and body - Levels - Split screen - Body props - Clear beginning & ending - Transitions

Subject: ART

Topic: IMPRESSIONISM

YEAR 8 HALF TERM 1

Week 1: Introduction to Impressionism	Week 2: Impressionism in detail	Week 3: What inspired the Impressionist style?
Impressionism developed in France in the nineteenth century and is based on the practice of painting outdoors and spontaneously, rather than in a studio from sketches. Main Impressionist subjects were landscapes and scenes of everyday life. FAMOUS IMPRESSIONIST ARTISTS  Claude Monet Impression, Sunrise 1872  Auguste Renoir Bal du moulin de la Galette 1876  Edgar Degas La Classe de Danza 1873	Impressionism was developed by Claude Monet and other Paris based artists from the early 1860s. Instead of painting in a studio, the Impressionists found that they could capture the momentary and transient effects of sunlight by working quickly, in front of their subjects, in the open air. This resulted in a greater awareness of light and colour, which is shown in the quick brushwork used to render the fleeting quality of light. Plein Air Painting: The act of painting outdoors, as opposed to in an artist's studio Pointillism: The practice of applying small strokes or dots of colour to a surface so it seems that from a distance, they visually blend.	The rise of Impressionism can be seen in part as a response by artists to the newly established medium of photography. In the same way that Japonisme focused on everyday life, photography influenced the Impressionists' interest in capturing a 'snapshot' of ordinary people doing everyday things. Impression: A pictorial representation of someone or something Japonisme: A French term that refers to the popularity and influence of Japanese art and design among a number of Western European artists in the nineteenth century following the forced reopening of trade in Japan in 1858.
Week 4: Claude Monet (1840-1926)	Week 5: Drawing like an Impressionist	Week 6: Movements as a Historical Style
Claude Monet was born on 14th November 1840 in Paris, France. One of his most famous works is his 'Bridge Over a Pond of Waterlilies,' and is one of 250 works that he painted in his garden at Giverny. 	Movement (as a principle of design): How artists create the illusion of action or lead the viewers gaze through a composition. Texture: Describes the surface quality of an object, which can be real or implied. Real texture can be felt e.g tree bark, whereas implied texture creates the look of texture on a flat surface e.g drawing or painting. Mark-Making: Artists use mark making to convey emotion, create texture, and establish movement. Techniques range from loose, gestural scribbles to controlled, geometric marks like hatching and stippling.	An "Art Movement" refers to a collective shift where a group of artists adopts a similar philosophy, technique, or goal during a specific timeframe. Impressionism: A 19th-century French movement focused on capturing the fleeting effects of light and everyday life. Post-Impressionism: A late 19th-century French art movement (roughly 1886–1905) that reacted against Impressionism. Rather than just recording light and fleeting outdoor scenes, these artists focused on geometric structure, expressive brushwork, and bold, symbolic colours.

Computing

Computer systems and data science

YEAR 8 TERM 1

Week 1	Week 2	Week 3
Computer - an electronic device that processes data and performs tasks Program - a set of commands that can be run by a computer in order for it to do a task	Processor - the part of the computer that carries out instructions and makes decisions Random Access Memory (RAM) - where the computer temporarily stores data and instructions it is using Storage - where the computer keeps data and files permanently, even when it's turned off Execute - to run or carry out the commands in a program	Control - to manage or direct the behaviour of a system or process Operating system - the main software that manages a computer's hardware and allows other programs to run Hardware - the physical parts of a computer that you can see and touch
Week 4	Week 5	Week 6
Boolean - an expression that evaluates to either True or False Logic gate - an electronic component that carries out a logical operation Truth table - a table showing the outputs for all possible combinations of inputs to a logic gate or logic circuit	Analyse - to look at something carefully to understand it better Data pattern - a recurring trend, relationship, or structure found within a set of data Data cleaning - the process of detecting and correcting, or removing, corrupt or inaccurate data from a data set Data bias - when data is unfair or unbalanced, which can lead to wrong or unfair results	Artificial Intelligence - computer systems that adjust their outputs based on data or follow rules to perform complex tasks Machine Learning - a system that uses data to improve its output without being programmed Programming - the process of writing rule-based computer programs

Theme 1 : Weight Transfer (Connection between contexts)	Theme 2 : Passing (Creating space for passes)	Theme 3: Travelling and Movement (Using movement to create space)
Weight transfer (Recap): Moving your body weight from one position to another to create movement Same weight transfer used across contexts: One foot to the other (right to left or left to right): Football – Stepmover or feint Rugby – Side step/ Feint Handball – Side step/ feint Same movements with the same outcome- to beat the opponent Back foot to front foot: Football – Passing/shooting Rugby – Passing Handball- Passing/ Shooting Netball/ Passing All for power in execution.	Types of pass (recap): Rugby: - Depth, ensure there is good depth in the line to create space for passes, using pop for short depth, spin for medium depth and long passes to skip people in the line - Loop round once you have passed the ball to create more space Football: - Using a wall pass (1-2) to create space and lose defenders - Maintain width when team has the ball to create space for lofted and driven passes - Time the pass when players are in a good space Handball : - Using the width of the pitch and "D", over lapping/ underlapping once a pass has been made, using a mixture of overarm, underarm and bounce passes Netball: - Using weight transfer to dodge and double dodge to create space for an overhead pass - Passing the ball quickly between teammates with chest passes to move the ball up the court and into space	Rugby: - Ensure whole team moves up with the attacking line - Loop round to exploit spaces in the opponents line and drive through the gap when it is made Football: - Using body feints or step overs to beat an opponent 1v1 and create space to drive with the ball - Moving into space after a wall pass to create space - Moving out wide to create space for further passes Handball: - Fast transition from defence to attack - Constant overlaps and underlaps to find gaps in opponents defence Netball: - Dodge and double dodge to lose player - Moving into a new space once a pass has been made
Every Lesson	Every Lesson	
Components of a warm- up: Pulse raiser- Movements to increase heart rate, jogging, jumping etc. Static stretches – stretches held for 8- 12 seconds to prepare muscles for exercise Dynamic stretches- Movements that increase temperature of muscles and loosen joints	Naming the basic classification of joints being used to facilitate movement: Shoulder – Ball and socket Hip- Ball and Socket Elbow- Hinge Knee- Hinge Ankle- Hinge	