

# KNOWLEDGE ORGANISER



**Summer Term 2021**  
**Year 9**



**Name:** \_\_\_\_\_ **Form:** \_\_\_\_\_

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## How to use your Knowledge Organiser for Home Learning

- Knowledge Organisers contain critical knowledge that you must know
- It will help you recap, revisit and revise what you learn in lessons so that you remember it in the long term
- You will use your Knowledge Organiser for most of your homework, but you can also do extra self-study to develop your long term memory
- You **MUST** have your book with you every day and in every lesson as it will be used alongside your learning

### For homework:

- You will need to follow the homework timetable so you do the correct subjects on the correct day.
- You will be asked to look at a specific section of your Knowledge Organiser
- Your homework will be **cover – write – check**

This should take about 15 – 20 mins per subject.

- You must write the subject and date in your homework book
- You need to underline the subject and title as per lessons
- The knowledge learnt will be assessed throughout each cycle in lesson time
- Your form tutors will check that the work has been completed
- There will be rewards for excellent work and sanctions for work not completed



## HOME LEARNING PLAN:

- Your homework will be set **every Monday** on Class Charts
- Your homework book will be checked by your tutor **every Monday** after each week's homework to check you have evidence of your home learning
- Evidence can be highlighted notes, mind-maps, diagrams, flashcards
- The section of homework you need to learn from your Knowledge Organiser will be on Class Charts as normal
- Your tutor will give rewards for excellent home learning evidence, but there will also be a consequence for not completing the work or not having your book
- There will be an after school detention set for the **Tuesday evening** to complete your work if it has not been done
- You will be tested on what you have learnt by your subject teachers in your lessons
- Completing your home learning is **YOUR** responsibility



# Literacy Knowledge Organiser

## Books to read this term –

*Northern Lights* by Philip Pullman  
*The Red Scrolls of Magic* by Casandra Clare  
*The Sleeper and the Spindle* by Neil Gaiman

“The more that you read, the more things you will know. The more that you learn, the more places you’ll go.”

**Dr Seuss**

## SPAG Reminder for the term –

Sentences provide us with the framework for the clear written expression of our ideas. The aim in writing is always to write in complete sentences which are correctly punctuated. Sentences always begin with a capital letter and end in either a full stop, exclamation or question mark.

A complete sentence always contains a verb, expresses a complete idea and makes sense standing alone.

To check that you are writing in complete sentences, try reading your sentences aloud, pausing as indicated by the punctuation. Can each sentence stand alone as a complete thought? If further information is needed to complete the idea, then it is not a complete sentence.

Homophones are words that sound the same but are spelt differently and have different meanings. 'Their', 'they're' and 'there' are homophones that often confuse people.

‘Their’ means it belongs to them, eg "I ate their sweets."

‘They're’ is short for 'they are' eg "They are going to be cross."

‘There’ refers to a place, eg "I'm going to hide over there."

# Punctuation

## Full Stop

Used at the end of a complete sentence.



Example:  
And that is how the story ends.

## Exclamation Mark

Used to end a sentence to show a strong feeling or emotion like surprise, anger or shock.



Example:  
'Look up there!' she yelled.

## Comma

Used to separate parts of a sentence. It can also be used to separate items in a list.



Example:  
We had apples, cheese and water.

## Question Mark

Used to end a sentence that asks a question.



Example:  
What is the date today?

## Parenthesis / Brackets

Use to add additional information.



Example:  
He gave me money (£10).

## Dash

Can be used to add information / clarity instead of a colon or brackets.



Example:  
These people have the same responsibility - to serve to public.

## Ellipsis

Indicates that something has been left out / it is not finished.



Examples:  
I don't know... I'm not sure.

## Ampersand

Used to represent the word "and".



Example:  
At the zoo we saw lions, zebras, bears & monkeys.

## Colon

Use after a complete statement to introduce a list or example.



Example:  
You know what to do: practice.

## Speech Marks

Used to show that someone is speaking.



Example:  
The boy said "I don't know".

## Apostrophe

For contraction - used to show that some letters have been taken out of a word to shorten it.  
For example: Can not = Can't.

For possession - shows the object belongs to someone.  
For example: The dog's tail.



## Semicolon

Used to link two independent clauses that are closely related.



Example:  
My dad has a red car; he likes to wash it.



# NUMERACY

## Order of Operations

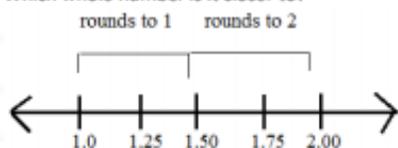
<b>B</b>	<b>Brackets</b>	$10 \times (4 + 2) = 10 \times 6 = 60$
<b>I</b>	<b>Indices</b>	$5 + 2^2 = 5 + 4 = 9$
<b>D</b>	<b>Division</b>	$10 + 6 \div 2 = 10 + 3 = 13$
<b>M</b>	<b>Multiplication</b>	$10 - 4 \times 2 = 10 - 8 = 2$
<b>A</b>	<b>Addition</b>	$10 \times 4 + 7 = 40 + 7 = 47$
<b>S</b>	<b>Subtraction</b>	$10 \div 2 - 3 = 5 - 3 = 2$

### Key Concept: Rounding to units, tens, hundreds and thousands

Round 5468.9  
 to the nearest whole number = 5469  
 to the nearest ten = 5470  
 to the nearest hundred = 5500  
 to the nearest thousand = 5000

### Key Concept: Rounding to nearest whole numbers

Place the number you are rounding on a decimal number line. Which whole number is it closer to?



### Describing numbers

- Numerals** – a number written down not in words (e.g. 3 or 40)
- Digit** – the numerals 0 to 9
- Integer** – whole numbers (e.g. 2 or 64)
- Decimals** – numbers between two whole numbers on a number line (e.g. 4.7 or 3.59)
- Place value** – The position of the digit in the number that tells you how much it is worth (e.g. the 4 in the number 432 is worth four hundred)

### Scale and metric

#### measurements

- Millimetre (mm)** – the thickness of a credit card
- Centimetre (cm)** – the width of a fingernail
- Metre (m)** – the length of a guitar
- Kilometre (km)** – the distance you can go in around 12 minutes walking

### #WHAT'S THE TIME?

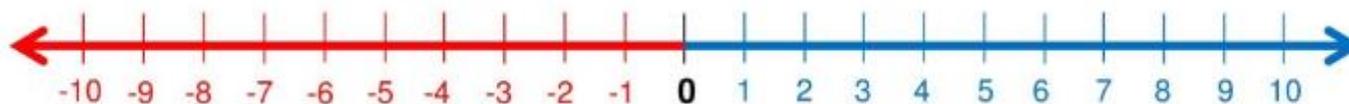
### Fractions

- Fraction** – part of a whole number or item
- Denominator** – how many parts the whole thing is split into (bottom)
- Numerator** – the number of those parts you have (top)
- Equivalent** – has the same value



Negative

Positive



← Decreasing/descending/getting smaller

Increasing/ascending/getting bigger →

### Command words

- Calculate/evaluate/find/work out/give** mean find the answer
- Simplify** means write in a different, more simple way
- Estimate/approximate** means use appropriate rounded values to find an



# ENGLISH

## | Reading for Study |

### Keywords

<b>Purpose</b>	What a text trying to do. Is it informative, advisory or persuasive.
<b>Tone</b>	The way a piece of text sounds e.g. sarcastic etc. The mood or atmosphere in the writing.
<b>Audience</b>	Who a text is aimed at.
<b>Thesis</b>	A statement or theory that is put forward as a premise to be maintained or proved.
<b>Formal</b>	Written for an audience you do not know on a personal level. It is often the main style in academic writing (unless otherwise noted) and is more complex than informal writing.
<b>Informal</b>	Informal writing is similar to a spoken conversation. Informal writing may include slang, figures of speech, broken syntax, asides and so on. Informal writing takes a personal tone as if you were speaking directly to your audience.
<b>Fiction</b>	Literature in the form of prose, especially novels, that describes imaginary events and people.
<b>Non fiction</b>	Prose writing that is informative or factual.

### Forms of Writing

<b>Letter</b>	The writer includes their personal address. The date is in the correct place. The writer includes the address of the person they are writing to. The salutation and sign off is appropriate for an unknown reader.
<b>Article</b>	The writer catches the reader's attention by including an engaging opening line. The writer gives some detail about the place she is describing. The writer clearly states her opinion and the focus of her article.
<b>Speech</b>	The writer directly addresses the reader without the need to ask questions that require an answer. The writer still includes detail relevant to the topic. The writer uses appropriate vocabulary that is not too complex for the audience to understand.
<b>Essay</b>	The writer considers the other side of the argument. The writer's thesis is clear and specific. We know the rest of their essay will look at the effects of a healthy diet and exercise.

### Grammar Reminders

<b>Subordinate clauses</b>	A clause, typically introduced by a conjunction, that forms part of and is dependent on a main clause
<b>Relative clauses</b>	A clause that is attached to an antecedent by a relative pronoun such as <i>who</i> , <i>which</i> , or <i>that</i> .
<b>Tenses</b>	Tense is the form of a verb that shows the time something happened, or is going to happen. There are three main tenses: Present tense: things that are true when the words are spoken or written.
<b>Conditionals</b>	Sometimes we call them 'if clauses'. They describe the result of something that might happen (in the present or future) or might have happened but didn't (in the past) .

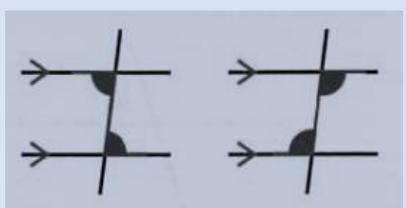
# Maths Year 9 Foundation

## Summer Term

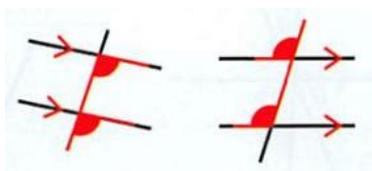
### Angles

Two shapes are **congruent** when they are exactly the same shape *and* size. Two shapes are **similar** when they are the same shape. Similar shapes may be different sizes.

**Parallel lines** are shown with arrows. When a line crosses two parallel lines it creates a 'Z' shape. Inside the Z shape are **alternate angles**. Alternate angles are equal.



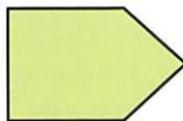
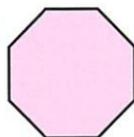
When a line crosses two parallel lines it creates an 'F' shape. Inside the F shape are **corresponding angles**.



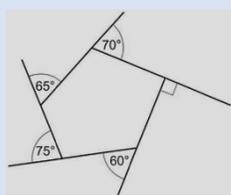
Corresponding angles are equal

Angles in a triangle sum to 180 degrees.

A **regular polygon** has all equal side lengths and all equal angles. An **irregular polygon** has unequal side lengths and unequal angles.



The sum of the exterior angles of a regular polygon is always 360 degrees



For shapes to fit together (**tessellate**), all the angles where the shapes meet must add up to 360 degrees

You can use algebra to solve more complex geometrical problems.

### Averages and range

To work out the mean of some values:

- 1) **add the values together**
- 2) **divide your answer by the number of values**

To calculate the mean from a frequency table, use  $mean = \frac{\sum f \times x}{\sum f}$  Where  $f$  is the frequency,  $x$  is the variable and  $\sum$  means the 'sum of'

The median is the middle value when the data is written in order. The median is in the  $\frac{n+1}{2}$  position

An outlier is an extreme value that doesn't fit the overall pattern

Estimate the range of grouped data using maximum possible value subtract the minimum possible value

The modal class is the class with the highest frequency

When the data is grouped, you can calculate an **estimate** for the mean using the midpoints of the classes as estimates for data values

In a survey, a **sample** is taken to represent the **population**. The sample must be chosen to carefully avoid **bias**

When considering sample size, you need to balance the need for accuracy with the costs and time involved in taking a large sample

In a **random sample**, every member of the population has an equal chance of being included

### Perimeter area and Volume

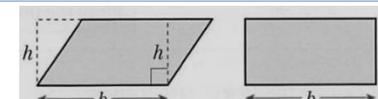
The perimeter of a 2D shape is the total distance all around the outside

The area of a 2D shape is the amount of space inside a shape

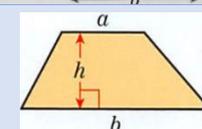
Area is measured in  $mm^2$ ,  $cm^2$ , or  $m^2$ . Large areas (e.g fields) are measured in hectares (ha). 1 hectare is the area of 100m x 100m square

The area of a rectangle = length x width ( $l \times w$ )

Area of parallelogram = base x vertical height



Area of trapezium  $\frac{1}{2} \times (a + b) \times h$



To find the area of a **compound shape**, draw lines to split the shape into simple shapes. Find the area of each shape separately. Add to find the total area

To find the area of a shape with another shape cut out, find the area of each shape separately. Subtract to find the area that is left.

To find the **surface area** of a 3D solid, work out the area of each face. Add to find the total surface area

The **volume** of a 3D solid is the amount of space it takes up. Volume is measured in  $mm^3$ ,  $cm^3$ , or  $m^3$

A prism is a 3D object whose cross-section is the same all through its length



Volume of a prism = area of cross-section x length

The **capacity** of a 3D object is the amount of liquid it can hold. Capacity is measured in  $cm^3$ , ml or litres

Area of triangle =  $\frac{1}{2} \times base \times vertical height$

# Maths - Year 9 Higher

## Summer Term

### Probability

A **linear equation** generates a straight (linear) graph

The equation for a straight-line graph can be written as  $y = mx + c$

**Parallel lines** have the same gradient.

To find the y-intercept of a graph, find the y-coordinate where  $x = 0$

A linear function has a graph that is a straight line

A **distance-time graph** represents a journey. Straight line means constant speed; horizontal line means no movement

The gradient of a straight-line graph is the rate of change

On a **velocity-time** graph. Straight lines mean constant acceleration. Horizontal lines mean no change in velocity.

When two lines are perpendicular, the product of the gradients is -1

A **quadratic equation** contains a term in  $x^2$  but no higher power of  $x$ . The graph of a quadratic equation is a curved shape called a **parabola**

A quadratic graph has either a **minimum point** or a **maximum point** where the graph turns.

A quadratic equation can have 0, 1, or 2 solutions

A **cubic function** contains a term in  $x^3$  but no higher power or  $x$ .

A cubic function can have 1, 2, or 3 solutions

No correlation or weak correlation shows that there is *no* linear relationship

The equation of a circle with centre (0, 0) and radius  $r$  is  $x^2 + y^2 = r^2$

### Area and Volume

Area of trapezium  $\frac{1}{2} \times (a + b) \times h$

To find the **surface area** of a 3D solid, work out the area of each face. Add to find the total surface area

The **volume** of a 3D solid is the amount of space it takes up. measured in  $\text{mm}^3$ ,  $\text{cm}^3$ , or  $\text{m}^3$

A prism is a 3D object whose cross-section is the same all through its length

Volume of a prism = area of cross-section  $\times$  length

The **capacity** of a 3D object is the amount of liquid it can hold. Capacity is measured in  $\text{cm}^3$ , ml or litres

The **circumference** of a circle is its perimeter. For any circle  $c = \pi x d$

The area of a circle  $A = \pi x r^2$

The volume of a cylinder of radius  $r$  and height  $h$  is  $V = \pi r^2 h$

The surface area of a cylinder of radius  $r$  and height  $h$  is  $2\pi r^2 + 2\pi r h$

For a sphere of radius  $r$  surface area =  $4\pi r^2$

$Volume = \frac{4}{3} \pi r^3$

Volume of cone

$\frac{1}{3} \text{ area of base } \times \text{ vertical height}$

## Transformations and Constructions

To describe a **rotation** you need to give the direction of turn (clockwise or anti-clockwise), the angle of turn and the **centre of rotation**

An **enlargement** is a transformation where all the side lengths of a shape are multiplied by the same **scale factor**

To describe an enlargement you need to give the **centre of enlargement** and the scale factor. To find the centre of enlargement, join corresponding points of the object and the image

To enlarge a shape by a fractional scale factor, multiply the distance from the centre to each point on the shape by the scale factor

A negative scale factor takes the image to the opposite side of the centre of enlargement

You can describe a translation using a **column vector**. The top number in the column vector gives the movement parallel to the x-axis and the bottom number gives the movement parallel to the y-axis.

A **bearing** is an angle in degrees, clockwise from north. A bearing always written using three digits

A **perpendicular bisector** cuts a line in half at right angle

An **angle bisector** cuts an angle in half

A **locus** is the set of all points that obey a certain rule. Often the locus is a continuous path.

# Science

## The atom

John Dalton  
**Atoms** are solid spheres. Different spheres are made from different **elements**.



JJ Thomson Measured **charge and mass**, showing atoms must contain **electrons** (-ve charges). Developed the plum pudding model. Electrons (-ve) **Positive 'filling'**



Ernest Rutherford He carried out **alpha particle scattering experiments**. If the plum pudding model was correct then the positive alpha particles should pass through or deflect slightly. A few particles are deflected backwards. This must mean there is a **positive** Most particles pass through, a few are deflected. **nucleus**.



Niels Bohr Realised that if the electrons were in a cloud the atom would collapse. Suggested that the electrons **orbit the nucleus in fixed shells**. Experiments supported this.



Further experiments have shown the nucleus is made up of **protons and neutrons**. James Chadwick carried out experiments to prove the existence of neutrons.

### Size of the atom

Atoms consist of a nucleus containing protons and neutrons, surrounded by **electrons in shells**. The numbers of particles in an atom can be calculated from its atomic number and mass number. The typical size of atoms and small molecules is around  $1 \times 10^{-10}$  m (0.1 nm).

diameter of a hydrogen atom, H	$1.0 \times 10^{-10}$ m
width of a hydrogen molecule, H <sub>2</sub>	$2.9 \times 10^{-10}$ m
length of an H-H bond	$0.74 \times 10^{-10}$ m

### Isotopes

Isotopes Different forms of the same **element**. Have the same number of **protons** but different number of **neutrons**. Have the same atomic number but different mass numbers

# Radiation

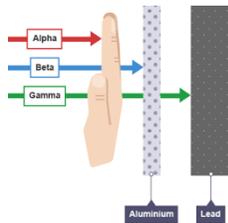
## Alpha, Beta & Gamma

If an **atomic nucleus** does not change or break down, we say that it is stable. Most nuclei are **stable**. However, some atomic nuclei are unstable and may change or break down. When this happens, they emit particles or rays, including:

**Alpha**- Alpha radiation is the **least penetrating**. It can be stopped (or absorbed) by a sheet of paper or a human hand.

**Beta**- Beta radiation **can penetrate** air and paper. It can be stopped by a thin sheet of aluminium.

**Gamma**- Gamma radiation is the **most penetrating**. It can penetrate air, paper or thin metal. It may only be stopped by many centimetres of lead or many metres of concrete.



## Effects of radiation on the human body

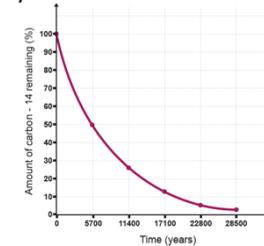
Radioactive materials are **hazardous**. Nuclear radiation **can ionise atoms** and molecules in the body, which may change the way cells behave. It can also transfer large amounts of **energy** into the body which can damage or destroy cells.

Effects that radiation has on a human body include: eye cataracts, cancer, skin burns and blood disorders (leukemia)

## Half life

Radioactive decay is a **random** process. Even if a nucleus is unstable, there is no way to tell whether it will **decay** in the next instant, or in millions of years' time.

However, even tiny pieces of material contain very many atoms. Some of its unstable **nuclei decay** in a short time, while others decay much later. So, we use the time in which **half** of any of these unstable nuclei will decay.



The half-life of a radioactive **isotope** is the time taken for half the unstable **nuclei** in a sample to **decay**.

## Uses of radiation

Irradiation for sterilisation

Medical irradiation

### Advantages

- sterilisation can be done without high temperatures
- it can be used to kill bacteria on things that would be damaged by heating

### Disadvantages

- It may not kill all bacteria on an object
- a person standing in the environment where objects are being treated by irradiation could suffer cell damage and cell mutation

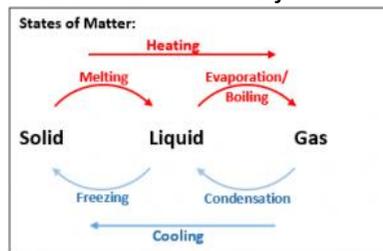
# Particle model, changes of state and density

## Particle model

The **particle model** explains how the particles that make up matter behave. A substance is made up of identical particles, and particles of any other substance have different **masses**. There are attractive forces between the particles. The size of the force differs for different substances. The particles are **ALWAYS** moving however how much they move, depends on what state they are in.

## Changes of state

A change of state is a physical change. It is the same **substance** just in a different form.



## Density

The density of a substance changes when it changes state. Its mass does not change. This is because its particles do not disappear - they are just rearranged and occupy a different **volume**.

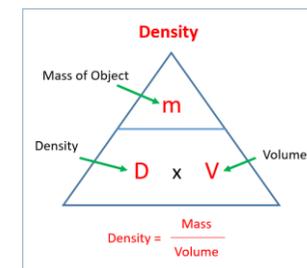
$$\text{mass} = \text{density} \times \text{volume}$$

## Units:

Mass kg or g

Volume  $\text{m}^3$

Density is mass per unit of volume



## Solids, liquids and gases

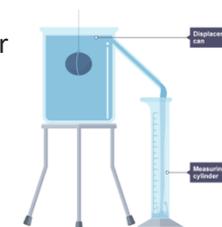
The particle theory of matter is a model that describes the arrangement and **movement of particles** in a substance. The model is used to explain the physical properties of solids, liquids and gases.

State	Solid	Liquid	Gas
Closeness of particles	Very close	Close	Far apart
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			

## Measuring the density of regular solids

1. place the object on the top pan balance and record its mass in grams
2. fill the displacement can until the water is level with the bottom of the pipe
3. place a measuring cylinder under the pipe, ready to collect the displaced water
4. carefully drop the object into the can and wait until no more water runs into the cylinder
5. measure the volume of the displaced water
6. use the measurements from steps 1

and 5 to calculate the density of the object

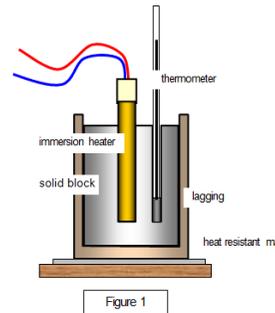


# Specific heat capacity and specific latent heat

## Specific heat capacity

Specific heat capacity the **energy** needed to **change the temperature** in a material.

An increase in temperature of a substance is always caused by energy being transferred. It can be transferred by burning a fuel, using an electric heater or doing mechanical work.



## Determine specific heat capacity of a substance

- 1) Record the mass
- 2) Set up your substance to a Joulemeter and it records zero
- 3) Record the temperature and turn on the power
- 4) Calculate the specific heat capacity of your substance and repeat 3 times to take an average

## Specific heat capacity- equation

Change in internal energy (joules) = Mass (kg) x specific heat capacity (J/Kg°C) x change in temperature (°C)

## Specific latent heat

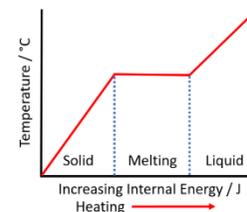
**Specific latent heat** is the **energy** needed to change state

The **specific latent heat** of a change of state for a substance is the change of energy when 1kg of the **substance changes state** without changing its temperature.

## Specific latent heat

Energy is needed to break the intermolecular bonds

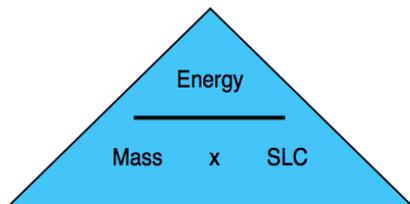
If you heat a substance enough, it will reach its **melting or boiling point** and start to change state. When a substance is **melting or boiling**, energy is transferred to the **potential energy** stores of the particles as the energy is used to break intermolecular bonds and move **molecules further apart**.



## Specific latent heat

The **specific latent heat** for changing between a solid and a liquid (melting and freezing) is called the **specific latent heat of fusion**. The specific latent heat for changing between a liquid and gas (boiling and condensing) is called the **specific latent heat of vaporisation**

Specific latent heat-equation



Be careful not to confuse specific latent heat with specific heat capacity!

# Energy and pressure

## Forces (elastic)

When you apply a force to an object, it can be squashed, compressed or twisted. This is what we call deformation.

## Hooke's law equation:

Force exerted by a spring (N) = Extension (m)  $\times$  spring constant (N/m)

$$F = x \times K$$

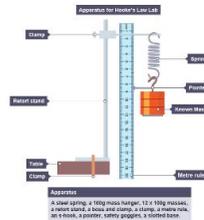
When a spring and mass are in **equilibrium** (the spring isn't stretching anymore) the force applied on the spring (the weight of the mass) is **equal** to the **force** exerted by the spring upwards on the **mass**.

## Hooke's law

The relationship between extension and force can be linear or non-linear

**Linear-** the extension of the stretched material is directly proportional to the load of force applied.

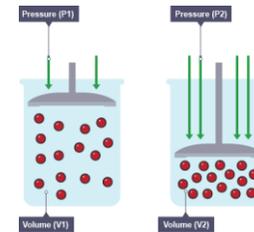
**Non- linear-** the extension of the stretched material is not directly proportional to the load of force applied



- 1) Attach the mass hanger s-hook and pointer to the lower end of the spring.
- 2) Read the pointer value from the metre rule. Record this length in a suitable table. This is the initial length of the spring for zero mass.
- 3) Add a 100g slotted mass to the hanger. Record the mass in kg in the table.
- 4) Read the new position of the pointer on metre rule. This is the stretched length of the spring. Record this length in the table.
- 5) Calculate the stretching force = weight of masses:  $W = mg$ .
- 6) Calculate: extension = stretched length – original length.
- 7) Repeat the procedure by adding 100g masses in steps of 100g up to 1200g.

## Gas pressure

Decreasing the volume of a gas **increases the pressure** of the gas. An example of this is when a gas is trapped in a cylinder by a piston. If the piston is pushed in, the gas particles will have less room to move as the volume the **gas occupies has been decreased**.



**Gas pressure** is caused when gas particles hit the walls of their container. The more often the particles hit the walls, and the faster they are moving when they do this, **the higher the pressure**.

# COMPUTER SCIENCE

# CPU AND PERFORMANCE

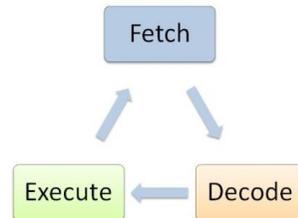
## KEY CONCEPTS

- Computer systems take data (input), process it and then output it.
- **Clock speed:** the number of instructions a processor can carry out per/second. Higher clockspeed = faster CPU.
- Number of **Cores:** The more cores a CPU has the more instructions it can carry out at once (multitasking). More cores = faster processing.
- **Cache size:** A larger cache gives the CPU faster access to more data

## FETCH - DECODE - EXECUTE CYCLE

CPU **fetches** instruction from the RAM (copies memory address to MAR, copies instruction to MDR & adds 1 to PC.

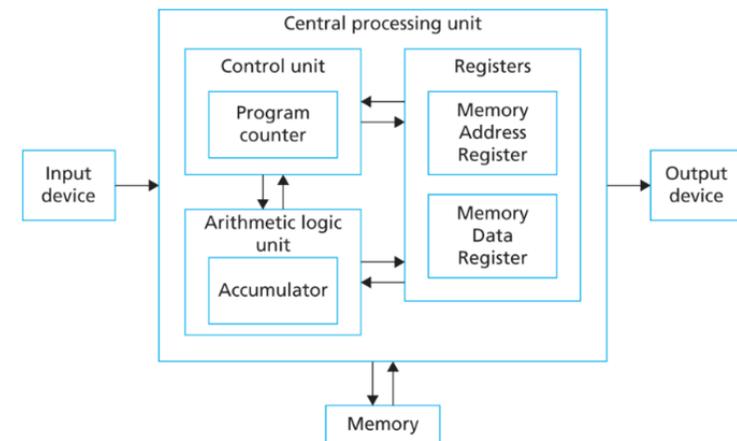
CU **decodes** the instruction from the MDR  
Instruction is **executed** by the CU  
The next instructions is fetched and  
The cycle repeats.



## EXAM QUESTIONS

1. Explain how cache size, cores and clockspeed affect the performance of the CPU.
2. Define what is meant by an embedded system
3. What is the purpose of the ALU?
4. Explain the role of the CPU registers (MAR and MDR)
5. Explain how the fetch decode execute cycle works

## THE CENTRAL PROCESSING UNIT (CPU)



**Control Unit (CU):** executes instructions and controls the flow of data in the CPU.

**Program counter:** holds the memory address for the instruction of each cycle.

**Arithmetic Logic Unit (ALU):** does all of the calculations and logic operations.

**Accumulator:** holds the result of any calculations in the ALU.

**Cache:** very fast memory that stores regularly used data so that the CPU can access it quickly.

**MAR (Memory Address Register):** holds the address about to be used by the CPU.

**MDR (Memory Data Register:)** holds the actual data or instruction being processed by the CPU.

# MEMORY and STORAGE

## RANDOM ACCESS MEMORY (RAM)

- RAM is the computer's main memory that holds the data, programs and files while they are being used.
- RAM is volatile (power off = the data is lost)
- The CPU will fetch instructions from the RAM in the fetch - decode - execute cycle.
- When the RAM is full the computer uses **VIRTUAL MEMORY**. It uses the secondary storage as temporary RAM so that the computer can continue running (but slowly).

## READ ONLY MEMORY (ROM)

- The ROM is on a chip build into the motherboard
- It contains the BIOS (boot up sequence for the computer)
- ROM is non-volatile (data still stored after power is off)

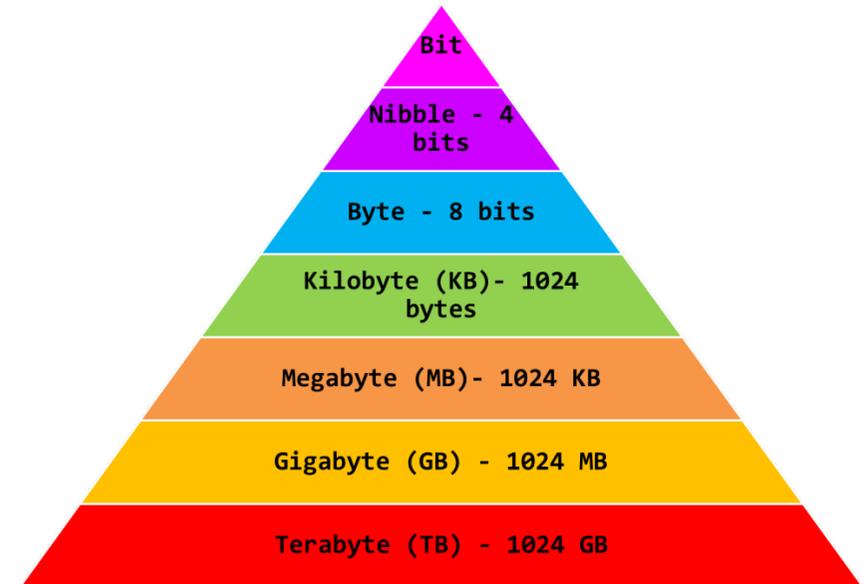
## TYPES OF STORAGE

- Secondary Storage: where all data including the programs are stored when they are not being used.

Storage	Key Information
Hard Disk Drive (HDD)	Magnetic, has moving parts, large capacity, lower cost than SSD
Solid State Drive (SSD)	Flash memory, no moving parts, more robust than HDD, faster and more expensive than HDD
Flash memory	Eg: USB memory sticks, memory cards.
Optical Storage	Eg: CDs, DVDs. Cheap, portable and fairly robust.
Magnetic tape	Used for archive storage (back ups). Very large capacity, low cost, slow.

## STORAGE CAPACITY

Some storage methods such as a HDD or SSD have a large capacity (they can store lots of data. Other devices such as CDs and SD cards have smaller capacity. Measurements of capacity are shown below:



## EXAM QUESTIONS

1. Explain how the RAM works with the CPU in the fetch -decode - execute cycle
2. Explain the difference between volatile and non-volatile memory giving an example of each
3. Tom is buying a new laptop, he is not sure whether to get a magnetic HDD or SSD. Discuss the benefits and drawbacks of each.

# WIRED AND WIRELESS NETWORKS

## Key Terms

A network is where devices have been connected together so that they can share data and resources. Networks can be wired (Ethernet) or wireless (WiFi).

Local Area Network (LAN)	Cover a small geographical area such as an office. Use their own infrastructure.
Wide Area Network (WAN)	WANs connect LANs together over a large geographical area and make use of infrastructure from telecommunications companies.
Bandwidth	The amount of data that can pass between network devices per second
Server	A device that provides services for other devices (eg file server or print server)
Client	A computer or workstation that receives information from a central server
Peer to peer Network	All of the computers in the network are equal. They connect directly to each other.
Standalone computers	A computer not connected to a network

## NETWORK HARDWARE

**Network Interface Controller (NIC):** built in hardware that allows a device to connect to a network.

**Switches:** connect devices on a LAN

**Router:** Transmits the data (packets) between the networks (eg: the internet and your LAN)

**Wireless Access Point (WAP):** a switch that allows devices to connect wirelessly.

**Cables:** the cables in a network can be twisted pair cables, coaxial cables or fibre optic cables.

## NETWORK PERFORMANCE

These factors can impact on network performance:

**Bandwidth:** The more bandwidth, the more data that can be transferred at a time.

**Number of Users:** Having a lot of people using a network means lots of data is being transmitted which can slow it down.

**Transmission Media:** Wired connections are faster than wireless. Fibre optic cables are faster than copper cables.

**Wireless Factors:** wireless can be affected by walls, distance, signal quality and interference from other devices.

**Topology:** The layout of a network can impact on its performance.

## TOPOLOGIES

**A topology is the layout of a network.**

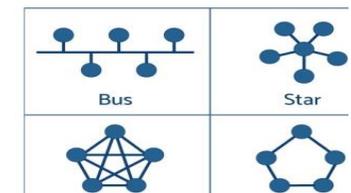
**Star:** If the central switch fails, the whole network fails. If one device fails, the network is fine.

**Mesh:** Each device is connected to every other device so they can send data the fastest route. There is no single point where network can fail. Require lots of wire.

**Ring:** Data moves in one direction which prevents collisions.

Only one device can send data at once.

**Bus:** Slow network on one cable



## Year 9 Ethics Knowledge Organiser Summer: Buddhism

Anatta	Belief that there is no fixed self/no soul; one of the Three Marks of Existence.
Annica	Impermanence. Belief that nothing is permanent; one of the Three Marks of Existence.
Buddha	An awakened or enlightened person.
chanting	Singing or rhythmic repetition of a word, prayer or sound.
concentration	Focusing one's attention; an important part of meditation and mindfulness of breathing.
craving	The ongoing state of desire which causes suffering; grasping at things we enjoy/want.
Dharma	<b>The teachings of Buddha</b>
Eight fold path	The fourth Noble Truth. Known as 'The Middle Way,' it includes the way to wisdom; mental training and the way of morality.
enlightenment	A state of wisdom that enables total clarity and understanding of the truths of existence;
ethics	Moral principles that inform behaviour and attitudes; part of the Eightfold Path.
The four noble truths	An important part of the Buddha's teachings
Karma	Literally 'action.' The belief in cause and effect, intentions and actions will affect the future.
meditation	A spiritual experience that opens a person up to the highest state of consciousness
Nirvana	The belief that individuals can achieve a state of perfect peace where they experience liberation from the cycle of birth, death and rebirth.
rebirth	This refers to the belief that when a being dies they are reborn.

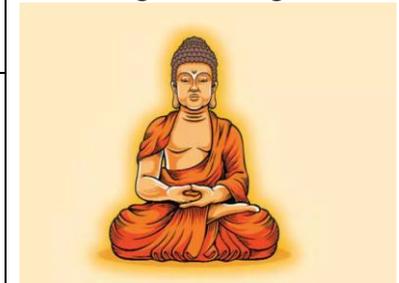
Buddhism started in India over 2,500 years ago. Buddhists follow the teachings of a man called **Siddhattha Gotama**. He became known as the **Buddha**, which means 'enlightened'.



### What do Buddhists believe?

Siddhattha Gotama was a prince who lived a life of luxury. When he was 29, Siddhattha went outside his palace and saw people suffering for the first time.

He decided to leave his palace and live among holy men in search of truth. His search took him six years, but he became enlightened while meditating under a fig tree.



Following this, Siddhattha became known as the Buddha, which means the 'awakened' or 'enlightened' one. From then on, he dedicated his life to spreading his teachings. The Buddha discovered that the answer lay in what have become known as the **Four Noble Truths**. Buddhists try to achieve enlightenment by understanding these important principles.

### . Where do Buddhists worship?

In Buddhist countries there are many temples. People bring flowers and incense for the shrine and food for the monks.

When entering a temple, Buddhists will take off their shoes, put their hands together and bow to the image of the Buddha.

Some Buddhists may also have a shrine within their home too.

### What is the Buddhist holy book?

The Buddhist scriptures are known as the **Tipitaka** which means 'three baskets'. This is because the original writings were made on palm leaves and stored in baskets.

The Tipitaka contains the teachings of the Buddha and his companions, comments on those teachings, as well as rules for monks. Buddhists call the teachings of the Buddha **dharma** which means 'truth'.

### The Four Noble Truths

An important part of the Buddha's teachings found in the Pali Canon, explaining the truth about existence. These include: suffering, the cause of suffering, the end of suffering, the path to the end of suffering



**Quizlet**

Use Quizlet on the internet – type **PCSA Ethics Yr9 Buddhism** It has different games to help you learn the spelling and meaning



Google Classroom has lots of revision resources for Ethics. It is particularly useful if you have missed any lessons.

## Year 9 Ethics Knowledge Organiser Summer: Islamic Beliefs

Akihrah	Belief in life after death.
Ashura	A very important festival
Day of Judgement	The day when Allah will decide about individual deeds, good and bad, and on reward or punishment.
Fasting	Not eating or drinking.
Jihad	To struggle
Islam	To surrender to the will of God
Ibrahim	One of the prophets of Allah. He rebuilt the Ka'aba
Jibril	The most important Angel.
Makkah/ Mecca	The city where Muhammad was born
The night of Power	The name for the night Muhammad received the first revelations of the Qur'an
Eid-al-Adha	Celebration of the Prophet Ibrahim's willingness to sacrifice his son for Allah, at the end of Hajj.
Eid-al-Fitr	Celebration that comes at the end of Ramadan and marks the end of fasting.
The scrolls of Abraham	These were individual revelations to Ibrahim that were written on parchment but have perished.
Ramadan	Month during which fasting from dawn to sunset is demanded
The Torah	This was given by Allah to Musa (Moses)

### Who was Muhammad?

Muhammad was the prophet and founder of Islam. Most of his early life was spent as a merchant. At age 40, he began to have revelations from Allah that became the basis for the Qur'an and the foundation of Islam. By 630 he had unified most of Arabia under a single religion. Today there are nearly 2 billion Muslims in the world who profess, "There is no God but Allah, and Muhammad is his prophet."

### Eid-al-Fitr & Eid-al-Adha



**Eid al-Fitr** - which means 'festival of the breaking of the fast' - is celebrated at the end of **Ramadan**, a month when many adult Muslims fast.

**Eid al-Adha** - which means 'feast of the sacrifice' - is celebrated just over two months later, at the same time when many Muslims perform the Hajj pilgrimage.

### Ibrahim & Ismail

Ibrahim experienced a dream one night, in which Allah told him to sacrifice Ismail his son. At first, Ibrahim believed this was the



devil playing tricks on him. Ibrahim loved his son but he was fully prepared to follow Allah's command. He took his son to the top of Mount Arafat and brought with him a knife and rope. Being an obedient son, Ismail immediately obeyed his father, and asked that his hands and legs be tied. At the last-minute Allah stopped Ibrahim and told him he looks after his followers and that he need not worry.

Mecca is in Saudi Arabia. Muhammad was born in Mecca and the religion of Islam started in Saudi Arabia. Every year about 3 million Muslims make their way to Mecca to celebrate Hajj. Muhammad was buried in Medina – another big city in Saudi Arabia.



**Quizlet**

Use Quizlet on the internet – type **PCSA Ethics Yr9 Islam** It has different games to help you learn the spelling and meaning

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# FRENCH - KNOWLEDGE ORGANISER YEAR 9

# Verbs

accrocher	to hang
apporter	to bring
assister	to assist/support
célébrer	to celebrate
chercher	to look for
coûter	to cost
dormir	to sleep

durer	to last
réserver	to reserve / to book
sensibiliser	to increase someone's awareness
voyager	to travel
s'arrêter	to stop
se déguiser	to dress up

fêter	to celebrate
se dépêcher	to hurry
se reposer	to relax
se retrouver	to meet
récolter	to collect
rire	to laugh

# Verbs

# France and Customs



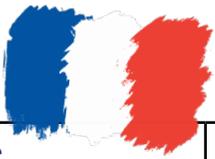
on fait la fête	we're celebrating
le bal	the dance, ball
le(s) cadeau(x)	gift(s)
le char	float
le défilé	parade
la fête	celebration/festival
la fête des rois	Twelfth Night/Epiphany
la fête du travail	May Day
les feux d'artifice	fireworks
militaire	military
le muguet	lily of the valley
la naissance	birth
le Noël	Christmas
Pâques	Easter
l'anniversaire	birthday
religieux	religious
le Saint-Valentin	Valentine's Day

le lendemain	the next day
demain	tomorrow
hier	yesterday



## la fête chez nous - how we celebrate

l'agneau	lamb	le jour férié	public holiday
la blague	joke	la pâte	dough, pastry
la boule de Noël	bauble	le réveillon de Noël	Christmas Eve
la bûche de Noël	Christmas log	le(s) cadeau(x)	present(s) / gift(s)
la Chandeleur	Pancake day	rigolo	funny
la crêpe	pancake	le sapin	Christmas Tree/ fir tree
la dinde	turkey	le père Noël	Father Christmas
les festivités	celebrations	un œuf de Pâques	an Easter egg
la fête des mères	Mothers' Day	la chaussette de Noël	Christmas stocking
l'huitre	oyster	les cloches de Pâques	Easter bells



## Partout, c'est la fête

## Francophone Festivals



l'affiche	poster
annulé	cancelled
la bande dessinée	cartoon strip
le billet	ticket
célèbre	famous
le comique	stand up comedian

contemporain	contemporary
déçu	disappointed
le dessinateur	cartoonist/illustrator
le festival	festival
gratuit(e)	free of charge
hilarant	hilarious

la lecture	reading
la pluie	rain
la programmation	schedule
le rire	laughter
le spectacle	show
libre	free (available)

### la fête pour tout le monde- celebrations for everyone

ma fête préférée	my favourite celebration
la boue	mud
le casque	helmet; headphones
le cirque	circus
les gens	people
informatif(-ive)	informative
les jeunes	young people
le jonglage	juggling
le/la malade	patient (m/f)
le métro	tube/underground
le numéro de cirque	circus act
se passer	to take place
passionnant	exciting
la scène	stage
le SIDA	AIDS
le spectacle de rue	street show
tout le monde	everybody
trop de monde	too many people
la recherche	research



### Picture Description

sur la photo	in the photo	un homme	a man
il y a	there is/there are	une femme	a lady/wife
il n'y a pas de	there is not/are not	un mari	a husband
je peux voir -	I can see	un garçon	a boy
je ne vois pas (de)	I don't see (any)	une fille	a girl
la photo est / représente	the photo is / represents	il/elle porte	he/she is wearing
un symbole de	a symbol of	après avoir fêté	after having celebrated
je pense/trouve que	I think/find that	le sport nautique	water sport
je crois que	I believe that	à gauche	(to / on the) left
je dirais que	I would say that	à droite	(to / on the) right

## What is development?

**Development is an improvement in living standards through better use of resources.**

<b>Economic</b> (money, jobs, inds)	This is progress in economic growth through levels of industrialisation and use of technology.
<b>Social</b> (people,culture)	This is an improvement in people's standard of living. For example, clean water and electricity.
<b>Environmental</b> (pollution,species )	This involves advances in the management and protection of the environment.

## Measuring development

**These are used to compare and understand a country's level of development.**

<b>Employment type</b>	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
<b>Gross Domestic Product per capita</b>	This is the total value of goods and services produced in a country per person, per year.
<b>Gross National Income per capita</b>	An average of gross national income per person, per year in US dollars.
<b>Infant mortality</b>	The number of children who die before reaching 1 per 1000 babies born.
<b>Literacy rate</b>	The percentage of population over the age of 15 who can read and write.
<b>Life expectancy</b>	The average lifespan of someone born in that country.
<b>Human Development Index (HDI)</b>	A number that uses life expectancy, education level and income per person.

## Reducing the Global Development Gap

<b>Tourism</b> This is where countries attract people from other countries.	<b>Foreign-direct investment</b> This is when one country buys property or infrastructure in another country.
<b>Aid</b> This is given by one country to another as money or resources.	<b>Debt Relief</b> This is when a debt is cancelled or interest rates are lowered.
<b>Fair trade</b> This is a movement where farmers get a fair price for the goods produced.	<b>Technology</b> Includes tools, machines and affordable equipment that improve quality of life.



# Geography: Our developing world

## Variations in the level of development

<b>LICs</b>	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.
<b>NEEs</b>	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
<b>HICs</b>	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.

## Factors affecting uneven development

Physical Factors	Human Factors
<ul style="list-style-type: none"> <li><b>Natural resources</b> eg energy sources, access to water, mineral deposits.</li> <li><b>Climate</b> eg extreme climates limit development.</li> <li><b>Natural hazards</b> eg risk of earthquakes and flooding limits development.</li> <li><b>Location/terrain</b> eg land locked countries cannot trade.</li> </ul>	<ul style="list-style-type: none"> <li><b>Aid</b> eg aid can improve services such as hospitals.</li> <li><b>Trade</b> eg countries which export products can earn money</li> <li><b>Education</b> eg a skilled workforce can earn more money.</li> <li><b>Politics</b> eg corruption can mean that money isn't being spent fairly.</li> </ul>

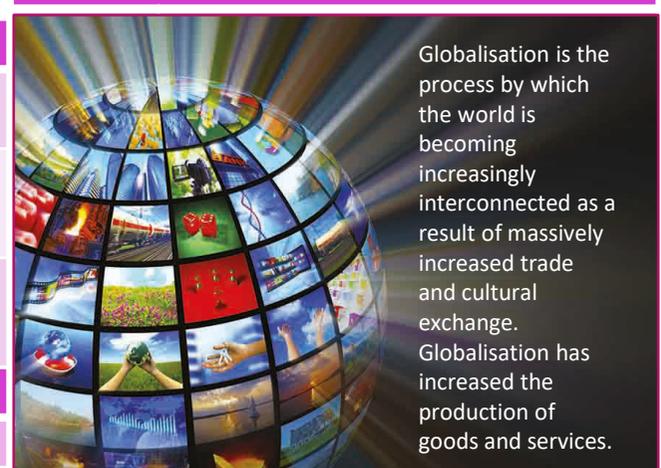
## Consequences of Uneven Development

<b>Wealth</b>	People in more developed countries have higher incomes than less developed countries.
<b>Health</b>	Better healthcare means that people in more developed countries live longer than those in less developed countries.
<b>Migration</b>	If nearby countries have higher levels of development or are secure, people will move to seek better opportunities and standard of living.

## The Demographic Transition Model



## Globalisation



Globalisation is the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange. Globalisation has increased the production of goods and services.

## Is Nigeria an NEE?



Nigeria is located in south west Africa. Nigeria is often called the "Giant of Africa." This name comes from the vastness of its land, the diversity of its peoples and languages, its huge population (the largest in Africa), and its oil and other natural resources. Lagos is Nigeria's and Africa's fastest growing city and it experiences effects as a result – both positive and negative. There are huge disparities of wealth in Nigeria – from the very rich to the very poor.

STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
High DR High BR Steady	BR High Declining DR Very High	Rapidly falling BR Low DR High	Low DR Low BR Zero	Slowly Falling DR Low BR Negative
e.g. Tribes	e.g. Kenya	e.g. India	e.g. UK	e.g. Japan

## Year 9 History Cycle 3 Medicine through time.

### The Medical Renaissance in England, 1500-1700

#### Renaissance England.

The Renaissance was the period between 1500-1700 in England. Art and Science were growing in importance.

#### Key events:

**1543** – Vesalius published The Fabric of the Human Body. It showed how the human body worked.

**1565** – the first dissection was carried out in Cambridge.

**1628**- Harvey published his book An Anatomical Account of the Motion of the Heart and Blood which showed blood moving around the body.

**1645** – The first meeting of the Royal Society.

**1665**- The Great Plague in London. 75,000 died.

#### Key words:

Continuity	Microscope
London Treacle	Thermometer
Autopsy	Mortality Bill
Diagnosing	Pesthouse
Royal Society	Printing
Anatomy	Physiology

#### Key Concepts of Medical Renaissance:

**The King** – People still believed that the King could cure diseases such as scrofula (a skin disease). Being touched by the King was as close as you could get to being touched by God.

**Renaissance** – this was a time of change (re-birth) when people became interested in all things Greek and Roman. Printing was developed so that books could be published (e.g. Galen, Vesalius). People realised the Greeks had loved enquiry – asking questions and challenging old ideas.

**Evidence** – rather than believing & accepting old ideas (e.g. The Four Humours) without question, scientists and doctors were more willing to experiment (e.g. dissecting bodies). People started to look to evidence over tradition.

#### Key people of Renaissance Medicine:

Thomas Sydenham  
William Harvey  
Andreas Vesalius

## Medicine in 18th and 19th century Britain

#### 18th and 19th century Britain.

This was a time of breakthroughs in medicine in England. There were many scientific discoveries but also many Public Health problems.

#### Key Words:

Vaccine  
Sanitation  
Smallpox  
Workhouse  
Anaesthetic Drugs  
Dispensary  
Infection  
Voluntary hospital  
Cholera  
Chloroform  
Germ Theory  
Industrial Revolution  
Antiseptic  
Breakthrough  
Medical Officer  
Public health  
Contagion  
Epidemic

#### Key people of 18th and 19th Century medicine.

Robert Koch  
Florence Nightingale  
Edward Jenner  
John Snow

#### Key Concepts of Medicine in the 18<sup>th</sup> & 19<sup>th</sup> Century:

**Nursing** – Nurses are responsible for the care of patients in hospital. Before 1800, hospitals were dangerous places where death was very likely. The development of nursing changed that.

**Breakthrough** – a scientific discovery that dramatically alters the way people understood disease – e.g. the discovery of bacteria. This then helps the problem to be solved.

**Public Health** – when the government takes measures to prevent diseases spreading and to help the population become healthier. The government increasingly took on this role after the development of germ theory.

#### Key events:

**1798:** Edward Jenner developed the first vaccine for Smallpox.  
**1847:** James Simpson developed chloroform as an anesthetic.  
**1854:** John Snow's maps proved the source of cholera.  
**1861:** Louis Pasteur's germ theory was published.  
**1867:** Lister used antiseptic to prevent infection.  
**1875:** The Public Health Act.  
**1882:** Robert Koch identified bacteria that caused specific diseases.

# Year 9 History Cycle 3 **Medicine through time.**

## Medicine in modern Britain. 1900-Present.

### Modern Britain

From 1900-Present, there have been massive changes in medicine and treatment.

### Key words:

X-Ray Technology  
 Transplant  
 Radiotherapy/Chemotherapy  
 Superbugs  
 Gene therapy  
 Dialysis  
 Polio  
 Penicillin  
 Pacemaker  
 Antibiotics  
 Magic bullets  
 Electron microscope  
 DNA  
 Cancer

### Key people:

Rosalind Franklin  
 James Watson  
 Francis Crick  
 Paul Ehrlich  
 Hata  
 Winston Churchill  
 Alexander Fleming  
 Howard Florey  
 Ernst Chain  
 Aneurin Bevan  
 NHS

### Key events:

**1900** – life expectancy was still below 50 years of age.

**1911** – National Insurance Bill introduced – gave help if workers were sick or unemployed.

**1914-1918 World War One** leads to developments in surgery and treatment.

**1928** – Fleming discovered penicillin.

**1938** – Florey and Chain developed use of penicillin.

**1948** – The NHS begins following the Beveridge report (1942)

### Key Concepts:

War – World War One and World War Two forced developments in treatment and surgery – e.g. plastic surgery and the use of antibiotics in WW2.

Technology – huge improvements in technology greatly improved the understanding and treatment of disease – e.g. X-ray, DNA, Pacemakers, dialysis and keyhole surgery.

National Health Service - After WW2, the government introduced the NHS in 1948. This offered free healthcare at the point of delivery. The expansion of who could vote and the shared experience of suffering in WW2 bought about this development.

# The British sector of the western front 1914-18 injuries, treatments and the trenches.

### Using sources key words:

Source	Useful
Provenance	
Contextual knowledge	
Nature	Suggests
Origin	Supports
Purpose	Accurate
Evidence	Atypical
Typical	

### Possible sources of evidence about medicine on the Western Front:

Photographs  
 Diaries  
 Autobiographies/memoirs/ interviews of soldiers or different medical staff  
 Newspaper reports  
 Doctors'/surgeons' medical journals  
 Military records showing...  
 RAMC records of...

### Key words:

The Western Front  
 RAMC (Royal Army Medical Corps)  
 Trenches  
 Triage  
 Arras underground network.  
 Field Ambulance  
 Front line

### New treatment techniques in WW1

1. Wounds and infection:
  - The Carrel-Dakin method
  - Debridement
  - Amputation
2. The Thomas Splint
3. Mobile x-ray units:
4. Blood transfusions:
5. Brain surgery
6. Plastic surgery:

### The chain of evacuation

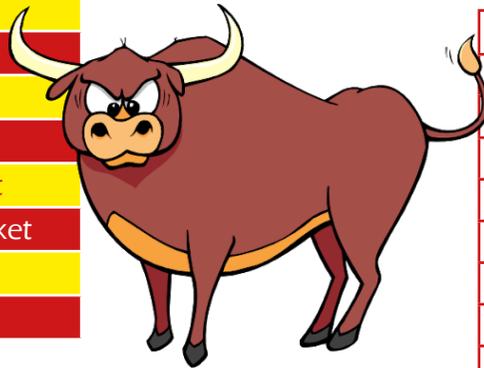
Regimental Aid Posts (RAP)  
 Dressing Stations (ADS and MDS)  
 Casualty Clearing Stations  
 Base Hospitals

### Major battles of the Western Front.

- Oct-Nov 1914 - First Battle of Ypres
- April 1915 - Hill 60
- Apr-May 1915 - Second Battle of Ypres
- July - Nov 1916 - Battle of the Somme
- Apr - May 1917 - Battle of Arras
- July - Nov 1917 - Third Battle of Ypres
- Oct - Dec 1917 - Battle of Cambrai

# Year 9 Spanish - Cycle 3

Mi ciudad	- My city
hay	- there is/are
el banco	- the bank
la biblioteca	- the library
la calle	- the street
la catedral	- the cathedral
el cine	- the cinema
la estación de trenes	- train station
el estadio	- the stadium
la iglesia	- the church
el instituto	- the school
la mezquita	- the mosque
el museo	- the museum
el parque	- the park
la plaza de toros	- the bullring
el restaurante	- the restaurant
el supermercado	- the supermarket
la tienda de ropa	- clothes shop
tranquilo/a	- quiet



## Por eso voy allí That's why I go there

apoyar	- to support
comprar	- to buy
estudiar	- to study
ir	- to go
leer	- to read
observar	- to observe
pasear	- to go for a walk
ver	- to watch
viajar	- to travel
visitar	- to visit

## Planes para el finde

bailar en la discoteca
cantar en el coro
el fin de semana
ir a un concierto
ir de compras
nadar en el mar
practicar judo
salir con amigos
va a ser
ver una exposición
viajar en tren

## Plans for the weekend

to dance in a club
to sing in the choir
the weekend
to go to a concert
to go shopping
to swim in the sea
to do/practise judo
to go out with friends
it's going to be
see an exhibition
to travel by train



## ¡Sigue todo recto !

## Go straight on !

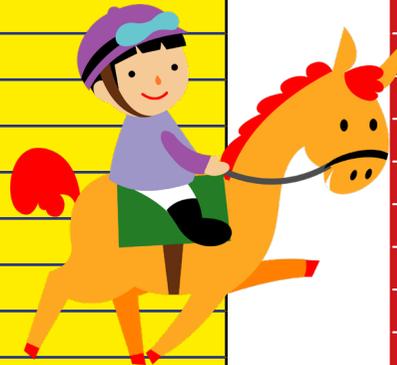
¿Por dónde se va... ?-	How do you get to ...?
cruzar	to cross
pasar	to go past
tomar	to take
la primera	the 1st
la segunda	the 2nd
la tercera	the 3rd
a la derecha	on the right
a la izquierda	on the left
al final	at the end
la plaza	town/village square
el semáforo	traffic lights

## ¡Uff! ¡Que rollazo!- How dull!

aburrido	- boring	el/la profesor(a) es	- the teacher is
difícil	- difficult	despistado/a	- forgetful
divertido	- fun	estricto/a	- strict
duro	- hard	gracioso/a	- funny
fácil	- easy	guay	- cool
interesante	- interesting	inteligente	- intelligent
práctico/a	- practical	tolerante	- tolerant
útil	- useful	trabajador(a)	- hard-working

# Year 9 Spanish - Cycle 3

¿La ciudad o el campo?	The city or the country?
el aire	the air
la alergia	allergy
allí	there
aquí	here
complicado/a	complicated
la contaminación	pollution
conveniente	convenient
cosmopolita	cosmopolitan
la cultura	culture
el espacio	space
estresante	stressful
hay mucho que hacer	there is a lot to do
lento/a	slow
montar a caballo	to go horse riding
la naturaleza	nature
no me importa	it doesn't matter to me
la oportunidad	opportunity
la paz	peace
el peligro	danger
peligroso/a	dangerous
rápido/a	fast
el ruido	noise
ruidoso/a	noisy
tan	so
tan...como	as...as
al contrario	on the other hand
no es verdad	it's not true
no estoy de acuerdo	I don't agree
sobre todo	above all



## Mi barrio con nostalgia - Memories of my area

actualmente	- currently	diferente	- different
ahora	- now	fresco/a	- fresh
era	- it was	lejos	- far
existir	- to exist	el parque de atracciones	- theme park
había	- there was	público/a	- public
hoy	- today	recorrer	- to go across
el pasado	- the past	la red	- network
el acceso	- access	sucio/a	- dirty
las afueras	- the outskirts	tradicional	- traditional
AVE	- high speed train	el tren de vapor	- steam train
el barco	- the boat/ferry	el turismo	- tourism
cerca	- near	variado/a	- varied
contener	- to contain	la variedad	- variety

## Todo lo que estudio- Everything I study

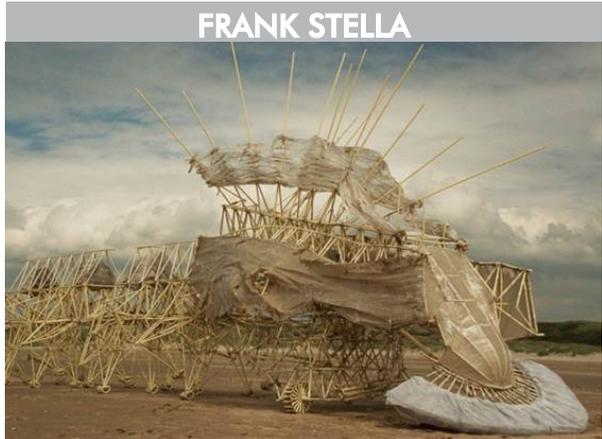
las asignaturas	subjects	el inglés	English
la clase	the class	las matemáticas	maths
¿Qué estudias ?	What do you study?	la música	music
estudio	I study	la química	chemistry
la biología	biology	el teatro	drama
las ciencias	science	la tecnología	technology
el dibujo	art	el colegio	school
la educación física	P.E.	estudiar	to study
el español	Spanish	el instituto	school
la física	physics	obligatorio/a	compulsory
el francés	French	me aburre	it bores me
la geografía	geography	me anima	it cheers me up
la gimnasia	gymnastics/P.E.	me apasiona	it's a passion of mine
la historia	history	me da igual	it's all the same to me
los idiomas	languages	me entretiene	it entertains me
la informática	ICT		



# Art STRUCTURES

## Structures

Artists, designers and crafts people are often inspired by 'structures'. This can be a building or other object constructed from several parts. They can be inspired by organic forms, the natural or urban landscape and architectural construction.



FRANK STELLA



BARBARA HEPWORTH

**Brief:**

Otter Nurseries are looking for young designers to design and make a 3D sculptural piece for the entrance to the garden centre. The sculpture will be displayed inside the foyer and needs to be inspired by either organic forms, the natural or urban landscape and architectural constructions. Designers need to focus on the form and shape within their outcome.

<b>Key Words</b>	architecture	structure
	3D	organic
	form	shape
	construct	build
	sculpt	juxtaposition

## Quotes

**"All ideas grow out of other ideas."**

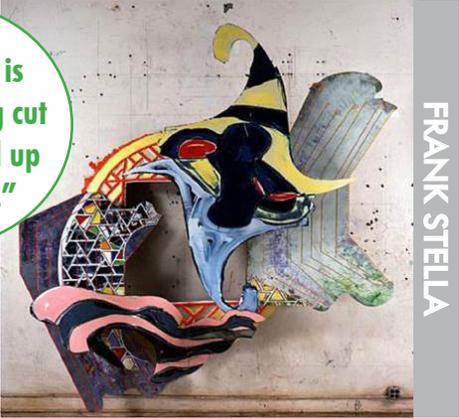
Anish Kapoor



ANISH KAPOOR

**"A sculpture is just a painting cut out and stood up somewhere."**

Frank Stella



FRANK STELLA



PABLO PICASSO

<b>Formal Elements:</b>			
shape	form	26	volume

### Top Tips

- Think three dimensional.
- Remember shape is 2D and form is 3D.
- Be adventurous and take creative risks in your 3D work.



ANTHONY CARO



HENRY MOORE



NAUM GABO

- Home Learning:**
1. Insightful artist research.
  2. Own photos of local structures.
  3. Images of walnuts.
  4. Visual inspiration - organic, urban, natural, architectural.
  5. Bring in recycled materials.
  6. Evaluation.



## 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.

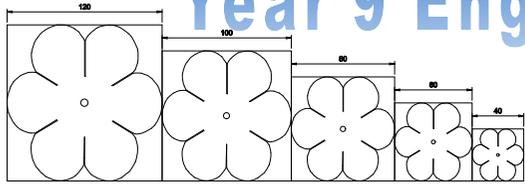
## DRAMA LOG BOOK

**Section 1:**  
Response to stimulus

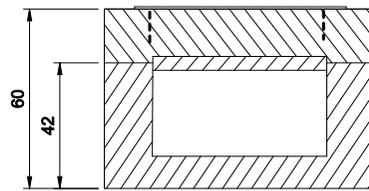
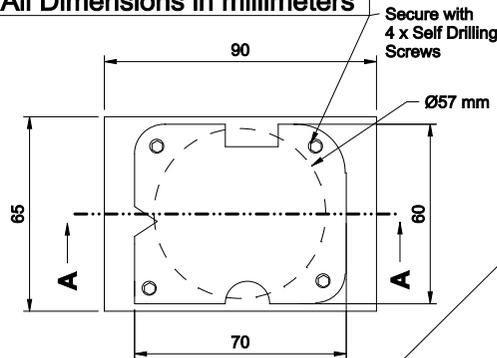
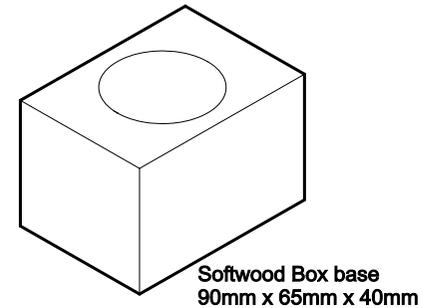
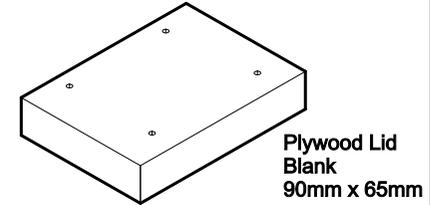
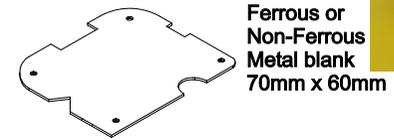
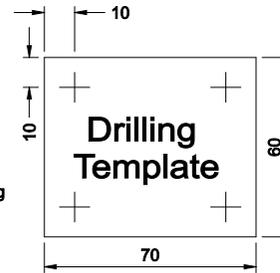
**Section 2:**  
Development and collaboration

**Section 3:**  
Analysis and evaluation

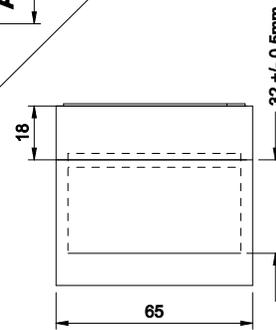
# Year 9 Engineering Knowledge Organiser



Year 9 Decorative Box  
Engineering Practical Project  
MXM DRG 1  
September 2019  
Scale 1:2  
All Dimensions in millimeters



Section on A - A



Ferrous or Non-Ferrous Metal blank  
70mm x 60mm

Plywood Lid Blank  
90mm x 65mm

Acrylic Lid Locator Blank Dia  
57mm +/- 0.2mm

Softwood Box base  
90mm x 65mm x 40mm

BEING SAFE THE WORKSHOP



Always secure work to be drilled in a machine vice

or hand vice.

Always wear your apron.

Always check the condition of tool or machine before you use it.

**!ALWAYS ACCESS RISK!**



Steel Rose Project- Mild Steel

The Rose is made from mild steel which contains approximately 0.05–0.25% carbon making it malleable and ductile. Mild Steel has a low tensile strength compared to other metals. It is relatively inexpensive and can be formed quite easily using workshop tools and equipment for example metal snips, ball peen hammer, cold chisel, centre punch and formit machine. Mild steel must always be secured in a hand vice or machine vice when being drilled.

Cold working of steel is done when the metal is at room temperature. Cold working of the steel will make the steel harden and become brittle.

To achieve the fine organic details of the rose petals, the metal is hot worked. The mild steel is heated to red heat increasing its ductility and malleability. Long nosed pliers are used to shape and form. Take care with hot metal !

READ DRAWINGS: ISOMETRIC, EXPLODED & ORTHOGRAPHIC

PLAN

ENGINEERING

MAKE

PROCESS

EVALUATE



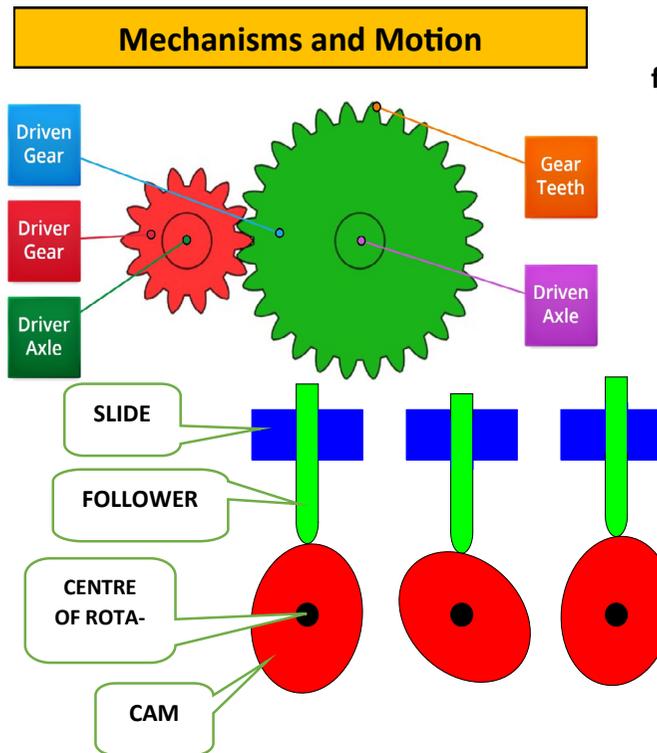
Absorbent –	<i>soaks up water</i>
Brittle –	<i>hard but easily broken</i>
Colour -	<i>is how a material looks to the human eye.</i>
Conductivity-	<i>the ability of a material to conduct heat or</i>
Ductile-	<i>can be stretched into wire.</i>
Elasticity -	<i>ability if a material to resume normal shape</i>
Flexible –	<i>can be bent</i>
Hard –	<i>difficult to scratch or squash</i>
Luster-	<i>Metals are shiny when cut, scratched, or</i>
Magnetic –	<i>attracted to a magnet</i>
Malleable -	<i>can be beaten into thin sheets.</i>
Natural –	<i>not man-made</i>
Opaque –	<i>you cannot see through it,</i>
Plasticity -	<i>can change in shape permanently</i>
Rigid –	<i>cannot be bent</i>
Rough –	<i>uneven surface</i>
Shiny –	<i>reflects lights</i>
smooth –	<i>even surface</i>
Stiffness -	<i>the extent to which a material resists being</i>
Strong –	<i>difficult to break</i>
Synthetic –	<i>man-made</i>
Tensile Strength -	<i>can stretch without breaking or snapping</i>
Toughness -	<i>ability of a material to being hit or knocked.</i>
Translucent –	<i>you can see through it a bit,</i>
Transparent –	<i>you can see completely through it</i>
Waterproof –	<i>does not soak up water or let water through</i>

**Metals:** There are three types of metal:- Ferrous Metal, Non Ferrous Metal and Alloys. Ferrous metals contains carbon e.g. steel, and Non-ferrous do not, e.g. Aluminium. *Alloys contain two or more metals e.g. Brass, Bronze and Zinc.*

**Plastics:** There are two types of plastic:- Thermosetting Plastic and Thermoplastic. E.g. Acrylic and Polythene are Thermoplastics and can be recycled, Polyester Resin and Melamine are Thermoset materials and cannot be recycled.

**Woods:** There are two types of wood:- Natural woods and manmade or “engineered” woods.

**Smart Materials:** These are modern materials that have amazing properties. They can be metal, wood or plastic, or a combination. They can re-shape and be reformed. They can be engineered to react to temperature changes and changes in electrical current. Examples are Piezo electrics, Shape memory Alloys and polymers.



Gears transfer rotational energy from one gear to another. They are used to control the speed of machines.

The twisting or turning force is known as TORQUE

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

Reciprocating motion is up and down in a straight line

PLAN

ENGINEERING

MAKE

PROCESS

EVALUATE

Name:

Date:



## Knowledge, learning and recipe ideas

Macronutrients		
Carbohydrate		
Key knowledge	Key learning points	Recipe ideas
<p><b>Source</b> All starchy foods, such as bread, rice, potatoes, pasta, cereals and cereal products; fruit and starchy vegetables, milk and milk products, sugar, preserves and confectionery.</p>	<ul style="list-style-type: none"> <li>• Two types of carbohydrate providing dietary energy—starch and sugar</li> <li>• Dietary fibre is also a type of carbohydrate</li> <li>• Non-starch polysaccharides</li> <li>• Dextrinization</li> <li>• Caramelisation</li> <li>• Gelatinisation</li> </ul>	<ul style="list-style-type: none"> <li>• Scones/scone based pizza</li> <li>• Lasagne (roux sauce)</li> <li>• Macaroni cheese</li> <li>• Potato and rosemary loaf</li> <li>• Couscous</li> <li>• Tuna and broccoli pasta</li> <li>• Swiss roll</li> </ul>
<p><b>Function in the body</b> Provides energy for the body.</p>		
Protein		
<p><b>Source</b> Meat, fish, eggs, dairy foods, cereal products such as bread, soya products, nuts and pulses.</p>	<ul style="list-style-type: none"> <li>• Denaturation—mechanical and enzymic</li> <li>• Foam formation</li> <li>• Gluten formation</li> <li>• Acid denature</li> <li>• Coagulation</li> <li>• Gelation</li> </ul>	<ul style="list-style-type: none"> <li>• Bread</li> <li>• Sponge cake</li> <li>• Quiche</li> <li>• Tandoori chicken</li> <li>• Spicy bean burgers</li> <li>• Meringue</li> <li>• Fruit jelly</li> <li>• Choux pastry</li> </ul>
<p><b>Function in the body</b> Protein provides amino acids, some of which we can't make ourselves and so need to get from our diet. Needed for normal growth and maintenance of health. Also provides energy.</p>		

Fat		
Key knowledge	Key learning points	Recipe ideas
<p><b>Source</b> Fats and oils, meat and meat products, dairy foods, oily fish, nuts, cakes, biscuits, pastry products, crisps and other snacks, chocolate.</p> <p><b>Function in the body</b> Fat provides essential fatty acids (that we can't make ourselves but need in small amounts) as well as energy. Required for a range of bodily processes and to maintain the normal structure of cells in the body. It also carries essential fat-soluble vitamins and is important for their absorption.</p>	<ul style="list-style-type: none"> <li>• Saturated and unsaturated</li> <li>• Shortening</li> <li>• Plasticity</li> <li>• Aeration</li> <li>• Flakiness</li> <li>• Emulsification</li> </ul>	<ul style="list-style-type: none"> <li>• Marvellous mackerel pate</li> <li>• Cheese and onion triangles</li> <li>• Marble tray bake</li> <li>• Cheese straws</li> <li>• Pastry—short and rough puff</li> <li>• Creaming method/all in one</li> <li>• Granola bars/flapjacks</li> </ul>
Micronutrients		
B vitamins, e.g. thiamin, riboflavin, niacin, B6, B12		
<p><b>Source</b> Meat, fish, eggs, dairy foods, cereal products such as bread, soya products, nuts and pulses.</p> <p><b>Function in the body</b> Help to release energy from food. Helps with the function of the nervous system, and the maintenance of healthy skin.</p>	<ul style="list-style-type: none"> <li>• Water soluble vitamin</li> <li>• Many types of vitamin B within this group</li> </ul>	<ul style="list-style-type: none"> <li>• Pitta pockets</li> <li>• Moroccan lamb kebabs</li> <li>• Lemon and herb coley goujons</li> <li>• Omelette</li> </ul>
Vitamin C		
<p><b>Source</b> Fruit especially citrus fruits and berries; green vegetables, peppers and tomatoes. Also found in potatoes.</p> <p><b>Function in the body</b> Helps to protect cells from damage. Helps with the formation of collagen, which is important for normal bones, gums, teeth and skin. It also helps the immune system work as it should and the nervous system to function normally.</p>	<ul style="list-style-type: none"> <li>• Water soluble vitamin</li> <li>• Enzymic browning</li> <li>• Knife skills</li> <li>• Aids the absorption of iron</li> <li>• Oxidisation</li> </ul>	<ul style="list-style-type: none"> <li>• Vegetable kebabs</li> <li>• Chunky vegetable soup</li> <li>• Fruit salad kebabs</li> <li>• Fruit fusion</li> <li>• Potato curry</li> </ul>

Calcium		
Key knowledge	Key learning points	Recipe ideas
<p><b>Source</b> Milk and milk products, cheese and other dairy products, some green leafy vegetables such as broccoli, fortified soya bean products, canned fish (if containing bones that are soft and can be consumed) and bread.</p>	<ul style="list-style-type: none"> <li>• Absorption promoted by vitamin D</li> <li>• Absorption inhibited by phytates (wholegrain cereals, pulses) and oxalates (spinach, rhubarb, beetroot)</li> </ul>	<ul style="list-style-type: none"> <li>• Halloumi kebabs</li> <li>• Macaroni cheese</li> <li>• Greek yoghurt with honey</li> <li>• Fruit smoothie</li> <li>• Salmon paté</li> </ul>
<p><b>Function in the body</b> Helps to build and maintain strong bones and teeth, as well as the normal functioning of nerves and muscles. It also helps blood clot normally.</p>		
Iron		
<p><b>Source</b> Liver, red meat, pulses, nuts, eggs, dried fruits, poultry, fish, whole grains and dark green leafy vegetables.</p>	<ul style="list-style-type: none"> <li>• Haem and non-haem iron</li> <li>• Absorption of haem and non-haem promoted by vitamin C</li> <li>• Absorption of non-haem iron reduced/inhibited by phytates, fibre, tannins (in tea) and calcium</li> <li>• Iron deficiency anaemia</li> </ul>	<ul style="list-style-type: none"> <li>• Spaghetti bolognaise</li> <li>• Mini cheese and vegetable frittatas</li> <li>• Salmon fish fingers</li> <li>• Red lentil bake</li> </ul>
<p><b>Function in the body</b> Helps to make red blood cells, which carry oxygen around the body. It also helps the immune system to work as it should and helps the brain to function normally.</p>		

# MUSIC

## KNOWLEDGE ORGANISER - Film Music - Year 9

### 1. KEY IDEAS & CONCEPTS

<b>2. Purpose</b>	Music in a film is there to <b>set the scene, enhance the mood, tell the audience things</b> that the visuals cannot, or <b>manipulate</b> their feelings. <b>Sound effects are not music!</b>
<b>3. Specially composed music</b>	Some music is <b>composed specially</b> for a film. Much of this is broadly classical in style.
<b>4. Borrowed music</b>	Some music used in film soundtracks was composed for other (non-film) purposes, but is <b>adopted</b> for use in a film because it fits the film-maker's intentions.
<b>5. Theme song</b>	Sometimes a song, usually a pop song, is used as a <b>theme song</b> for a film. This helps with marketing and <b>publicity</b> .

### 6. KEY TERMS

<b>7. Click Track</b>	A <b>click metronome</b> heard by musicians through headphones as they record.
<b>8. Cues</b>	The <b>parts of the film that require music</b> . This is agreed between the director and the composer.
<b>9. Diagetic</b>	<b>Music that is part of the action:</b> the characters in the film can hear it.
<b>10. Leitmotif</b>	A <b>short melody</b> that is <b>associated with a character</b> or idea in a film.
<b>11. Mickey Mousing</b>	When the <b>music fits precisely</b> with a specific part of the action in a film.
<b>12. Non-diagetic</b>	<b>Music that is not part of the action:</b> the characters in the film <b>cannot hear it</b> . It is just for the audience.
<b>13. Syncing / sync point</b>	A precise moment where the timing of the music needs to fit with the action.
<b>14. Underscore</b>	Where <b>music is played at the same time</b> as the action or dialogue.

### 15. INSTRUMENTS & COMMON ASSOCIATIONS (Musical Cliché's)

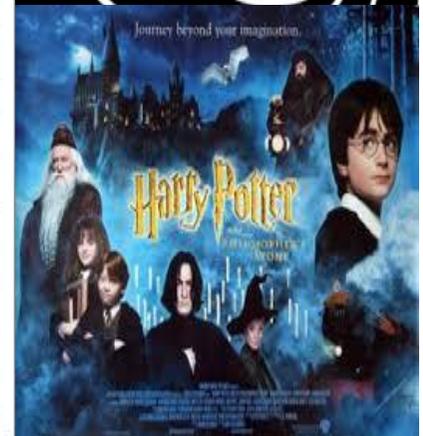
<b>16. Woodwind</b>	<b>Natural</b> sounds such as bird song, animals, rivers
<b>17. Bassoons</b>	Sometimes used for <b>comic effect</b> (e.g. a drunkard)
<b>18. Brass</b>	<b>Soldiers</b> , war, royalty, <b>ceremonial</b> occasions
<b>19. Tuba</b>	<b>Large</b> and slow-moving things
<b>20. Harp</b>	<b>Tenderness</b> , love
<b>21. Glockenspiel</b>	<b>Magic</b> , music boxes, fairy tales
<b>22. Timpani / Drums</b>	War, <b>fighting</b> , <b>thunder</b>
<b>23. Strings</b>	Often used to portray <b>emotions</b> : passion, grief, etc.
<b>24. Tremolo Strings</b>	<b>Tension</b> , fear, drama

### 25. KEY COMPOSERS

26. Bernard <b>Herrmann</b>
27. John <b>Williams</b>
28. John <b>Barry</b>
29. Jerry <b>Goldsmith</b>
30. Hans <b>Zimmer</b>
31. James <b>Horner</b>
32. Danny <b>Elfman</b>
33. Alan <b>Silvestri</b>
34. Howard <b>Shore</b>

### 35. MUSICAL ELEMENTS & COMMON ASSOCIATIONS (Musical Cliché's)

<b>36. Tempo</b>	<b>Fast</b>	<b>Excitement</b> , action or fast-moving things (e.g. a chase scene)
	<b>Slow</b>	<b>Contemplation</b> , rest or slow-moving things (e.g. a funeral procession)
<b>37. Melody</b>	<b>Ascending</b>	Upward movement, or a feeling of <b>hope</b> (e.g. climbing a mountain)
	<b>Descending</b>	Downward movement, or feeling of <b>despair</b> (e.g. movement down a hill)
	<b>Large Leaps</b>	<b>Distorted</b> or grotesque things (e.g. a monster)
<b>39. Harmony</b>	<b>Major</b>	Happiness, <b>optimism</b> , success
	<b>Minor</b>	Sadness, <b>seriousness</b> (e.g. a character learns of a loved one's death)
	<b>Dissonant</b>	<b>Scariness</b> , pain, mental anguish (e.g. a murderer appears)
<b>40. Rhythm &amp; Metre</b>	<b>Strong sense of pulse</b>	<b>Purposefulness</b> , action (e.g. preparations for a battle)
	<b>Dance-like rhythms</b>	<b>Playfulness</b> , dancing, partying (e.g. a medieval feast)
	<b>Irregular rhythms</b>	Excitement, <b>unpredictability</b> (e.g. a fast-moving fight)
	<b>Rhythmic ostinato</b>	<b>Menace</b> , tension (e.g. the countdown to an invasion)
<b>41. Dynamics</b>	<b>Loud</b>	<b>Surprise</b> , power, large things (e.g. a vast panorama)
	<b>Soft</b>	<b>Gentleness</b> , weakness, intimacy, small things (e.g. a new-born lamb)
	<b>Crescendo / Diminuendo</b>	Objects or events getting <b>closer</b> / objects getting <b>further away</b>



## Reasons for Doing Fitness Tests

- 1) Fitness tests are designed to measure particular types of fitness.
- 2) Fitness tests produce data (results).
- 3) This data can be used to:
  - Find out the sports performer's baseline (starting) fitness level. A coach finds out what types of fitness need improving. This helps them design a training programme.
  - Find out if the training programme is working. The sports performer is tested often to see if they are improving.
  - Give the sports performer a goal to aim for.

### 1. The Test Purpose

- 1) A coach needs to think about the **type of fitness** they want to measure. For example, a coach might want to measure an athlete's speed.
- 2) They need to choose a **test** that **measures** this type of fitness. For example, the 35 m sprint test is a test that measures speed.

### 2. The Test Situation

- 1) A coach needs to think about the **practicality** of carrying out the test.
- 2) Practicality means how **possible** it is to carry out the test.
- 3) Practicality includes things like:
  - **cost** — is the test expensive to carry out?
  - **time** — how long does the test take to do?
  - **ease** — how easy is the test to carry out?
  - **number of people** — how many people can do the test at once?
- 4) For example, a coach may have a lot of sports performers that **all need to do** a fitness test. This means he might choose a fitness test that they **can all do at once**.

### 3. The Needs of the Sports Performer

- 1) The coach needs to think carefully about the **safety** of the sports performer.
- 2) For example, they need to think about the sport performer's **age, health** and whether they are **pregnant**.
- 3) The sports performer shouldn't do a test where they could get **injured**.
- 4) For example, someone who has a **bad back** shouldn't do a fitness test that uses their **back**.



## Year 9 - BTEC Sport Cycle 3 Knowledge Organiser

Component of Fitness	Suitable Fitness Test
Aerobic Endurance	Multi Stage Fitness Test Forestry Step Test
Muscular Endurance	1 Minute Press Up Test 1 Minute Sit Up Test
Agility	Illinois Agility Test
Speed	35m Sprint Test
Flexibility	Sit and Reach Test
Muscular Strength	Grip Dynamometer Test
Power	Vertical Jump Test
Body Composition	Body Mass Index Test Bioelectrical Impedance Analysis Skinfold Test

### Reliability

- 1) When a fitness test is carried out it is **repeated** (done again).
- 2) A fitness test is **reliable** if a sports performer gets the same results when they repeat the test under the same conditions.
- 3) Different conditions could make the test (and its results) **less reliable**.
- 4) For example, a sprinter does a fitness test twice in a training session. On the first time the weather is sunny. On the second time it is raining. Rain makes the ground slippery. This makes the test results different. This makes the test (and its results) **less reliable**.
- 5) This means when carrying out a fitness test, the conditions must be kept the same.



### Validity

- 1) A fitness test is valid if it measures the type of fitness that it's supposed to measure.
- 2) For example, a coach wants to measure the strength of a sports performer's leg muscles. He uses a test that measures the strength of their arm muscles. This test (and the results) are **not valid** for what the coach wants to measure.

### Standard Procedure

- 1) When carrying out a fitness test a standard procedure must be followed.
- 2) A standard procedure is a set of instructions describing how to do a fitness test.
- 3) The standard procedure includes the equipment needed for the test.
- 4) The same standard procedure is used every time, by everyone doing the test.
- 5) This means that the results can be compared with other people's results and with published (printed) data.
- 6) The standard procedures for each fitness test that you need to know about are on pages 66-68.



### Pre-test Procedures

Pre-test procedures are things that need to be done before starting a fitness test. For example:

#### 1. Calibration of Equipment

- 1) Equipment needs to be **calibrated**.
- 2) This means **adjusting** (changing) equipment to make sure it's set up right.
- 3) For example, scales must be set to zero before a person is weighed. If they're not, they need **adjusting**.
- 4) Calibration makes sure the readings that are taken are **accurate** (near to the real value).



#### 2. Informed Consent

- 1) Sports performers must be told **what a fitness test** involves before they agree to take part.
- 2) If they agree to take part they must sign a form before doing the test.
- 3) This is called **informed consent**.



#### 3. Warm Up

- 1) It's important to **warm up** before doing any fitness tests to prevent injury.
- 2) For example, **going for a jog** and doing some **stretching**.

For more about warming up see page 31.



Careers

Careers

Careers



### ***Careers Department notices:***

#### ***Google Classroom***

Don't forget to access the student wellbeing pages there is lots of information and activities relating to careers and future intentions is uploaded regularly.

#### ***Guidance Interviews***

You may be a little confused about your future intentions please do contact the Careers Department if you would like to request a guidance appointment the best way to do this is email: [careers@paigntonacademy.org](mailto:careers@paigntonacademy.org)

#### ***Virtual Work Experience***

We understand that physically going into a work placement this year has not been possible. We have put together a virtual experience on the Careers Hub log on and take a look.

#### ***Student Feedback***

We have introduced to the Student Council a termly feedback on the Academy's careers provision. If there is something that you feel would benefit your year group please discuss with your House Representative.



### **Get Involved**

*When it comes to your future don't take a back seat you need to participate:*

Taking part in competitions and researching opportunities linked to your future career plans will look great on your application forms and CV. You will also have something more to talk about at interview than just your experiences in the classroom.



### **Questions about University, Apprenticeships, Funding, Work Experience?**

Researching and navigating websites for your future career can be a challenge The Careers Hub, a dedicated website, has loads of information for you to access and covers topics such as, Work Experience, College/6<sup>th</sup> Form Open event dates, Apprenticeships, how to write CVs and personal statements and finding a Job.



**LMI...Where are the future jobs?  
What are the different jobs by subject compare and contrast salaries and roles...**

<https://www.careerpilot.org.uk/job-sectors>

