Thomas Estley Community College Year 8 Autumn Term Knowledge Organiser

What are Knowledge Organisers?

A knowledge organiser is an easy way that each subject can summarise the most important information. Each subject section will include key terms, short explanations, glossary words, diagrams etc making it clear to the student as to what is essential to learn. Each grid has an overall theme and these vary according to the subject being taught.

It will be the students responsibility to keep the knowledge organisers safe and refer to them over the whole academic year.

How will these be used at Thomas Estley?

At Key stage 3, you will be given a knowledge organiser each term. You need to keep these safe in your learning packs that you were provided with at the start of the academic year.

Your subject teachers will use these in a variety of ways, for both class work, remote learning opportunities and homework. They will be used to help with revision for class quizzes and retrieval practice activities. They will also be used for flip learning activities, where subject teachers will ask you to learn some information and then go in to it in more detail in class.

Learn continually - there's always "one more thing" to learn!

— Steve Jobs —

AZ QUOTES
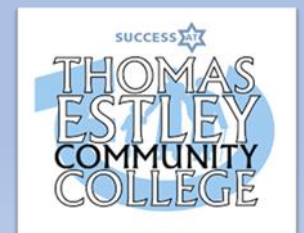
Revision Tips and Tricks!

Record It

Record yourself on your phone or tablet reading out the information. These can be listened to as many times as you want!

Teach it!

Teach someone your key facts and the get them to test you, or even test them!

Flash Cards

Write the key word or date on one side and the explanation on the other. Test your memory by asking someone to quiz you on either side.

Back to front

Write down the answers and then write out what the questions the teacher may ask to get those answers.

Hide and Seek

Read through your knowledge organiser, put it down and try and write out as much as you can remember. Then keep adding to it until its full!

Sketch it

Draw pictures to represent each of the facts or dates. It could be a simple drawing or something that reminds you of the answer.

Post its

Using a pack of post-it notes, write out as many of the keywords or dates as you can remember in only 1 minute!

PRACTICE MAKES PERFECT

Read Aloud

Simply speak the facts and dates out loud as you're reading the Knowledge Organiser. Even try to act out some of the facts – it really helps you remember!

Practice!

Some find they remember by simply writing the facts over and over again.

Computing Knowledge Organiser - First Steps in Small Basic

Programming languages

- Programming languages are used to give computers instructions on **what to do**
- One reason there are so many languages is that computers are used in thousands of different ways
- Many languages were invented for a specific purpose or application
- Small Basic was invented to be easy to learn and fun to use
- You will be **typing instructions** for the computer to follow
- You have to write the instructions very precisely or the computer wont understand them
- The instructions you write are called **program code**

Small Basic "Environment"

Toolbar

Help
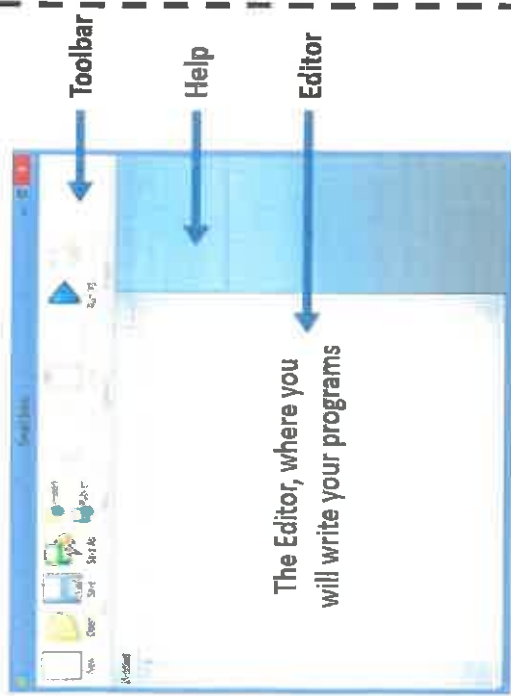
Editor

The Editor, where you will write your programs

Moving the turtle without drawing a line

```
Turtle.PenUp()                    'so line will not be drawn
Turtle.MoveTo(100,100)            'move the turtle
Turtle.Angle=90                   'make turtle face right
Turtle.PenDown()                  'put pen down
```
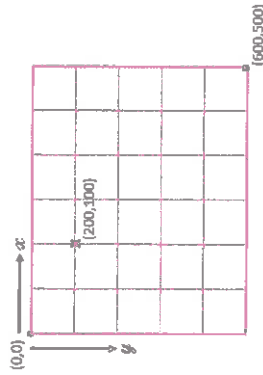
The text window

The text window is used for entering and displaying text and numbers. Some useful commands are listed below.

TextWindow.ForegroundColor—gets or sets the foreground colour of the text to be output in the text window.

TextWindow.BackgroundColor—gets or sets the background colour of the text to be output in the text window.

TextWindow.CursorLeft—gets or sets the cursor's column position on the text window.

TextWindow.CursorTop—gets or sets the cursor's row position on the text window.

TextWindow.Left—gets or sets the left position of the text window.

TextWindow.Title—gets or sets the title position of the text window.

TextWindow.Top—gets or sets the top position of the text window.

Screen Coordinates

- The graphics screen has x and y coordinates

Setting the size of the graphics window

You can change the size of the graphics window using the following code

```
GraphicsWindow.Width=600
GraphicsWindow.Height=400
```

Drawing a square

You can draw a square by writing these instructions 4 times:

```
Turtle.Move(100)
Turtle.TurnRight()
```

Using a For Loop

A For...EndFor loop to repeat a series of instructions several times. Here is an example that shows how to draw a square

```
For i = 1 To 4
    Turtle.Move(100)
    Turtle.TurnRight()
EndFor
```

i is a counter. It counts the number of times the instructions in the loop are to be performed. It can be called anything—"counter" or "finger" would work just as well

Computing Knowledge Organiser – First Steps in Small Basic

Using Variables

A variable is a piece of data that you can alter within a program. The variable must be given a name and it can be assigned a value. All programming languages can handle variables.

For example myname="Henry"

The variable is 'myname' and its value is 'Henry'.

Variables can hold any type of data. For instance a variable can represent a number.

Example:

In this program, the program will ask the user their name, store the name in a variable and then print out "Hello" with the user name.

```
TextWindow.Write("Enter your Name: ")
name = TextWindow.Read()
TextWindow.WriteLine("Hello " + name)
```

What happens when the program runs?

Conditional statements

```
If (Clock.Hour < 18) Then
    TextWindow.WriteLine("Good day")
EndIf

If (Clock.hour>=18) Then
    TextWindow.WriteLine("Good evening")
EndIf
```

If...Then...Else

```
If (Clock.Hour < 18) Then
    TextWindow.WriteLine("Good day")
Else
    TextWindow.WriteLine("Good evening")
Endif
```

Conditional Operators

Operator	Meaning
=	Equals
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal
<>	Not equal

A simple quiz program

```
TextWindow.WriteLine("Question 1. Which county is Bournemouth in?")
TextWindow.WriteLine("              (a)  Hampshire")
TextWindow.WriteLine("              (b)  Dorset")
TextWindow.WriteLine("              (a)  Sussex")
TextWindow.Write("Answer a, b or c   ")
Answer = TextWindow.Read()
If (Answer = "b") Then
    TextWindow.WriteLine ("Correct")
Else
    TextWindow.WriteLine ("Wrong! it's in Dorset")
    TextWindow.WriteLine ("It used to be in Hampshire")
Endif
```

Using a while...Endwhile loop

- To make a section of code repeat indefinitely, you can use a While....Endwhile loop

Make the program continue until the user presses End Program

```
ContinueForEver = "Yes"
While ContinueForEver = "Yes"
insert statements in here
EndWhile
```

Drawing filled shapes

- We can easily draw and fill rectangles and ellipses without using the turtle
- To draw a red ellipse:

```
GraphicsWindow.BrushColor = "Red"
GraphicsWindow.FillEllipse(XCoord, YCoord, width,height)
```


Randomising

- To get a random colour, use a statement like

```
Colour = GraphicsWindow.GetRandomColor()
GraphicsWindow.BrushColor = Colour
```

Revision tips

Use your knowledge organiser to read through the key facts and information for this unit—use the Look-Cover-Write-Check method to learn key knowledge.

Read through the lesson PowerPoints for this unit on SharePoint.

Look at the programs you have written during this unit—do you know how they all work? What do they do? Can you identify key features of each program?

Computing Knowledge Organiser - Understanding Computers

Elements of a Computer

Hardware: objects you can touch. E.g. monitors, keyboards, printers, motherboard, CPU chip

Software: you cannot 'touch' software. It is the programs that run on a computer. E.g. windows, MS Word, Kodu

Input: a device that can be used to enter data into a computer. E.g. Keyboard, mouse, microphone.

Output: a device used to display or output data which has been processed or stored in a computer. E.g. printer, speaker, monitor.

Storage: a device used to permanently record or store data. E.g. CD, hard drive.
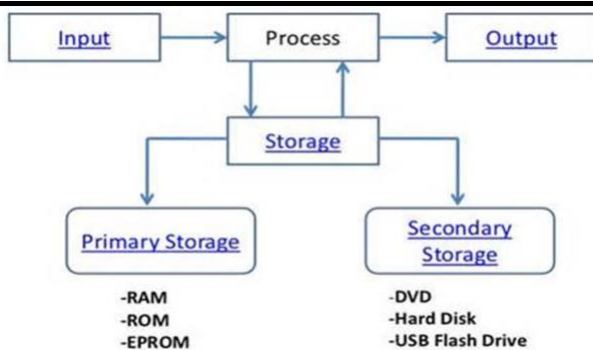
The CPU

Fetch—Decode—Execute Cycle

1. Computer has a list of instructions in memory to carry out
2. CPU **FETCHES** top instruction from the list
3. Instruction is passed to **DECODER** to interpret
4. **DECODER** passes on the instruction
5. Instruction is **EXECUTED** or carried out
6. CPU **FETCHES** top instruction from list … and cycle re-peats.
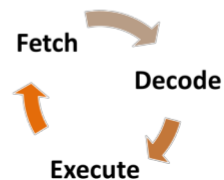
Processor Speed

One cycle per second = 1 Hertz (Hz) = 1 instruction carried each second

1 Kilohertz (KHz) = 1024 cycles per second

1 Megahertz (MHz) = 1,048,576 cycles per second 1 Gigahertz (GHz) = 1,073,741,824 cycles per second

(Approximately 1 billion!)

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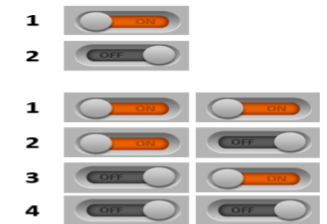
RAM vs ROM

RAM—random access memory

ROM—read only memory

Understanding Binary

Computers use millions of electronic circuits and switches which can either be On or Off

On is represented by 1 and Off is represented by 0
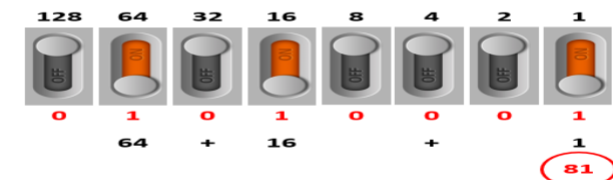
128	64	32	16	8	4	2	1
0	1	0	1	0	0	0	1

Therefore 64+16+1 = 81 , 81 converted to binary = 01010001
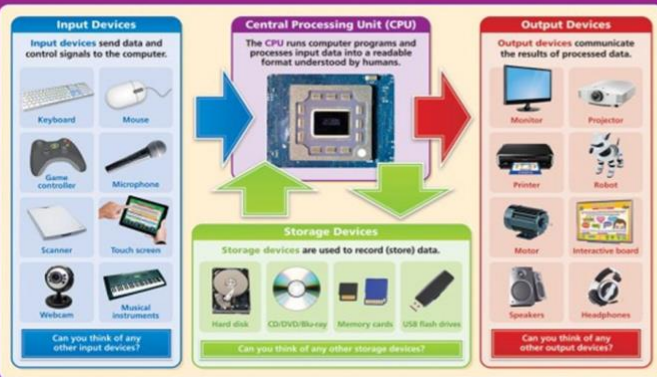
Bits and Bytes

0 or 1 = 1 Bit (**B**inary Dig**it**)

8 Bits = 1 Byte

1024 Bytes = 1 Kilobyte (Kb)

1024 Kb = 1 Megabyte (Mb)

1024 Mb = 1 Gigabyte (Gb)

1 Byte = 1 character of text

Decimal	Binary
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
10	1010

Computing Knowledge Organiser - Understanding Computers

Binary Addition

Rules of binary addition

Work right to

left 0+0=0 0+1=1

1+0=1

11
    1110   14
+   1100   12
= 11010   26

Carry Bit | Rule 5 | Rule 4 | Rule 2 or 3 | Rule 1

1+1=0 carry 1

1+1+1=1 carry 1

Here's another example:

0001 0101 + 0001 1001

	0	0	0	1	0	1	0	1
	0	0	0	1	1	0	0	1
Answer:	0	0	1	1	0	0	1	0
Carry line:			1	1	1	1	1	

ASCII code

You will need to use the worksheet from lesson 3 to revise ASCII code and how to represent characters.

Storage Devices

Hard disk	Uses magnetic disks for storing software and data. Disks are circular and spin at high speed. Files can be read, edited, re-written and deleted. Can store huge amounts of data.
Solid-state drive	Uses flash memory to store software and data. No moving parts in SSD—this makes them faster and more reliable than magnetic hard disks.
Optical device	Uses CDs or DVDs to store data. The files can be read, edited, re-written or deleted only if CDR/RWs or DVD-R/RWs are used.
Flash memory	Small memory sticks contain flash memory and are used in USB ports. Used to store data to transfer it between computing devices.
Cloud	Very large data storage capacity. Facilities made available online so the data can be accessed remotely.

Convergence & New Technologies

The effect of changing technologies

Connectivity

Convenience

Creativity & design

Globalisation & collaboration

Potential & innovation

Research & discovery

Future & emerging technologies

RFID	Wireless charging
Robotics	Driverless cars
Medicine	Domestic robots
Space exploration	3D printers

Moore's Law

States the number of transistors in integrated circuit boards doubles every 2 years.

The capabilities of many digital electronic devices are strongly linked to Moore's law: processing speed, memory capacity, sensors and the number and size of pixels in digital cameras.

This means that a 32Gb memory chip now could be 1Tb memory chip in only 10 years if it doubles in capacity every 2 years.

Key vocabulary: hardware, software, input, output, process, storage, memory, RAM, ROM, motherboard, CPU, fetch, decode, execute, graphics card, hard disk, data bus, binary, bit, byte, Kb, Mb, Gb, decimal, denary, integer, switch, optical media, CD-ROM, DVD, CD-R, CD RW, Blu-Ray, pits, lands, burn, read, write, data, track

Nutrients

- A **balanced diet** involves eating the right amount of nutrients for your body to function
- Not eating enough of a nutrient means you have an unbalanced diet, and this can lead to a **deficiency**
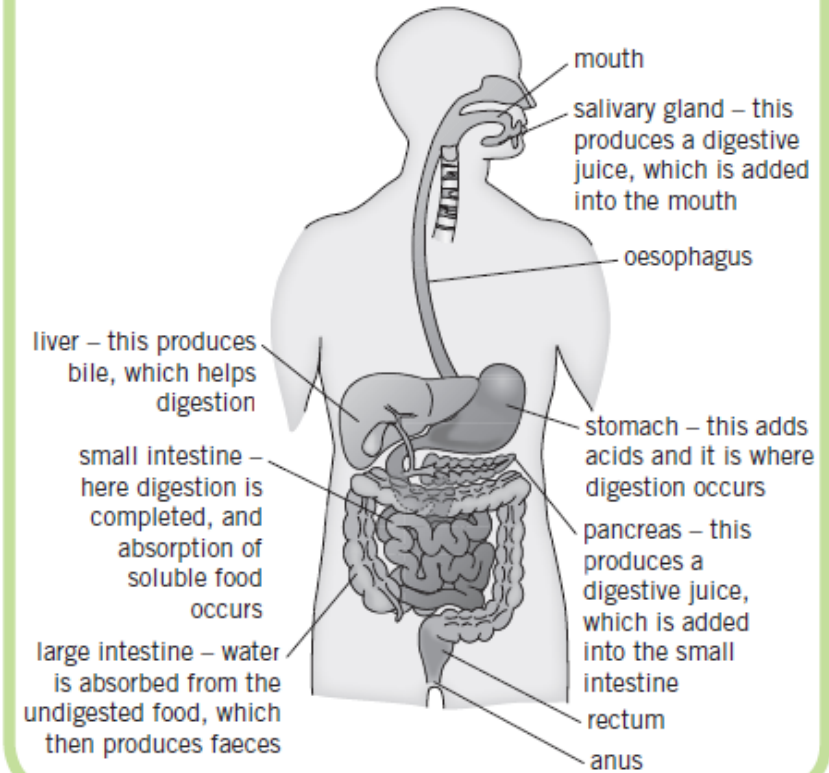
Nutrient	Role in your body
carbohydrates	main source of energy
lipids	fats and oils provide energy
proteins	growth and repair of cells and tissues
vitamins and minerals	essential in small amounts to keep you healthy
water	needed in all cells and body fluids
fibre	provides bulk to food to keep it moving through the gut

Key terms Make sure you can write definitions for these key terms.

Amylase Balanced diet Benedict reagent
Carbohydrase Carbohydrate Catalyst Deficiency
Enzyme   Fibre Glucose Iodine   Lipid lipase Mineral
Nutrient   Protease   Protein   Vitamin

Enzymes

- **Enzymes** are biological **catalysts**, they speed up the digestion of **nutrients**
- Each enzyme is specific to each nutrient
- The way the enzyme and nutrient bind with each other is called a lock and key model

- **Carbohydrases** break **carbohydrates** down into simple sugars
- **Proteases** break **proteins** down into amino acids
- **Lipase** breaks **lipids** (fats) down into fatty acids and glycerol

protein molecule → digestion → amino acid molecules

The digestive system

- mouth
- salivary gland – this produces a digestive juice, which is added into the mouth
- oesophagus
- liver – this produces bile, which helps digestion
- stomach – this adds acids and it is where digestion occurs
- pancreas – this produces a digestive juice, which is added into the small intestine
- small intestine – here digestion is completed, and absorption of soluble food occurs
- large intestine – water is absorbed from the undigested food, which then produces faeces
- rectum
- anus

Food tests

Starch Test Drop iodine solution onto the food

IODINE

Glucose Test Mix Benedict's with food and boil. chopped up food, hot water, heat

Protein Test potassium hydroxide & Copper Sulfate, chopped up food → Turns purple if protein is present.

grind food → Add distilled water then stir → filter → add 3 drops Sudan III
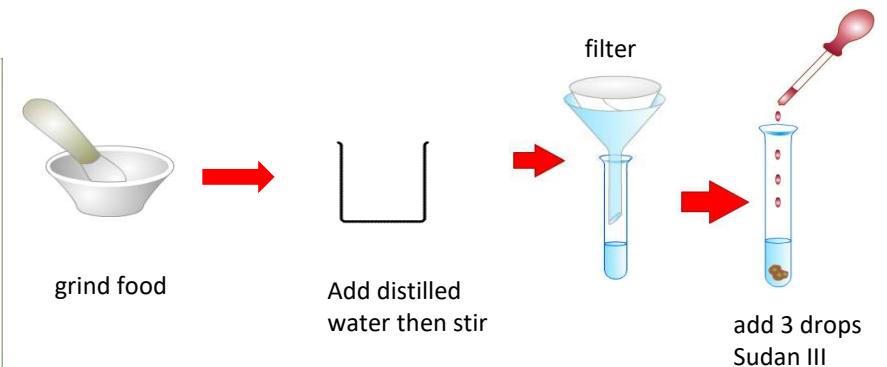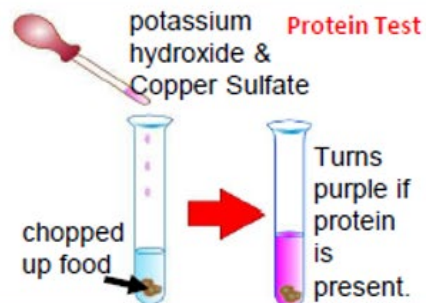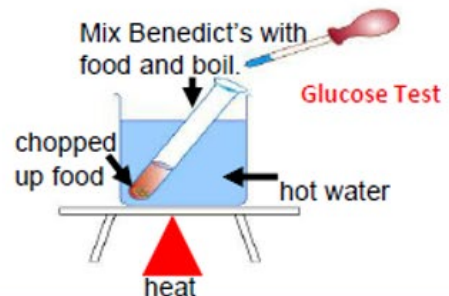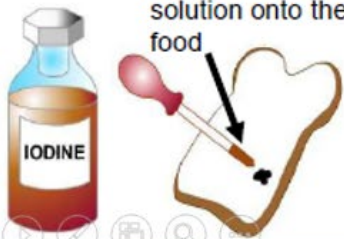
Elements and the periodic table

- An **element** is a substance that only contains one type of atom, it is found on the **Periodic Table**
- Each element has it's own unique chemical symbol which is the same in every language, these are also found on the Periodic Table
- An **atom** is the smallest part of which an element can be broken down into
- As there are around 100 types of elements that can occur naturally, there are around 100 different atoms

Groups and periods

- **Groups** are the columns in the Periodic Table, they go downwards
- **Periods** are the rows in the Periodic Table, they go sideways
- Elements in the same group normally follow the same trends in properties such as melting point, boiling point and reactivity
- By placing these elements into these groups, scientists can make predictions about their properties

Compounds

- **Compounds** are formed when two or more different elements chemically bond together
- The compound will have different **physical properties** to the elements which make up the compound, for example water is a liquid, but it made from oxygen and hydrogen which are both gases
- Compounds are hard to separate and need a chemical reaction to do this

- When naming a compound, we always mention the metal first and the non metal second
- The name of the metal will not change but the name of the non metal will, for example oxygen can change to oxide
- Chemical formulae tells us how many atoms of each element are in the compound in relation to each other
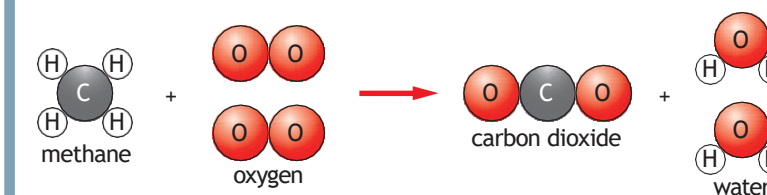
CH_4 → 1 carbon, 4 hydrogens

CO_2 → 1 carbon, 2 oxygens

- The small number tells us the number of each element which is in front of the number

Chemical reactions

- Word equations can represent a **chemical reaction:**

methane + oxygen → carbon dioxide + water

- The **reactants** are on the left side of the arrow and the **products** are on the right side of the arrow
- We use an arrow instead of an equals sign as it represents that the reactants are changing into a new substance
- In a reaction, the amount of each type of atom stays the same, however they are rearranged to form a new product

Exothermic and endothermic reactions

Exothermic reactions involve a transfer of energy from the reactants to the surroundings
- As energy is transferred to the surroundings this will show an increase in temperature
- Examples of exothermic reactions include combustion, freezing, and condensing

exothermic — energy given out
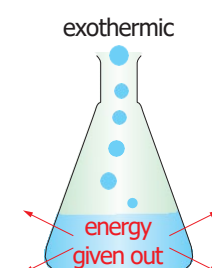
Endothermic reactions involve a transfer of energy from the surroundings to the reactants
- As energy is taken into the reactants a decrease in temperature will be shown
- Examples of endothermic reactions include thermal decomposition, melting, and boiling

endothermic — energy taken in
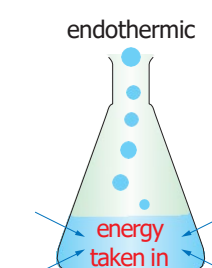
Conservation of mass

- In a reaction the mass will be **conserved**, this means that the total mass of the reactants will be equal to the total mass of the products.
- If it appears that some of the mass has been lost, this means that a gas has been produced and escaped, accounting for the lost mass.

10g + 10g → 8g + 12g

20g → 20g

$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
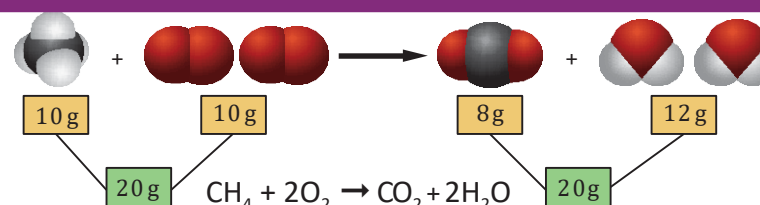
Balanced symbol equations show the amounts of all of the individual atoms in a reaction. The symbols used are from the Periodic Table. They show:
1 - Formulae of reactants and products.
2 - How the atoms are rearranged.
3 - Relative amounts of reactants and products

Key terms

Make sure you can write definitions for these key terms.

atom   compound   conserved   displacement reaction   element   group   Group 1   Group 7   Group 0   halogen   balanced symbol equation   chemical bond

Conservation of mass   Period   Periodic Table   physical properties   endothermic   polymer   trend   chemical reaction   fuel   products   reactants

Bond energies

- Energy must be used to break **chemical bonds**, meaning that this reaction is endothermic
- Energy is given out when chemical bonds are made, meaning that this reaction is exothermic
- To see if a reaction is endothermic or exothermic, you must find the difference in the energy needed to break and to make the bonds in the reaction
- If the energy needed to break the bonds is less than the energy given out when making the bonds, the reaction is exothermic
- If the energy needed to break the bonds is more than the energy released when making the bonds, the reaction is endothermic

Combustion continued

- **Combustion** is the burning of a **fuel** in oxygen
- A fuel is a substance which stores energy in a chemical store
- Examples of fuels include petrol, diesel, coal and hydrogen
- When a carbon based fuel undergoes combustion, it will produce water and carbon dioxide

methane + oxygen ➞ carbon dioxide + water

- Hydrogen can also be used as a fuel, this is much better than traditional fossil fuels as it does not produce carbon dioxide:

hydrogen + oxygen ➞ water

Thermal decomposition

- A **thermal decomposition** reaction is one where the reactants are broken down (decomposition) using heat (thermal energy)
- An example of this is with metal carbonates:

zinc carbonate ➞ zinc oxide + carbon dioxide

- We can test for this carbon dioxide by bubbling the gas through limewater, if the limewater turns cloudy, the gas is carbon dioxide

clamp
metal carbonate
limewater
bunsen burner

group number

1	2											3	4	5	6	7	0
				H													He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra																

Group 0

- **Group 0** elements are known as the **noble gases**
- They are all non metals with low melting and boiling points, meaning all are gases at room temperature
- The boiling point decreases going down the group
- All of the group 0 elements are unreactive
- When electricity is passed through the gas, they emit a brightly coloured light, this can be seen in neon signs

Halogens

fluorine	most reactive
chlorine	
bromine	
iodine	least reactive

Group 1

- **Group 1** elements are also known as the **alkali metals**
- They share similar properties with other metals such as:
  - Being shiny when freshly cut
  - Being good conductors of electricity and heat
- Group 1 metals are much softer than other metals and also have much lower melting and boiling points
- Group 1 elements react with water to form alkali solutions

lithium + water ➞ lithium hydroxide + hydrogen
metal + water ➞ metal hydroxide + hydrogen

- The further down the group that the metal is, the more vigorous the reaction will be. This is called a **trend**
- Another trend seen in Group 1 is with the boiling and melting points: the further down the group, the lower the boiling and melting points are

Group 7

- **Group 7** elements are also known as the **halogens**
- They share similar properties with other non metals such as:
  - Having low melting and boiling points
  - Not conducting electricity
  - Moving down the groups the elements have an increased melting and boiling point
- The halogens also react in a similar way to one another, for example with iron:

iron + chlorine ➞ iron chloride
iron + bromine ➞ iron bromide

- Halogens can undergo **displacement reactions**, this is where a more reactive halogen will take the place of a less reactive halogen
- The most reactive halogens are at the top of the group, and the least reactive halogens are at the bottom of the group
- If the most reactive halogen is on its own, it will take the place of the less reactive halogen in a compound

calcium bromide + chlorine → calcium chloride + bromine

Energy level diagrams

Energy level diagrams show the values of energy between the reactants and the products in a reaction
- If the energy is greater in the reactants than the products then the reaction is exothermic as energy has been given out to the surroundings
- If the energy is lower in the reactants than the products then the reaction is endothermic as energy has been taken in from the surroundings

Exothermic
energy
reactants
energy transfer
products
progress of reaction

Endothermic
energy
products
energy transfer
reactants
progress of the reaction

Key terms — Make sure you can write definitions for these key terms.

atom   alkali metals   noble gas   displacement reaction   group   Group 1   Group 7   Group 0   halogen
period   Periodic Table   physical properties   polymer   trend   Combustion   Thermal decomposition

Year 8 Resistant Materials Knowledge Organiser

Design for maintenance and repair

Advantages of repairable products and those that can be maintained:

Can be updated, to be more efficient, lengthening their useful life time.
It is cheaper to repair than replace an entire product.
Repairable products are environmentally friendly

A **standard component** is a pre-manufactured product that is used in the manufacturing of another product. As well as saving time, using a standard component can ensure a consistent product is produced. Users can remove standard fittings to help them repair or replace parts . **Nuts , bolts , washers , zips , buttons are just some examples**.

CAD – Computer aided design.

2DDesign , Google Sketch-up
Advantages
- Easy to make changes
- Show clients 3D models of your idea
- Files can be emailed across the world instantly
- You can test your idea in a virtual environment
Disadvantages
- Software can be expensive
- You need training

CAD Tools

Large Tool Set

Select (Spacebar)	Make Component
Paint Bucket (B)	Eraser (E)
Line (L)	Freehand
Rectangle (R)	Rotated Rectangle
Circle (C)	Polygon
Arc	2 Point Arc (A)
3 Point Arc	Pie
Move (M)	Push/Pull (P)

Computer aided manufacturing machines

Laser cutter

3D printer

Accurate , can be used to make multiple copies

Design movement : A design movement is a group of designers with a common cause view or idea who then produce designs based upon their views or ideas. Memphis Design movement , Art Deco , modernism and Art Nouveau are examples from the 20th century.

Input Components

These devices form the crucial control needed for a product to operate. Most input components need to be bought but some can be manufactured especially for a project. For instance, a pressure sensor.

Light dependent resistors (LDRs) are a type of variable resistor whose resistance increases with light.

Switches are simple input devices which allow electrical current to flow when pushed.

Motion sensors use infrared to detect changes in the environment to activate the system.

Thermistors are a type of variable resistor whose resistance changes when it becomes hot or cold.

Process Components

These devices are used in combinations to turn the signal from the input component into the signal to the output component. Careful designing and a good knowledge of the way circuits are designed is crucial

Resistors limit current flow in an electronic circuit and have to be placed before some components to prevent damage.
.

Integrated circuits (ICs) are manufactured for many different uses and functions. A tiny circuit is encased in silicone (a semiconductor material). Although they look complex, they follow the same logic as simple circuits. Because of their reduced size, smaller products can be achieved as more technology can be made to fit into smaller spaces.

Microcontrollers are tiny integrated circuits used widely in automatically controlled devices such as engine management in cars. These can be combined with drivers to control devices such as motors. Raspberry Pi and BBC micro:bit computers are examples used in schools.

Analysing products
When a designer is developing a new design, it is useful to analyse existing products to see how successful they have been and identify any areas in which they could be improved

---

Solder

Soldering iron

Side cutters

Tenon saw

Printed circuit board . Electronically connect components using copper tracks .

A **hazard** is any source of potential damage, harm or risk.

A **precaution** is a measure taken to prevent something dangerous or harmful happening

---

Output Components

The output is the end function of the product. In most cases, the output can be classed as light, sound, motion or a combination of two or more functions.

Light emitting diode (LED) come in different colours and levels of brightness. They have replaced the filament bulb in many everyday uses.

Light bulbs are not as widely used because of LEDs in an everyday context but minilight bulbs do not require soldering, so can still be useful.

Buzzers use electric current to create their own sound. Used in alarm systems.
Speakers allow a sound signal from a circuit to be amplified.

Motors are magnetic devices and are behind nearly all moving parts in electronic systems.

Exploded drawings show how a product is assembled. Each component is usually labelled.
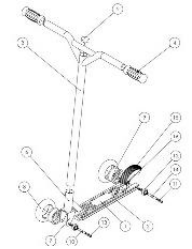
Anthropometrics
Anthropometrics is the practice of taking measurements of the human body and provides categorised data that can be used by designers.

Ergonomics is **a consideration that leads to a product being designed in a way to make it easy to use**. Size, weight, shape, position of buttons and controls are all aspects that contribute to it being ergonomically designed.

Soldering is a permanent addition method for electronic components.

Short-circuit In a circuit, often as the result of a solder bridge, electricity will flow in the shortest path back to the battery.

Insulator A material that does not conduct electricity and can therefore be used as a coating to components, circuit boards and wires. PVC is a example.

Conductor A material which allows heat or electricity to pass through it easily. Copper is an example .

Dance Year 8 – Contemporary Dance

Rudolf Laban (1879-1958)

Born in Austro-Hungary. Laban was a dancer, a choreographer and a dance / movement theoretician. One of the founders of European Modern Dance, his work was extended through his most celebrated collaborators, Mary Wigman, Kurt Jooss and Sigurd Leeder. Through his work, Laban raised the status of dance as an art form, and his explorations into the theory and practice of dance and movement transformed the nature of dance scholarship.

Dance Space – The WHERE?

1. **Size**
   Small= close to centre/large extended away

2. **Pathway**
   The pattern of the journey, e.g., linear, curved.

3. **Direction**
   Where you face or travel to.
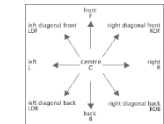
4. **Levels**
   Working on different levels, e.g., on floor, standing, in the air
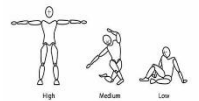
5. **Design**
   Overall, pattern and shapes used in the body and actions

5 Basic Dance Actions – The WHAT

1. **Gesture**
   An action bearing no weight

2. **Elevation**
   An action where the whole body leave the ground

3. **Stillness**
   An action that is held (balanced) for a moment

4. **Travel**
   Locomotion – an action that transport the body from A to B

5. **Turn**
   An action that rotates the body on its own axis 360 degrees

Dance Dynamics – The HOW

1. **Time**
   The speed at which you move, e.g., fast/slow/sudden

2. **Weight**
   The force used to execute an action, e.g., heavy, soft, light.

3. **Flow**
   How continuous an action or actions are, whether they have a specific route or destination.

4. **Space**
   The directness of an Action. Often dictates the overall design or pattern of the action.

Dance Relationships – The WHO

1. **Contact**
   One or more parts of the body touching or in-hold.

2. **Mirroring**
   To incline or face another dancer and perform the actions opposite to them.

3. **Canon**
   To do the same movements one after another.

4. **Formation**
   To create different shapes on the stage, e.g., line, circle, triangle.

Properties of waves

- A **wave** is an **oscillation** or **vibration** which transfers energy from one place to another
- **Amplitude** – the distance from the middle to the top of bottom of the wave
- **Wavelength** – the distance between a point on the wave to the same point on the next wave
- **Trough** – The bottom of the wave
- **Peak** – The top of the wave
- **Frequency** – How many waves pass a fixed point per second, measured in Hertz (Hz)

amplitude (m) wavelength (m)
peak or crest
trough
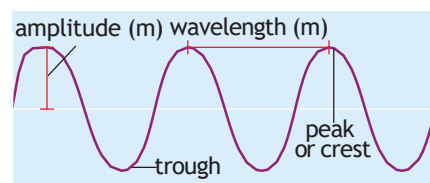
There are two main types of waves:

Transverse waves, e.g. light
- Travel at 90°direction of energy transfer
- Do not need a medium to travel through

Longitudinal waves, e.g. sound
- Travel in the direction of energy transfer
- Need a medium to travel through

Sound waves

- Sound waves are caused by the vibration of particles, sound travels quicker in a solid than a gas as the particles are closer together
- **Oscilloscopes** display sound waves on a screen
- Humans can hear between 20–20 000 **hertz** (Hz), but other animals have different ranges of hearing
- Sound waves above 20 000 Hz are known as **ultrasound**, thesesound waves are too high pitched for humans to hear

loudness increases
loudness decreases
pitch decreases
pitch increases
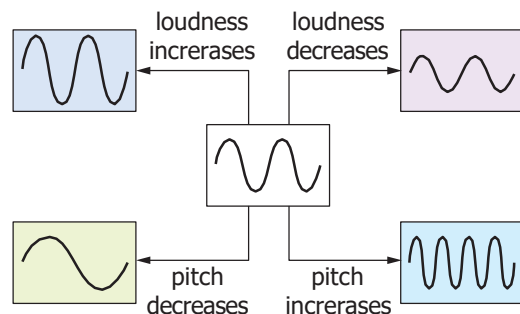
Hearing

- The **pinna** directs sound along the **auditory canal** to the **eardrum** which will vibrate
- The vibration from the ear drum moves onto the ossicles which amplifies the sound
- This passes the sound to the cochlea where tiny hairs detect the vibrations and passes this along to the **auditory nerve** as electrical signals for our brain

pinna
semi-circular canals
ossicles
auditory nerve
cochlea
eardrum
oval window
auditory canal
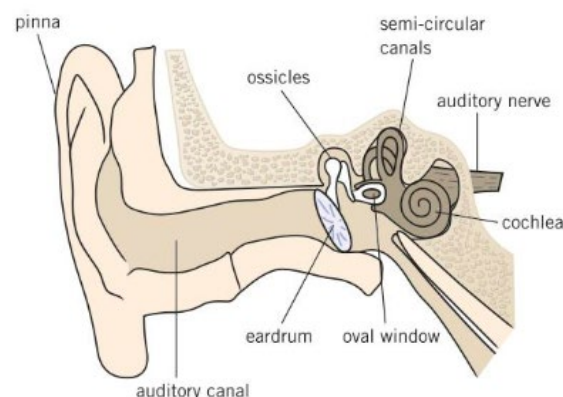
Reflection

- The **law of reflection** states that the **angle of incidence** will be equal to the **angle of reflection**

mirror
incident ray
reflected ray
normal line
i = angle of incidence
r = angle of reflection
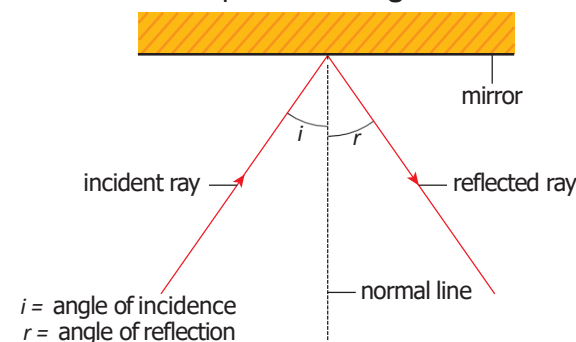
- For light reflecting off a smooth surface will form an image is called **specular reflection**
- Reflection off of a rough surface will not form an image and is know as **diffuse scattering**
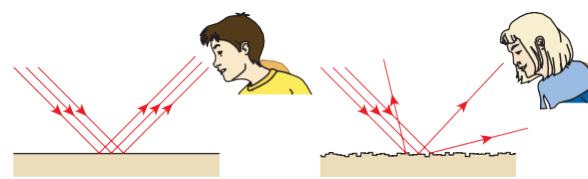
Refraction

- **Refraction** occurs when a wave passes between two different substances
- This happens as the wave will travel at different speeds in the different materials
- When the wave passes into a more dense material from a less dense material it will bend towards the **normal**, e.g. air into glass
- When the wave passes into a less dense material from a more dense material it bends away from the normal e.g. glass to air

normal line
ray entering
air
glass
refracted ray
ray emerging
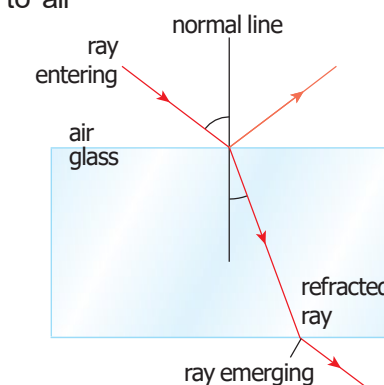
Light and the eye

- Light entering your eye is refracted by the **lens**, focusing it on the retina and creating an inverted image
- **Photoreceptors** detect the light hitting your retina and send an electrical impulse to your brain
- If the light is not focussed on the retina or the eye, people cannot see properly
- Long sighted people have the light focus behind the eye, short sighted people have the light focus in front of the retina.
- Lenses can be used to refract the light in a way in which it will focus on the retina.

optic nerve
lens
cornea
pupil
iris
retina and image
object
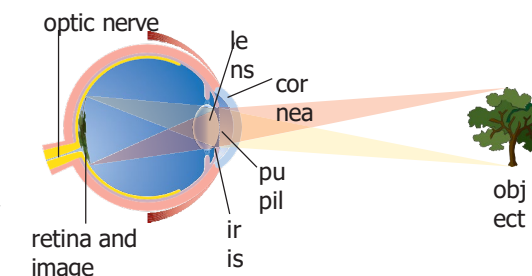
Colour

- Light can be split using a prism and is made up from different colours of light
- **Primary colours** can be mixed in order to form **secondary colours**

red
magenta
blue
white
yellow
cyan
green
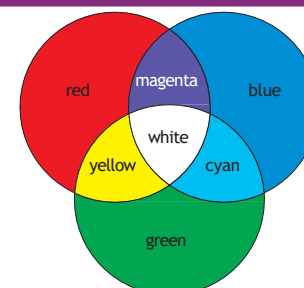
Filters

- A filter subtracts colours from white light.
- A red filter transmits red light but absorbs all of the others.
- It does not change the colour of the light.
- If you put a red filter and a green filter together, then no light would get through.

white light
red filter
red light
green filter
no light
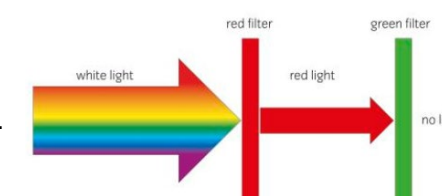
Key terms Make sure you can write definitions for these key terms.

Amplitude, angle of incidence, angle of reflection, auditory canal, auditory nerve, diffuse scattering, eardrum, frequency, hertz, law of reflection, lens, longitudinal, normal, oscillation, oscilloscope, peak, photoreceptors, primary colour, refraction, secondary colour, specular reflection, transverse, trough, ultrasound, wave, wavelength

Year 8 Autumn Term Britain 1750-1900

Lesson Content

Introduction + Why did Agriculture need to change?

How did farming change?

Did everyone like the changes on the farms?

The Domestic System

Life in the factories

How bad was life in the factories?

How do businesses grow?

Who made businesses grow?

Why did coal mining grow?

How dangerous was coal mining?

Changes in transport – Roads

Changes in transport - Canals

Changes in transport - Railways

Changes in transport - Impact of the Railways

Key dates

c1701	Jethro Tull invents the seed drill
1759	Josiah Wedgewood starts his business
1771	Arkwright opens Cromford Mill
1761	Bridgewater Canal completed
1776	James Watt's first steam engine
1804	First steam locomotive made
1821	First Turnpike Act
1825	First railway line opens (Stockton to Darlington)
1829	Locomotive called The Rocket wins the Rainhill Trials
1830	Liverpool and Manchester line opens, first scheduled passenger line in the world
1837	Euston railway station opens in London
1880	Standard time adopted across UK

Key people

Jethro Tull	English agricultural pioneer from Berkshire who helped bring about the British Agricultural Revolution. He perfected a horse-drawn seed drill in 1700 that economically sowed the seeds in neat rows, and he later developed a horse-drawn hoe.
Robert Bakewell	British agriculturalist, now recognized as one of the most important figures in the British Agricultural Revolution. In addition to work in agronomy, **Bakewell** is particularly notable as the first to implement systematic selective breeding of livestock.
Thomas Coke	known as **Coke** of Norfolk or **Coke** of Holkham, was a British politician and agricultural pioneer
Richard Arkwright	English inventor and a leading entrepreneur during the early Industrial Revolution. ... **Arkwright's** achievement was to combine power, machinery, semi-skilled labour and the new raw material of cotton to create mass-produced yarn.
Josiah Wedgewood	English potter and entrepreneur. ... He developed improved pottery bodies by a long process of systematic experimentation, and was the leader in the industrialisation of the manufacture of European pottery (the Chinese having achieved this long before).
Matthew Boulton	English manufacturer and business partner of Scottish engineer James Watt. ... He then successfully lobbied Parliament to extend Watt's patent for an additional 17 years, enabling the firm to market Watt's steam engine.
James Watt	British engineer and inventor who patented a much improved version of the steam engine (1769) and devised the **unit** of horsepower. The **watt unit** of power is named for him.
James Brindley	English engineer. He was born in Tunstead, Derbyshire, and lived much of his life in Leek, Staffordshire, becoming one of the most notable engineers of the 18th century.
Thomas Telford	Scottish civil engineer, architect and stonemason, and road, bridge and canal builder.
James McAdam	Scottish inventor of the **macadam** road surface, now known as Tarmac
George Stephenson	British civil engineer and mechanical engineer. ... **George** also built the first public inter-city railway line in the world to use locomotives, the Liverpool and Manchester Railway, which opened in 1830.

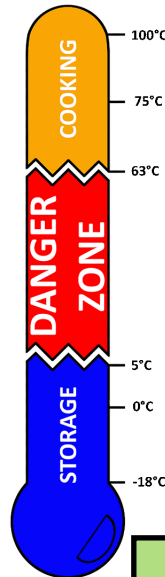## Key words - Glossary

agriculture	the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products	**exploitation**	the action or fact of treating someone unfairly in order to benefit from their work.
revolution	As a **historical** process, "**revolution**" refers to a movement, often violent, to overthrow an old regime and effect. complete change in the fundamental institutions of society	**mineshaft**	a deep narrow vertical hole, or sometimes a horizontal tunnel, that gives access to a mine.
mechanisation	the introduction of machines or automatic devices into a process, activity, or place	**methane**	a colourless, odourless flammable gas which is the main constituent of natural gas.
domestic	relating to the running of a home or to family relations.	**navvie**	a labourer employed in the excavation and construction of a road, canal, or railway.
factory	a building or group of buildings where goods are manufactured or assembled chiefly by machines	**turnpike**	a toll gate.
manufacturing	the making of articles on a large scale using machinery; industrial production.	**aqueduct**	an artificial channel for conveying water, typically in the form of a bridge across a valley or other gap.
entrepreneur	a person who sets up a business or businesses, taking on financial risks in the hope of profit	**locomotive**	a powered railway vehicle used for pulling trains.
profit	a financial gain, especially the difference between the amount earned and the amount spent in buying, operating, or producing something.	**viaduct**	a long bridge-like structure, typically a series of arches, carrying a road or railway across a valley or other low ground.

Key resources:
www.tecchistoryks3.blogspot.com

Key Assessment:
50 minute assessment based on skills from Paper 1+3 GCSE History
Questions 1-4or5

Year 8 - Nutrients

COOKING AND NUTRITION

Food safety and hygiene is about protecting people and reducing the risk of food poisoning.

CLEAN
SEPARATE
COOK
CHILL

https://www.youtube.com/watch?v=zE0ypKtFuWQ

Temperature scale:
- 100°C — COOKING
- 75°C
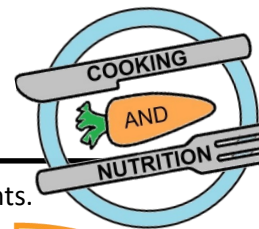- 63°C
- DANGER ZONE
- 5°C — STORAGE
- 0°C
- -18°C

Carbohydrates are *macro*nutrients.

The main function is to **provide energy** to the body.

2 main types = **starchy** (complex) and **sugary** (simple)

Complex = long lasting energy;
Simple = short burst of energy

https://www.youtube.com/watch?v=PByM12M1n3A
https://www.youtube.com/watch?v=Xto8ZqCYDvY

Proteins are *macro*nutrients.

They're used by the body for **growth, repair** and maintenance of **muscle and tissue**.

2 main types = **HBV** (high biological value) and **LBV** (low biological value)

HBV = contain all 9 essential amino acids;
LBV = contain some but not all 9 essential amino acids

https://www.youtube.com/watch?v=61LeIea02ao
https://www.youtube.com/watch?v=KSKPgaSGSYA

vitamins

and minerals are *micro*nutrients. They have a wide range of health benefits.

https://www.youtube.com/watch?v=K5pW7rpMTQw
https://www.youtube.com/watch?v=kteZneJm1EI
https://www.youtube.com/watch?v=1u5HOURq7kQ

The Eatwell Guide shows the types and proportions of foods people need for a healthy and well-balanced diet.

Eatwell Guide

https://www.youtube.com/watch?v=7MlE4G8ntss
https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/
https://www.youtube.com/watch?v=8aWqZd9RScQ

Key vocabulary

safety / hygiene
nutrients / sources / function
carbohydrates / protein / amino acids
HBV / LBV / protein complementation
fibre / vitamins / minerals / fat / water
deficiency / excess
convection / conduction / radiation

Methods of cooking

Baking
Grilling
Barbecuing
Searing
Pan Frying
Deep Frying
Roasting
Shallow Frying
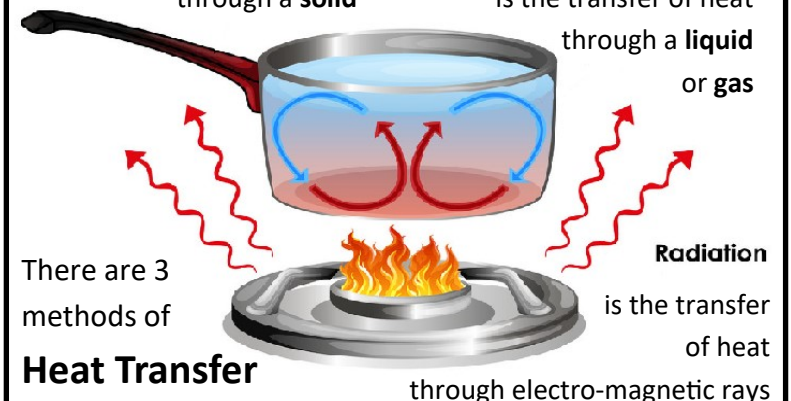Sauteeing
Stir Frying

https://www.youtube.com/watch?v=fiFi-d0RwKo

Conduction is the transfer of heat through a **solid**

Convection is the transfer of heat through a **liquid** or **gas**
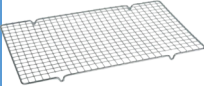
Radiation is the transfer of heat through electro-magnetic rays

There are 3 methods of **Heat Transfer**

https://www.youtube.com/watch?v=vg5k6t6uZwE

Year 8 - Cooking skills

Equipment

Rolling pin	Pastry cutter	Cooling rack	Baking tray	Tin opener
Juicer	Garlic press	Pasty mould	Electric whisk	Sieve

Skills and Processes

Bridge hold and Claw grip

Used in: fruit salad, pasta salad, sausage rolls, Spanish omelette, potato wedges and salsa

Rubbing in technique

Used in: jam tarts, bread rolls, Chelsea buns, cheese and onion pasties

Kneading

Used in: bread rolls, pizza wheels, Chelsea buns

Creaming

Used in: Dutch apple cake

Key word	Meaning
Gluten	The protein found in wheat, which is responsible for the elastic texture of dough.
Kneading	Working bread dough with the hands to stretch the gluten so it is elastic (helps the yeast to make bread rise).
Gelatinisation	When liquid is added to starch grains making them swell. Used to thicken sauces eg. cheese.
Simmering	When water or food in a saucepan bubbles gently (stays below boiling point).
Vegan	Don't eat or use ANY animal products.

Independent skills I need to learn in Year 8

Use the bridge hold and claw grip to cut food safely and accurately.

Use a range of other preparation techniques eg. peeling, chopping, slicing, dicing, grating etc.

Organise all my ingredients and follow a recipe.

Use the cooker (eg. hob and oven) safely.

Temperature control know when to turn heat up and down accordingly.

Food safety

Using **colour coded chopping boards** and equipment prevents **bacteria** spreading and causing **food poisoning**.

PREVENT CROSS CONTAMINATION

USE CORRECT COLOUR CODED CHOPPING BOARDS & KNIVES

RAW MEAT
RAW FISH
COOKED MEATS
SALAD & FRUITS
VEGETABLES
DAIRY PRODUCTS

SHAKESPEARE TODAY

Circa 1585–1613.

William Shakespeare was a poet, playwright and actor. His body of writing is considered the most influential and important of the modern world.

His plays are sectioned into three categories: Histories, Tragedies and Comedies.

Shakespeare also expanded the English Language vastly, adding hundreds of words to our rich language during his time as a writer.

His work straddled the Elizabethan and Jacobean periods; this means he was writing when Queen Elizabeth I was on the throne, and when King James I (VI of Scotland) ruled England. This historical backdrop is important to note when studying his works as the monarchy had a lot more power over the country than they do in modern England.

King James 1st of England
(6th of Scotland)

Queen Elizabeth 1st of England

Key terminology:
Iambic pentameter – ten syllables in a line
Sonnet – a form of poetry with 14 lines and a strong rhyme scheme
Hamartia – a character's fatal flaw leading to his/her downfall
Hubris – a character's huge amount of pride or self-confidence
Thee/Thou – A middle English way of saying "you"
Patriarchy - a system of society or government in which men hold the power and women are largely excluded from it
Jacobean Period - 24 Mar 1603 – 27 Mar 1625

Relevance - the quality or state of being closely connected or appropriate.
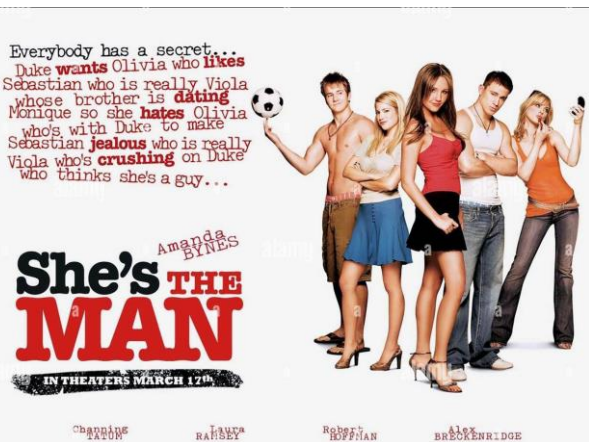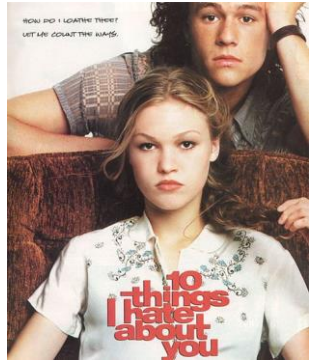
William Shakespeare

Different Types of Plays

Tragedy	These plays would typically end in death or violence. For example: Othello, Romeo & Juliet, Hamlet, King Lear.
History	These plays were based on historical events. For example: Henry V, Richard III, Henry VI, King John.
Comedy	These plays tended to focus on love, magic, and confusion. For example: A Midsummer Night's Dream, As You Like It, Much Ado About Nothing, The Tempest.

William Shakespeare's Life

- Born on 23rd April 1564
- In 1582, he married Anne Hathaway.
- 1589-1593—he wrote Comedy of Errors, and Richard III, and became an established playwright in London
- 1594-1596—He creates an acting company, and writes A Midsummer Night's Dream and Romeo and Juliet.
- 1597-1599—He buys the second biggest home in Stratford, and writes Julius Caesar and Much Ado About Nothing
- 1600-1608—Hamlet, Macbeth and Twelfth Night are written
- 1603—James I is crowned King—Shakespeare renames his acting group "The King's Men".
- 1609-1611—Shakespeare's Sonnets are published, and he writes The Tempest
- 1612-1616—Henry VIII is written
- He dies, 23rd April 1615

Key Terms

Regicide	The murder of the king or monarch
Foil	A character who contrasts with another, to highlight their qualities
Renaissance	The period of time when Shakespeare wrote his plays and sonnets.
Soliloquy	The act of speaking one's thoughts aloud when by oneself or regardless of any hearers, especially by a character in a play.

Shakespearean Form

Prose	This is ordinary language—no rhyme or rhythm.
Sonnet	A 14 line poem that is usually based on the theme of love. It is written in iambic pentameter.
Blank Verse	A type of poetry, often used in his plays, too. It has meter, but no rhyme.
Dramatic Irony	Where the reader knows more about the events of the play than the characters do.

Shakespearean Structure

Iambic Pentameter	A form of meter where the lines consist of five pairs of sullables. The first syllable is unstressed, and the second is stressed. (da-DUM)
Rhythm	A strong, regular, repeated pattern of movement or sound.
Caesura	A pause near the middle of the line, that breaks up the rhythm.
Rhyme	Where two or more words share the same vowel sound and ending.

Context of Shakespeare's Time

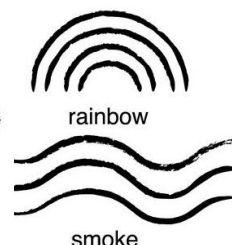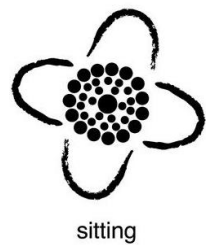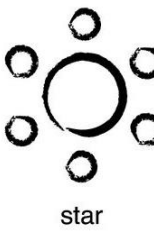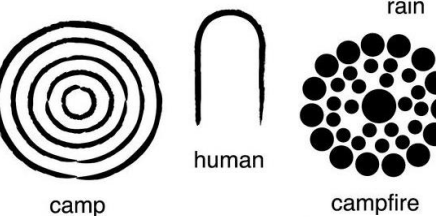|	
Courtly Love	A medieval tradition of love between a knight and an unattainable woman.
Duelling/ Honour	Honour was very important. If you refused a duel, your family's status would be weakened.
Patriarchal Society	Society was controlled by men, where women were seen as weaker. They needed to obey their fathers and husbands.
The Globe Theatre	Where most of Shakespeare's plays were performed. Only men were actors, and it had areas for people of all backgrounds.

Harmonious colours are next to each other on the colour wheel.

Monochrome means varying tones of **ONE** colour.

The **didgeridoo** is a long wooden wind instrument played by Australian Aborigines to produce a long deep sound.

WARM COLOURS

COOL COLOURS

ORANGE, YELLOW - ORANGE, YELLOW, YELLOW - GREEN, GREEN, BLUE - GREEN, BLUE, BLUE - PURPLE, PURPLE, RED - PURPLE, RED, ORANGE - RED

Complementary colours are opposite each other on the colour wheel.

A **boomerang** is a curved flat piece of wood that can be thrown so that it will return to the thrower, traditionally used by Australian Aborigines as a hunting weapon.

Clapping sticks are a traditional percussion instrument used during ceremonies and songs.

meeting place

rain

camp

human

campfire

Symbols are used to tell the stories of the Dreamtime.

star

sitting

rainbow

smoke

waterhole

The **Bull-roarer** is a sacred object used in Aboriginal religious ceremonies, consisting of a piece of wood attached to a string, whirled round to produce a roaring noise.

Composition is the placement or arrangement of visual elements in a piece of work.

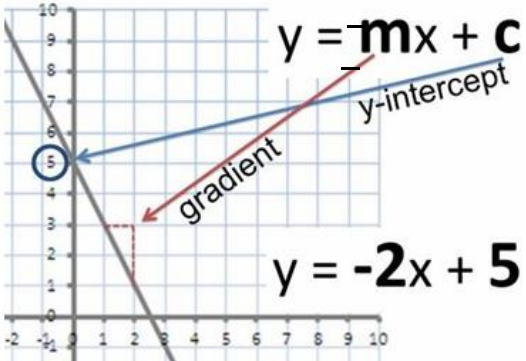| Media	Best practice
Coloured Pencils	• Apply using a soft circular motion • Start with the lightest colours and build up colour/tone • Harmonious colours add depth • Complimentary colours add definition • A sharp pencil will create a crisp finish • Avoid applying a thick stripy line of tone around the edge of shapes, blur it by applying soft pressure on the edge
Watercolour	• Mix your own variations of colour instead of using them straight out of the palette to make your work look more individual • Avoid adding too much water to your paint or the paper will start to bobble/wave • Apply colour in layers to build up tone • To blend colours on the page work quickly and place wet next to wet • When you want colour to stay separate make sure you don't apply wet next to wet • Consider layering mark-making on top of dry layers to add interest • Change your water regularly to avoid cross contamination
Papier Mache	• Rip OR cut (not both) • Use 2cm strips to cover whole surface of boomerang • Overlap to avoid leaving gaps • Use a thin layer of PVA
Tonal Pencils	• Know your pencils- B are soft and dark (the higher the number the softer and darker they are) • H are hard pencils and so create a thinner and lighter line (the higher the number the harder and lighter they are) • Rest your hand on a paper towel to avoid smudging • Make sure your work transitions smoothly from light to dark • Use a soft circular motion
Oil Pastels/Wax Crayons	• Start with the lightest colours • Press on heavily to apply a strong coverage • Blend colours together by slightly overlapping • Be gestural with the marks you apply
Pen / Biro	• Work from left to right (or right to left if you are left handed) to avoid smudging • Use a paper towel to blot any excess ink of the nib • Work quickly to avoid letting too much ink collect on the page • Experiment with thickness of line and mark-making techniques

The **Dreamtime** is the Aborigines belief of how the world and its creation began. Aboriginal culture includes ceremonies, body art, music, art and story telling.

Aborigines are the original inhabitants of Australia.

Topic	Key fact	Hegarty maths clip number
Expanding single brackets	$2(y-3) = 2 \times y - 2 \times 3 = 2y - 6$ ✓	160 - 161
Plotting linear graphs using a table of values	▪ Need minimum 3 pairs of coordinates. ▪ Start at x = 0. ▪ Do the positive x co-ordinates first. ▪ X co-ordinate: along the corridor ▪ Y co-ordinate: up the stairs. ▪ Y = mx + c will be a straight line.	206
Identifying gradient and y-intercept	The number in front of x is called the gradient and tells us how many up (+) or down (-) the graph goes for every 1 across (right). $y = mx + c$ y-intercept gradient $y = -2x + 5$	207
Calculating with Decimals	Addition and subtraction: line up the decimal point. Multiplication: Change to whole numbers and remember to put the point in at the end. Division: If dividing by a decimal times both numbers by 10, 100 or 1000. Do not put decimal back in.	47 - 51
Four Operations with Fractions	To add and subtract fractions you need to write all fractions in a sum with the same denominator by writing equivalent fractions. Multiplying: Cancel down whenever possible, then multiply the numerators together and multiply the denominators together. Dividing fractions: KFC 　　(**K**eep the first, **F**lip the second and **C**hange the sign to x)	65 -78
Sharing in a given ratio	Always find 1 part	332 to 334
Ratio problems	Set out in columns and put information below the appropriate column	335 to 338
Proportion	Direct proportion: as one quantity increases so does the other Inverse proportion: as one quantity increases the other decreases	339 to 342
Mean, Median, Mode and Range (recap averages)	Mean: Add up all the numbers and then divide by the number of items. Median: Put in order and then find the middle. If two middle values then add the two middle numbers and divide by 2. Mode: The number that appears the most. There can be more than one mode. Range: The difference between the largest and smallest numbers.	404 -410 And 419 – 421

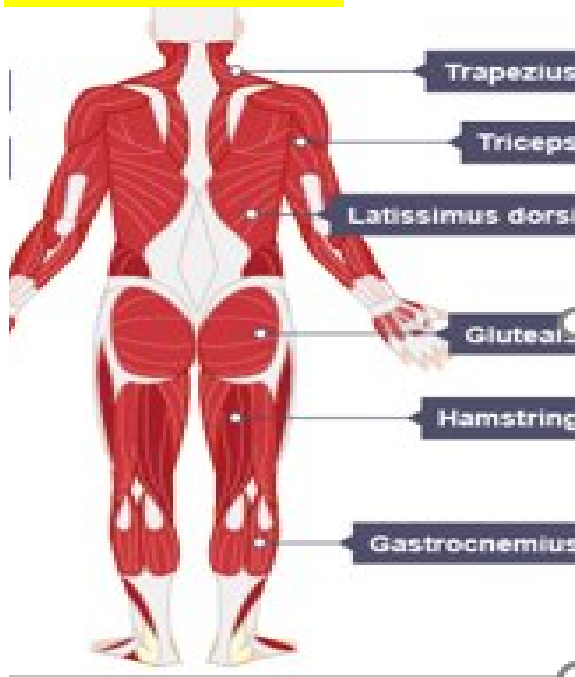|		
Multi-step Angle Reasoning	Angles on a straight line add up to 180°. Angles in a triangle add up to 180°. Angles in a quadrilateral add up to 360°. Vertically opposite angles are equal. Angles around a point add up to 360°.	477 - 480, 484 - 491, 812 - 815
Pie Charts	• Find the angle for each category: • 360° ÷ total frequency = the number of degrees per piece of data • To work out each category's associated angle we multiply the number of degrees per piece of data by each frequency. Top Tip: Always draw each angle clockwise, using the previous line drawn to start.	427 - 429

Key Vocabulary

- ○ Numerator - the top number in a fraction.
- ○ Denominator - the bottom number in a fraction.
- ○ Mixed number - a number consisting of an integer and a proper fraction.
- ○ Improper fraction - an improper fraction is a fraction where the top number (numerator) is greater than or equal to the bottom number (denominator): it is top-heavy.
- ○ Direct proportion - one quantity increases at the same rate as the other quantity increases.
- ○ Inverse proportion - one quantity increases at the same rate as the other quantity decreases.
- ○ Rate - a price or charge set according to a scale or standard hotel rates.
- ○ Quantity – the amount of something.
- ○ Expand – to multiply the term before bracket by the terms in the bracket.
- ○ Expression – collection of terms. E.g 4x + 8p.
- ○ Gradient – the steepness of a curve
- ○ Linear Graph – straight line graph $y = mx + c$
- ○ Y-intercept – where the graph crosses the y axis

Know your Muscles

Front muscles:
- Pectorals
- Deltoid
- Biceps
- Abdominals
- Quadriceps
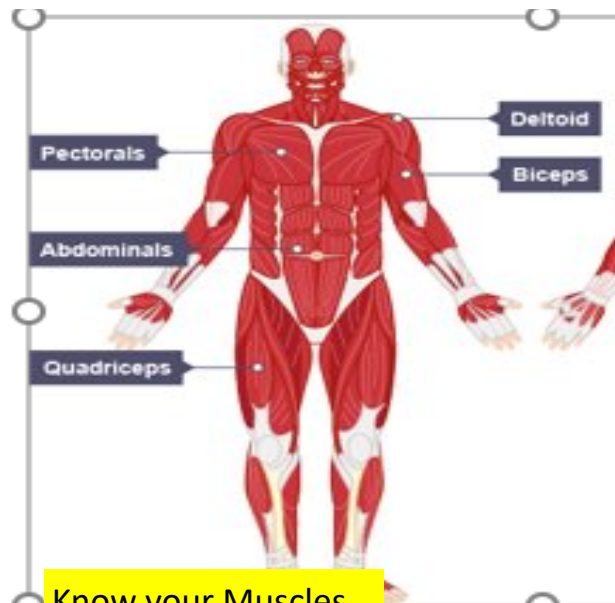
Back muscles:
- Trapezius
- Triceps
- Latissimus dorsi
- Gluteals
- Hamstring
- Gastrocnemius
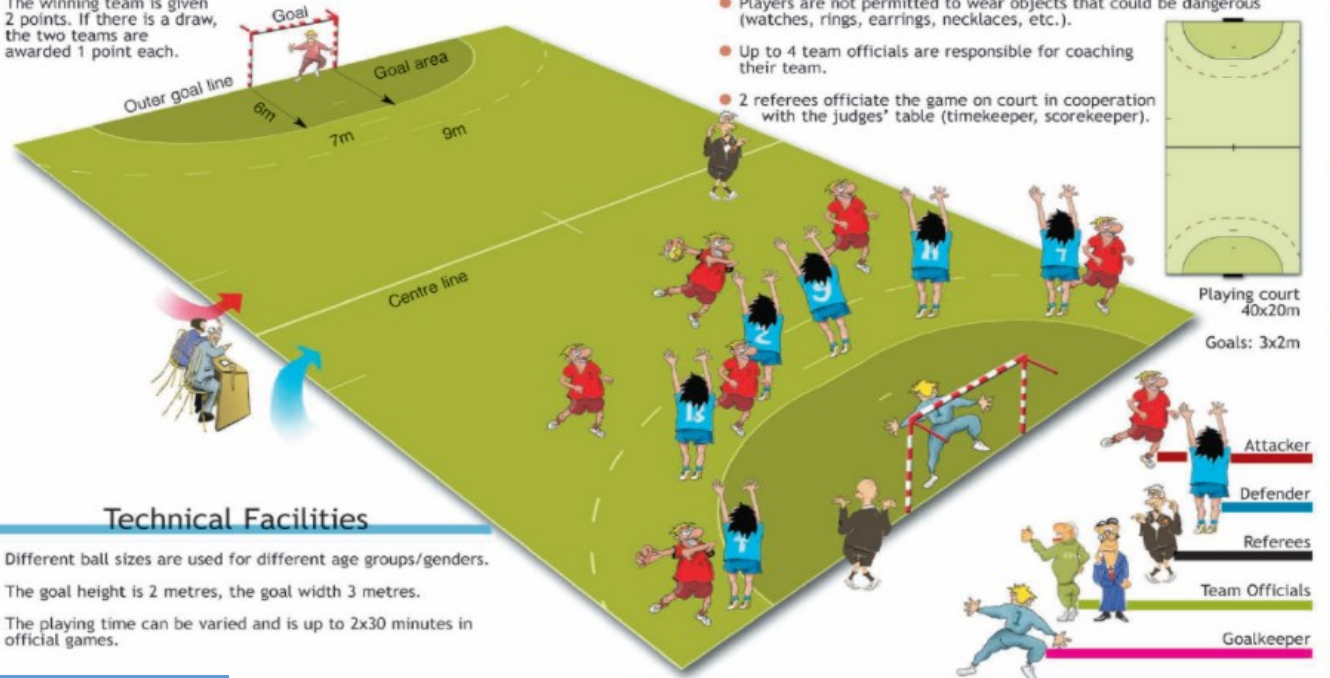
The Basic Principles of Handball

- Handball is a team sport based on "fair play" principles.
- On court there are two male or female teams playing against each other, both trying to score goals with a handball.
- The team that has scored the most goals when the playing time is over is the winner.
- The winning team is given 2 points. If there is a draw, the two teams are awarded 1 point each.

Labels on diagram: Goal, Goal area, Outer goal line, 6m, 7m, 9m, Centre line

Technical Facilities

- Different ball sizes are used for different age groups/genders.
- The goal height is 2 metres, the goal width 3 metres.
- The playing time can be varied and is up to 2x30 minutes in official games.

Teams/Players/Team Officials/Referees

- Each team consists of up to 14 players. On court a team has 6 field players and 1 goalkeeper.
- Within each team the players are interchangeable during the game.
- All field players of a team wear identical, coloured uniforms. Goalkeepers wear uniforms that differ from those of the field players.
- Players are not permitted to wear objects that could be dangerous (watches, rings, earrings, necklaces, etc.).
- Up to 4 team officials are responsible for coaching their team.
- 2 referees officiate the game on court in cooperation with the judges' table (timekeeper, scorekeeper).

Playing court 40x20m

Goals: 3x2m

Attacker
Defender
Referees
Team Officials
Goalkeeper

BASICS

Warm ups should be …..
- activity specific
- Pulse raising
- Prepare you properly for the activity

Fitness test Scores

- Cooper Run →
- 30m Sprint →
- Illinois Agility Run →
- Sit & Reach →
- Vertical Jump →

- Sit Ups →
- Ruler Drop →
- Stork Stand →
- Grip Test →
- Standing Long Jump →
- Wall Throw →

UNIT 8
Saying what jobs people do, why they like/dislike then and where they work

				Trabaja en… *[he/she works in…]*
Mi padre *[my father]* **Mi hermano** *[my brother]* **Mi tío** *[my uncle]*	**es** *[he is]* **trabaja como** *[works as a]*	**actor** *[actor]* **abogado** *[lawyer]* **amo de casa** *[house-husband]* **cocinero** *[chef]* **contable** *[accountant]* **enfermero** *[nurse]* **granjero** *[farmer]* **hombre de negocios** *[business man]* **ingeniero** *[engineer]* **mecánico** *[mechanic]* **médico** *[doctor]* **peluquero** *[hairdresser]* **profesor** *[teacher]*	**le gusta porque es** *[he/she likes it because it is]* **no le gusta porque es** *[he/she doesn't like it because it is]*	**aburrido** *[boring]* **activo** *[active]* **difícil** *[difficult]* **divertido** *[funny]* **estimulante** *[stimulating]*	...el campo *[the countryside]* ...casa *[at home]* ...la ciudad *[the city]* ...un colegio *[a school]* ...una empresa *[a company]* ...un garaje *[a garage]*
Mi madre *[my mother]* **Mi hermana mayor** *[my older sister]* **Mi tía** *[my aunt]*	**es** *[she is]* **trabaja como** *[works as a]*	**actriz** *[actress]* **abogada** *[lawyer]* **ama de casa** *[house-wife]* **cocinera** *[chef]* **contable** *[accountant]* **enfermera** *[nurse]* **granjera** *[farmer]* **ingeniera** *[engineer]* **mujer de negocios** *[business woman]* **mecánica** *[mechanic]* **médica** *[doctor]* **peluquera** *[hairdresser]* **profesora** *[teacher]*	**le encanta porque es** *[he/she loves it because it is]* **lo odia porque es** *[he/she hates it because it is very]*	**estresante** *[stressful]* **fácil** *[easy]* **gratificante** *[rewarding]* **interesante** *[interesting]*	... una granja *[a farm]* ...un hotel *[a hotel]* ...una oficina *[an office]* ...un restaurante *[a restaurant]* ...un taller *[a workshop]* ...un teatro *[a theatre]*

THE LANGUAGE GYM

UNIT 11: Talking about food Likes/dislikes and why [Part 1]

Singular	le café [coffee] MASC		
J'adore [I love]	le chocolat [chocolate]		dégoûtant [disgusting]
	le fromage [cheese]		délicieux [delicious]
J'aime beaucoup [I like a lot]	le jus de fruits [fruit juice]		dur [tough]
	le lait [milk]		épicé [spicy]
J'aime [I like]	le miel [honey]	parce que c'est [because it is]	gras [oily, greasy]
J'aime un peu [I like a bit]	le pain [bread]		juteux [juicy]
	le poisson [fish]		malsain [unhealthy]
Je n'aime pas [I don't like]	le poulet rôti [roast chicken]		rafraîchissant [refreshing]
	le riz [rice]		sain [healthy]
Je déteste [I hate]	FEM		savoureux [tasty]
	la salade verte [green salad]		sucré [sweet]
Je préfère [I prefer]	la viande [meat]		
	l'eau [water] (l' + vowel)		
Plural	MASC		
J'adore [I love]	les chocolats [chocolates]		dégoûtant(e)s [disgusting]
	les fruits [fruit]		délicieux/euses [delicious]
J'aime beaucoup [I like a lot]	les hamburgers [burgers]		dur(e)s [tough]
	les légumes [vegetables]		épicé(e)s [spicy]
J'aime [I like]	les œufs [eggs]		gras(se)s [oily, greasy]
J'aime un peu [I like a bit]		parce qu'ils/elles sont [because they are]	juteux/euses [juicy]
	FEM		malsain(e)s [unhealthy]
Je n'aime pas [I don't like]	les bananes [bananas]		rafraîchissant(e)s [refreshing]
	les fraises [strawberries]		
Je déteste [I hate]	les crevettes [prawns]		sain(e)s [healthy]
	les oranges [oranges]		savoureux/euses [tasty]
Je préfère [I prefer]	les pommes [apples]		sucré(e)s [sweet]
	les tomates [tomatoes]		

PLEASE NOTE
[1] after "c'est" an adjective is always in its masculine singular form
Ex. J'aime la viande, c'est délicieux.
[2] however, in the second section after "ils sont" or "elles sont", adjectives agree both in gender and number
Ex. J'aime les œufs parce qu'ils sont sains.
Ex. J'aime les tomates parce qu'elles sont saines.

UNIT 9
Comparing people's appearance and personality

Él [he] Ella [she] Mi abuela [my gran] Mi abuelo [my grandad] Mi amigo/a [my friend] Mi gato [my cat] Mi hermana [my sister] Mi hermano [my brother] Mi madre [my mum] Mi mejor amigo/a [my best friend] Mi padre [my dad] Mi perro [dog] Mi primo/a [my cousin] Mi tía [my aunt] Mi tío [my uncle] Mis abuelos [my grandparents] Mi novio [boyfriend] Mi novia [girlfriend] Mis padres [my parents]	es [is] son [are]	más [more] menos [less] tan [as]	**aburrido/a** *[boring]* **alto/a** *[tall]* **amable** *[kind]* **antipático/a** *[unfriendly]* **bajo/a** *[short]* **cariñoso/a** *[affectionate]* **débil** *[weak]* **delgado/a** *[slim]* **deportista** *[sporty]* **divertido/a** *[funny]* **feo/a** *[ugly]* **fuerte** *[strong]* **gordo/a** *[fat]* **guapo/a** *[good-looking]* **hablador(a)** *[talkative]* **inteligente** *[intelligent]* **joven** *[young]* **perezoso/a** *[lazy]* **ruidoso/a** *[noisy]* **serio/a** *[serious]* **simpático/a** *[friendly]* **trabajador(a)** *[hard-working]* **tranquilo/a** *[relaxed]* **tonto/a** *[stupid]* **viejo/a** *[old]*	que [than] como [as]	él ella mi abuela mi abuelo mi amiga <u>Ana</u> mi amigo <u>Paco</u> mi gato mi hermana mi hermano mi hijo mi hija mi madre mi mejor amiga mi mejor amigo nosotros *[us]* mi padre mis padres mi pato mi perro mi prima mi primo mi tortuga mi tía mi tío mis abuelos mis hermanas mis hermanos mis primos mis tíos yo

Autor's note: Add an 'S' at the end of your adjectives for plurals (when describing more than one person). E.g. Mis padres son más TRANQUILOS que mis tíos.

THE LANGUAGE GYM

Unit 12
Talking about food: Likes/dislikes [Part 2]

Meals	MASC		aigre [acidic , sour]
	du chocolat [chocolate]		amer [bitter]
	du café [coffee]		bon [good]
Au petit-déjeuner, je prends [At breakfast I have]	du fromage [cheese]		dégoûtant [disgusting]
	du jus de fruits [fruit juice]		délicieux [delicious]
	du lait [milk]		dur [tough]
Au déjeuner, je mange [At lunch I eat]	du miel [honey]	**car c'est** [because it is]	épicé [spicy]
	du poisson [fish]		fade [bland]
Au goûter, je prends [At tea time I have]	du poulet rôti [roast chicken]	**et je trouve cela** [and I find this]	gras [oily, greasy]
	du riz [rice]		juteux [juicy]
Au dîner, je mange [At dinner I eat]	du saumon [salmon]		léger [light]
	du thon [tuna]		malsain [unhealthy]
Je bois [I drink]	FEM		rafraîchissant [refreshing]
	de l'eau [water]		riche en vitamines [rich in vitamins]
	de la pizza [pizza]		sain [healthy]
	de la salade verte [green salad]		savoureux[tasty]
	de la viande [meat]		sucré [sweet]
What I like/dislike	PLURAL MASC		
	les fruits [fruit]		aigres [acidic , sour]
J'adore [I love]	les hamburgers [burgers]		amers/ères [bitter]
	les légumes [vegetables]		bons/bonnes [good]
J'aime beaucoup [I like a lot]	les sandwiches au fromage [cheese sandwiches]		dégoûtant(e)s [disgusting]
J'aime [I like]	PLURAL FEM	**car ils/elles sont** [because they are]	délicieux/euses [delicious]
J'aime un peu [I like a bit]	les bananes [bananas]		dur(e)s [tough]
	les crevettes [prawns]		sucré(e)s [sweet]
Je n'aime pas [I don't like]	les oranges [oranges]		etc…
	les pêches [peaches]		
Je déteste [I hate]	les pommes [apples]		
	les saucisses [sausages]		
	les tomates [tomatoes]		

UNIT 13
Talking about clothes

Quand il fait chaud [when it is hot]		**une casquette** FEM [a baseball cap]	**blanche** [white]
Quand il fait froid [when it is cold]		**une chemise** [a shirt]	**bleue** [blue]
Quand je sors avec mon ami/amie [when I go out with my friend]		**une ceinture** [a belt]	**grise** [grey]
		une cravate [a tie]	**jaune** [yellow]
	je porte [I wear]	**une écharpe** [a scarf]	**marron** [brown]
Quand je sors avec mes amis [when I go out with my friends]		**une jupe** [a skirt]	**noire** [black]
		une montre [a watch]	**orange** [orange]
		une robe [a dress]	**rouge** [red]
Quand je joue au foot [when I play football]		**une veste** [a jacket] **une veste de sport** [a sports jacket]	**verte** [green]
		un chapeau [a hat] MASC	**blanc** [white]
A la maison [at home]		**un collier** [a necklace]	**bleu** [blue]
En discothèque [at the nightclub]		**un costume** [a suit] **un gilet** [a waistcoast]	**gris** [grey]
Au collège [at school]		**un haut** [a top]	**jaune** [yellow]
	il/elle porte [he/she wears]	**un jean** [jeans] **un maillot de bain** [a swimsuit]	**marron** [brown]
Au gymnase [at the gym]		**un manteau** [a coat]	**noir** [black]
A la plage [at the beach]		**un pantalon** [trousers]	**orange** [orange]
		un pull [jumper] **un short** [shorts]	**rouge** [red]
		un survêtement [a tracksuit] **un tee-shirt** [a tee-shirt]	**vert** [green]
Normalement [normally]		**un tee-shirt sans manches** [tank top / vest] **un uniforme** [a uniform]	
En général [in general]		**PLURAL FEM**	**blanches** [white]
Souvent [often]		**des bottes** [boots] **des boucles d'oreilles** [earrings]	**bleues** [blue]
		des chaussettes [socks]	**grises** [grey]
		des chaussures [shoes]	**jaunes** [yellow]
		des chaussures à talons hauts [high heel shoes]	**marron** [brown]
		des chaussures de sport [sports shoes]	**noires** [black]
		des pantoufles [slippers]	**orange** [orange]
			rouges [red]
		des sandales [sandals]	**vertes** [green]

Year 8 - Textiles Design and Technology

The Design Process

THE DESIGN PROCESS
IDENTIFY PROBLEM
↓
BRAINSTORM
↓
DESIGN
↓
BUILD
↓
REDESIGN ← TEST & EVALUATE
↓
SHARE SOLUTION

"The design process involves continually evaluating and redesigning to develop ideas"

Product Analysis

A is for **Aesthetics**	👁
C is for **Cost**	£
C is for **Customer**	🚻
E is for **Environment**	♻
S is for **Size**	✎
S is for **Safety**	⚠
F is for **Function**	⚙
M is for **Material**	▦

"Research like product analysis helps to inspire our own ideas"

Primary and secondary data

Primary sources of information are gathered by the designer and used to help improve their designs.

Secondary sources of information use data already found by other people or organisations that are relevant.
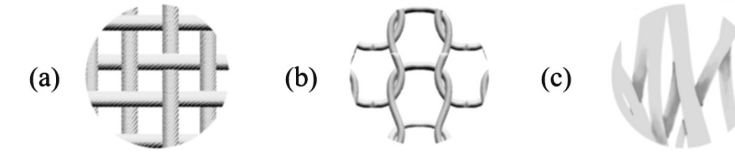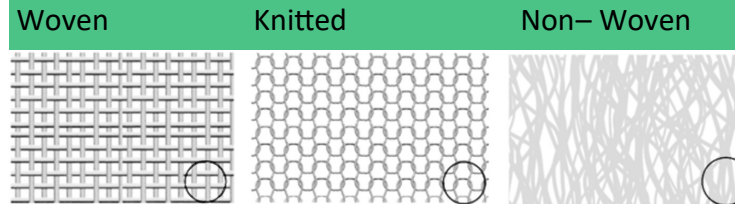
User centred design.

User centred design consider who the target market will be and thinks about their needs and wants. Examples of this could be:

- designing fastenings for small children to use
- creating products for the partially sighted, which might include bright colours or large buttons
- redesigning products using the ergonomic data of a wheelchair user

Fabric Construction

Woven	Knitted	Non– Woven
(a)	(b)	(c)
Strong, non stretch, different weaves: plain, twill, satin. Use for shirts, jeans, bed linen	Cheaper to produce, stretch due to loop structure, can snag and cause runs. Used for sportswear, tights and jumpers	Very cheap, not strong (unless bonded), can be easily torn. Use for disposable products e.g. jay clothes, disposable hats, felt.

Cotton V's Polyester

Material	Source of origin	Sustainable?
Cotton		More sustainable than Polyester, because the plants can continually grow. Uses a large amount of water to grow, clean and process the fibres. Pesticides and dyes can be poisonous and cause pollution. Organic cotton is produced more
Polyester		Made from a fossil fuel (coal/oil) so not sustainable. Can be recycled though. Each time polyester is washed microfibre are release which is polluting the oceans and getting into the eco system.

The 6Rs

Rethink	Do we make too many products? Design in a way that considers people and the environment.	
Refuse	Don't use a materials or buy a product if you don't need it or if it's bad for people or the environment	
Reduce	Cut down the amount of material and energy you use as much as you can.	
Reuse	Use a product to make something else with all or parts of it.	
Recycle	Reprocess a material or product and make something else.	
Repair	When a product breaks down or doesn't work properly, fix it.	

The Impact Of Fast Fashion

Textile production produces harmful emissions and other pollution from chemicals and dyes.

Poor-quality clothing leads to more textile waste. Plastic based fibers release harmful gases in landfills.

Textile production uses scarce resources. The industry uses 100 billion cubic meters of water annually — about 4% of global freshwater withdrawal.

Microplastics enter the water system when synthetic materials are washed. Ocean species consume these plastics, and so do people eating seafood.

Key Terms:

Fast Fashion—clothes that are made quickly and cheaply to meet everchanging fashion trends. Often linked to poor working conditions.

Sustainability — when materials or products can be made without damage to people of the environment. E.g. Organic cotton and   Bamboo.

Fairtrade— trade between companies in developed countries and producers in developing countries in which fair prices are paid to the producers

FAIRTRADE