LYMM
HIGH SCHOOL

#4

NAME:

Year 8 Knowledge Organisers Autumn Term
(Half term 1 and 2)

A Knowledge-Rich Curriculum at Lymm High School

Why are we using Knowledge Organisers?

Research around memory suggests that "knowledge is sticky": the more factual knowledge you know, the easier it is to learn more in future! But there is a catch: If knowledge is studied once, and not revisited or revised, it is not stored in long-term memory.

To strengthen your memory, and ensure information is stored permanently in your long-term memory, it must be revisited frequently. This means that after one lesson, or a single test, the knowledge is not fully embedded or learned unless it is studied again.

This is why your knowledge organiser is an important part of revising the essential information you learn in class!

Use of Knowledge Organisers for revision and in class

As part of their home learning, students should be revising what they have learned recently, but also content they were taught previously. Therefore, as part of our strategy to ensure that knowledge is embedded over time, we have developed knowledge organisers, which contain the 'bedrock knowledge' necessary in each subject area. A mastery of this knowledge will ensure that students can progress comfortably to new units of learning, and can be successful in their subjects.

This information will provide the basis of our assessments and exams, and so getting into good revision habits with these resources will ensure students feel as prepared as possible.

Teachers may set specific areas of each knowledge organiser as part of homework tasks on 'Satchel one' – formerly 'Show my Homework' – however students should be using their knowledge organiser for independent revision regularly.

For mastery of your subjects, remember:

"Don't practise until you get it right. Practise until you can't get it wrong!"

As well as supporting revision at home, this knowledge organiser should be kept in students' bags, and brought to school each day so that it can also be used and referred to in lessons.
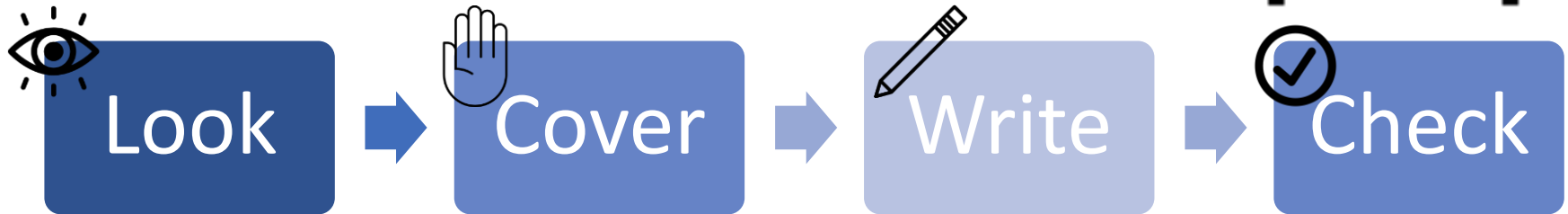
CONTENTS
(Subjects are arranged alphabetically)

How to use your knowledge organiser:

Recommended strategies *(don't just read or highlight – **get active!**):*

Look ➡ **Cover** ➡ **Write** ➡ **Check**

- Create **mind maps**
- Create **flash cards**
- Write out **key points on post-it notes** and place somewhere visible so you see and review them regularly
- **Write your own quiz questions** based on your knowledge organiser – leave until the next morning, next day, or next week to see how well you have retained the information
- **Get someone else to test you**
- **Use key vocabulary** from your KO in sentences
- Use the formulae, vocabulary lists, facts, processes etc on your KO to **help you complete homework tasks**
- **Draw diagrams and flow charts** of key information
- **Summarise each section** into your own words – what are the MOST important facts or details in each box?
- **"Just a minute"** – time yourself for 60 seconds. **Can you talk about this topic or explain it to someone else without stopping for a whole minute?**
- **Draw images/symbol**s to represent the different concepts and vocabulary
- **Teach someone else** about this topic. Research suggests we retain even more information when we teach a topic than when we learn it or revise it.

Tier 2 Vocabulary – General academic vocabulary for success across all subjects

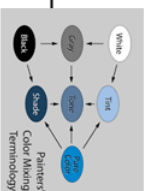*"The limits of my language are the limits of my world"* - *Ludwig Wittgenstein*

List 1		List 2		List 3	
acquire (verb)	get	**final (adj)**	last	**primary (adj)**	First/main
appropriate (adj)	suitable/correct	**Institute (n)**	Company/society	**regulations (n)**	rules
authority (n)	the person in charge/expert/power	**injury (n)**	Pain/discomfort	**resident (n)**	Person who lives there
acquire (v)	get	**indicate (v)**	show	**restricted (adj)**	Limited/controlled
consistent (adj)	same every time	**journal (n)**	diary/bulletin/paper	**significant (adj)**	important
construct (v)	make	**legislation (n)**	laws	**sought (v)**	Looked for/wanted
consumer (n)	customer	**labour (n)**	work	**subsequent (adj)**	coming after
credit (n/v)	(to give) money	**maintenance (n)**	Repairs/upkeep	**traditional (adj)**	Old fashioned/typical
conduct (v)	do/carry out	**obtain (v)**	get	**veritable (adj)**	real/true
distribution (n)	the spread of something	**perceive (v)**	Think/believe	**withstand (v)**	bear/survive
economic (adj)	to do with wealth and money	**previous (adj)**	Earlier/before	**yield (v)**	Stop/give in
Evaluation (n)	review	**purchase (v)**	buy	**zeitgeist (n)**	what's currently popular

LYMM HIGH SCHOOL

YEAR 8 KNOWLEDGE ORGANISER - BASIC SKILLS

| Term	Definition
Tone	A tone is produced either by the mixture of a colour with grey, or by both tinting and shading..
Shade	The mixture of a colour with black, which increases darkness.
Tint	The mixture of a colour with white, which increases lightness
Mark making	Different lines, patterns, and textures we create in a piece of art. It applies to any art material on any surface, not only paint on canvas or pencil on paper.
Composition	The position and layout of shapes on the paper
Still life	A painting or drawing of an arrangement of objects.
Cubism	A movement in art, especially painting, in which perspective with a single viewpoint was abandoned and use was made of simple geometric shapes, interlocking planes, and, later, collage.

What makes a successful artist research page?

You must include:

- Artists name (title)
- Imagery of the artists work
- Annotation and your own opinion (facts about the artist as well as analysing the artists work)
- Your own drawings or 'mini studies' of the artists work.
- Consider presentation of your page. Try to make your page reflect the artists style (through use of colour or even media you choose to use).

Zentangle- a type of pattern made from repeated simple shapes and lines which form seemingly complex patterns. This is carried out as a meditative, relaxing activity similar to doodling.

Symmetry- being made up of exactly similar parts facing each other or around an axis or line of symmetry.

Recording from Observation

Primary source observational drawing: drawing something real in front of you.

Secondary source observational drawing: drawing something from a picture.
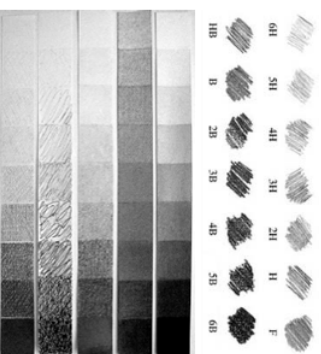
Grades of Pencils

Pencils come in different grades. The softer the pencil the darker the tone.

$H = hard, B = black (soft)$

In Art the most useful pencils are B, 2B and 4B.

If your pencil has no grade it is likely to be an HB (hard black in the middle of the scale)

Art

The colour wheel	This is a diagram that shows how colours are mixed or the relationship between colours.
Primary colours	Red, blue and yellow. These are colours that cant be made by mixing other colours together.
Secondary colours	Green, orange and purple. Mix two primary colours to create a secondary colour
Tertiary colours	These are colours create by mixing a primary and a secondary colour together.
Complimentary colours	These are colours that are opposite on the colour wheel.
Harmonious colours	These are colours from the same section of the colour wheel. These work well when blending.
Cool colours	Fall on one half of the colour wheel. Calm or soothing in nature. They are not overpowering and tend to recede in space. For this reason, they typically make a space seem larger.
Warm colours	Fall on the opposite side to the cool colours on the colour wheel. They are vivid or bold in nature. They tend to advance in space and can be overwhelming.

Blending
- Always start with the lightest colour and add the darker colour in small amounts
- Harmonious colours blend well together.
- Cross hatching is a good mark making method when blending dry materials.
- Wet materials should be mixed on a palette before blending.

Mixing paint
- Always start with the lightest colour and add the darker colour in small amounts.
- Use a palette to mix your colour.

Scan here to view a help guide on mixing paint.

Enlarging using the grid method – QR code below
- The grid method involves drawing a grid over your reference photo, and then drawing a grid of **equal ratio** on your work surface.
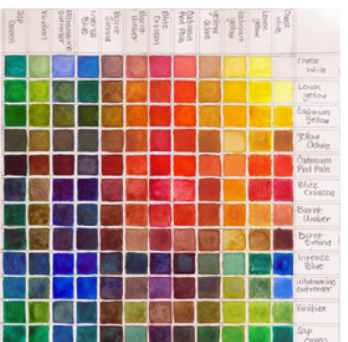
Scale
The overall physical size of an artwork or objects in the artwork.

Proportion
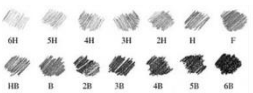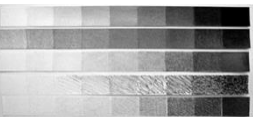The dimensions of a composition and relationships between height, width and depth.

LYMM HIGH SCHOOL

Art

Recording from Observation

Primary source observational drawing: drawing something real in front of you.

Secondary source observational drawing: drawing something from a picture.

Insect	Insects have a chitinous exoskeleton, a three-part body (head, thorax and abdomen), three pairs of jointed legs, compound eyes and one pair of antennae. Insects are the most diverse group of animals.
Tone	A tone is produced either by the mixture of a colour with grey, or by both tinting and shading.
Line drawing	A drawing done using only narrow lines, without blocks of shading.
Mark Making	Different lines, patterns, and textures we create in a piece of art. It applies to any art material on any surface, not only paint on canvas or pencil on paper.
Mono printing	A form of printmaking that has lines or images that can only be made once, unlike most printmaking, which allows for multiple originals.
Poly block printing	A form of printmaking using polystyrene as a block, in which you indent to create a textured surface.
Mixed Media	A term used to describe artworks composed from a combination of different media or materials.
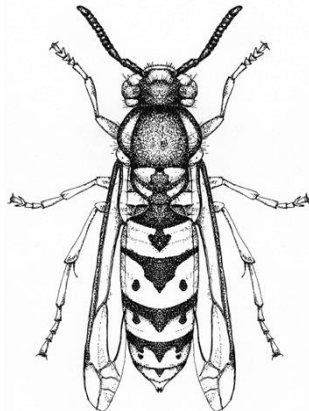
Sue Brown
- Professional artist for 15 years.
- Her work is inspired by nature.
- Her work predominantly consists of printmaking.
- She likes to use found or ready made objects within her work.

What makes a successful artist research page?
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- Artists name (title)
- Imagery of the artists work
- Annotation and your own opinion (facts about the artist as well as analysing the artists work)
- Your own drawings or 'mini studies' of the artists work.
- Consider presentation of your page. Try to make your page reflect the artists style (through use of colour or even media you choose to use).

Embellishment is a decorative detail or feature added to something to make it more attractive.

Embroidery is the craft of decorating fabric or other materials using a needle to apply thread or yarn. *Embroidery* may also incorporate other materials such as pearls, beads, quills, and sequins.
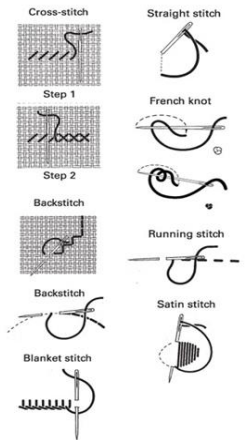
2D	Two dimensional: Having or appearing to have length and breadth but no depth.
3D	Three dimensional: Having or appearing to have length, breadth, and depth.

Drawing with wire examples

Scan below to view how to complete a poly block print
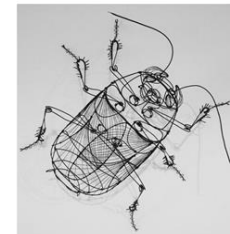
Places of interest to visit
- Chester Zoo – Butterfly house
- World Museum - Liverpool

Year 8 Material Focus: Polymers
Types of Polymers......

The properties and uses of some common thermosoftening plastics are shown in the table below.

Name	Properties	Principal uses
Polyamide (Nylon)	Creamy colour, tough, fairly hard, resists wear, self-lubricating, good resistance to chemicals and machines	Bearings, gear wheels, casings for power tools, hinges for small cupboards, curtain rail fittings and clothing
Polymethyl methacrylate (Acrylic)	Stiff, hard but scratches easily, durable, brittle in small sections, good electrical insulator, machines and polishes well	Signs, covers of storage boxes, aircraft canopies and windows, covers for car lights, wash basins and baths
Polypropylene	Light, hard but scratches easily, tough, good resistance to chemicals, resists work fatigue	Medical equipment, laboratory equipment, containers with built-in hinges, 'plastic' seats, string, rope, kitchen equipment
Polystyrene	Light, hard, stiff, transparent, brittle, with good water resistance	Toys, especially model kits, packaging, 'plastic' boxes and containers
Low density polythene (LDPE)	Tough, good resistance to chemicals, flexible, fairly soft, good electrical insulator	Packaging, especially bottles, toys, packaging film and bags
High density polythene (HDPE)	Hard, stiff, able to be sterilised	Plastic bottles, tubing, household equipment

The properties and uses of some common thermosetting plastics are shown in the table below.

Name	Properties	Principal uses
Epoxy resin	Good electrical insulator, hard, brittle unless reinforced, resists chemicals well	Casting and encapsulation, adhesives, bonding of other materials
Melamine formaldehyde	Stiff, hard, strong, resists some chemicals and stains	Laminates for work surfaces, electrical insulation, tableware
Polyester resin	Laminated, good electrical insulator, resists chemicals well	Casting and encapsulation, bonding of other materials
Urea formaldehyde	Stiff, hard, strong, brittle, good electrical insulator	Electrical fittings, handles and control knobs, adhesives

Scan the QR code to learn about different types of polymers......

THERMOPLASTICS — (Can be melted repeatedly)

THERMOSETS — (Once shaped, cannot be melted)

Buzzle.com

Scan the QR code to learn how plastic bottles are made......

Scan the QR code to learn about Bio Plastics......

2.3 Sustainability of plastics

End of life considerations are important for all products, but as most plastics take so long to biodegrade extra care should be taken to decide how it should be managed.

Many responsible companies producing plastic products conduct a **Life Cycle Assessment** (LCA) which informs them of the environmental impact of manufacturing their products. The information gathered helps them decide how to deal with their product when it has reached the end of its working life.

Almost all plastics are recyclable or biodegradable in some form – however, the difference in the quality of the recycled products varies dramatically.

Thermosetting plastics are generally considered non-recycled although they are frequently ground down and used as a filler material or they are used for **energy recovery** through incineration.

Thermoplastics are much more easily recycled for use as a recycled plastic product. If the plastics are carefully separated into the different types, the resulting material remains high quality and commands a higher price than mixed plastics. It is important to recycle as much as possible, and poorly discarded plastics are becoming a major environmental concern, especially in our countryside, rivers and ocean.

Plastic Resin Identification Codes

♳ 1 PETE **Polyethylene Terephthalate**	♴ 2 HDPE **High-Density Polyethylene**	♵ 3 PVC **Polyvinyl Chloride**	♶ 4 LDPE **Low-Density Polyethylene**	♷ 5 PP **Polypropylene**	♸ 6 PS **Polystyrene**	♹ 7 OTHER **Other**
Common products: soda & water bottles; cups, jars, trays, clamshells	Common products: milk jugs, detergent & shampoo bottles, flower pots, grocery bags	Common products: cleaning supply jugs, pool liners, twine, sheeting, automotive product bottles, sheeting	Common products: bread bags, paper towels & tissue overwrap, squeeze bottles, trash bags, six-pack rings	Common products: yogurt tubs, cups, juice bottles, straws, hangers, sand & shipping bags	Common products: to-go containers & flatware, hot cups, razors, CD cases, shipping cushion, cartons, trays	Common types & products: polycarbonate, nylon, ABS, acrylic, PLA; bottles, safety glasses, CDs, headlight lenses
Recycled products: clothing, carpet, clamshells, soda & water bottles	Recycled products: detergent bottles, flower pots, crates, pipe, decking	Recycled products: pipe, wall siding, binders, carpet backing, flooring	Recycled products: trash bags, plastic lumber, furniture, shipping envelopes, compost bins	Recycled products: paint cans, speed bumps, auto parts, food containers, hangers, plant pots, razor handles	Recycled products: picture frames, crown molding, rulers, flower pots, hangers, toys, tape dispensers	Recycled products: electronic housings, auto parts,

Design and Technology

Year 8 Material Focus: Metals
Types of Metals......

FERROUS METALS:
Metals that contain iron and are **magnetic**. They are prone to **rust**.

NAME	PROPERTIES	USES
Mild Steel	Tough. High tensile strength. Can be case hardened. Rusts very easily.	Most common metal used in school workshops. Used in general metal products and engineering.
Carbon Steel	Tough. Can be hardened and tempered.	Cutting tools such as drills.
Stainless steel	Tough, resistant to rust and stains.	Cutlery, medical instruments.
Cast iron	Strong but brittle. Compressive strength very high.	Castings, manhole covers, engines.
Wrought iron	Fibrous, tough, ductile, resistant to rusting.	Ornamental gates and railings. Not in much use today.

NON-FERROUS METALS:
Metals that do not contain iron and are **not magnetic**. They do **not rust**.

NAME	COLOUR	PROPERTIES	USES
Aluminium	Light grey	Ductile, soft, malleable, machines well. Very light.	Window frames, aircraft, kitchen ware.
Copper	Reddish brown	Ductile, can be beaten into shape. Conducts electricity and heat.	Electrical wiring, tubing, kettles, bowls, pipes.
Brass	Yellow	Hard. Casts and machines well. Surface tarnishes. Conducts electricity.	Parts for electrical fittings, ornaments.
Silver	Whitish grey	Ductile, Malleable, solders, resists corrosion.	Jewellery, solder, ornaments.
Lead	Bluish grey	Soft, heavy, ductile, loses its shape under pressure.	Solders, pipes, batteries, roofing.

ALLOYS:
Alloys are mixtures of metal with an element to improve its properties or **aesthetic**. For example brass is a mixture of copper and zinc. Alloys can also be classified as ferrous or non-ferrous.

NAME	COLOUR	PROPERTIES & USES
Brass	Gold	An alloy of copper and zinc, can be cast and machined, used for ornamental hardware
Pewter	Dark grey	Made up of tin (approximately 90 per cent), antimony (7 per cent) and other metals such as copper or bismuth, it has a low melting point (approximately 200°C), often used to make jewellery, candlesticks, outside light fixtures or tankards
Solder	Grey	An alloy of 60 per cent tin and 40 per cent lead, it has a low melting point (approximately 200°C), and is electrically conductive making it ideal for circuit manufacture

Wood Joints
Frame/Box Joints……
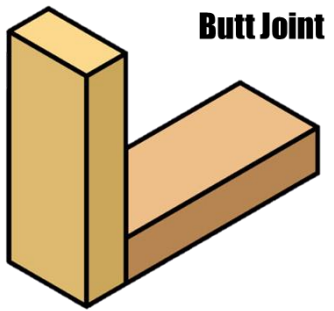
Butt Joint

A **butt joint** is a technique in which two pieces of material are joined by simply placing their ends together without any special shaping. A butt joint can be strengthened with dowels, nails and screws.

Comb/Finger Joint

A **finger joint**, also known as a comb joint, is a woodworking joint made by cutting a set of complementary, interlocking profiles in two pieces of wood, which are then glued. The cross-section of the joint resembles the interlocking of fingers between two hands, hence the name "finger joint"

Mitre Joint

A **mitre joint** is a joint made by cutting each of two parts to be joined, across the main surface, usually at a 45° angle, to form a corner, usually to form a 90° angle, though it can comprise any angle greater than 0 degrees.
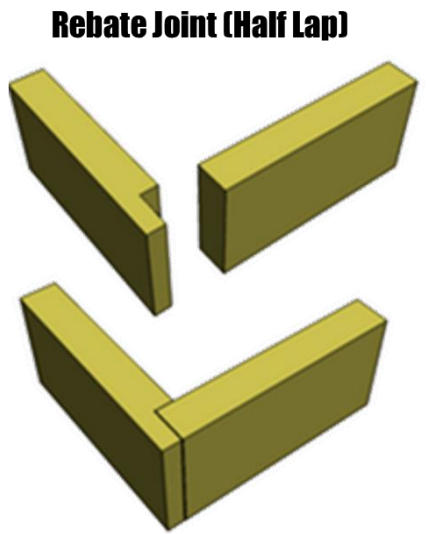
Rebate Joint (Half Lap)

The rebate joint is a very similar to the butt joint but the big difference between the two is that one of the ends of the timber has a groove cut out of it to create much better holding strength.

Manufacturing Processes
CAD/CAM (Computer Aided Design/Computer Aided Manufacture)

Laser cutter

vector cutting

Scan the QR code to learn how laser cutters work……

A drawing is sent from a CAD program such as 2D Design, to the laser cutter.
A laser cutter can cut through acrylic, laser plywood and some metals.

Tools and Equipment……..

Wasting Tools….
Cutting….

Coping Saw   Tenon Saw   Junior hack Saw   Chisel

Shaping….

Belt Sander

File

Disc Sander

Holding….

Metal Vice

F Clamp/ Screw Clamp

Finishing….

Wood

Plastic & Metal

Glass Paper (Wood)   Wood Oil   Emery Cloth   Wet & Dry Paper
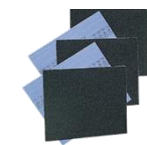
Joining….

PVA glue (wood glue)

PVA

Design and Technology

Manufacturing Processes
Stages of Pewter Casting......

Cut the pewter ingot into small pieces
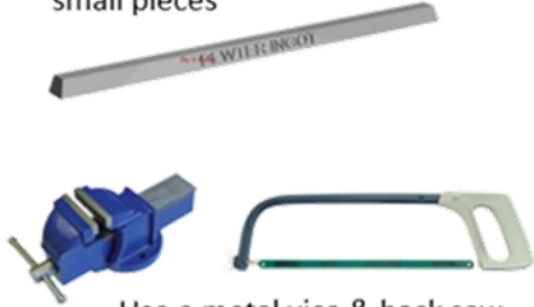
Use a metal vice & hack saw.
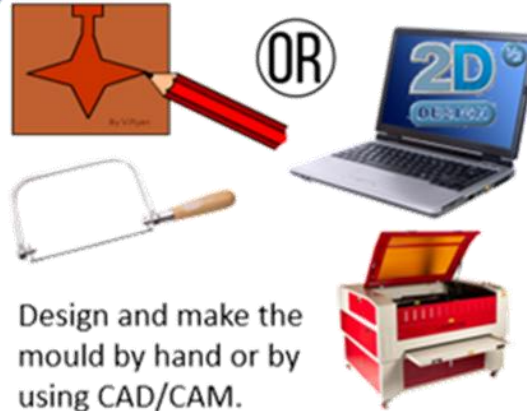
Design and make the mould by hand or by using CAD/CAM.

OR
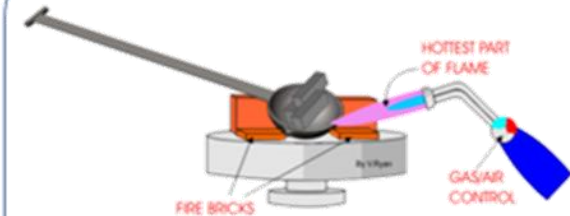
Place pewter ingots in the ladle and heat the pewter with a gas torch or heat gun. Melt the pewter.

HOTTEST PART OF FLAME
GAS/AIR CONTROL
FIRE BRICKS
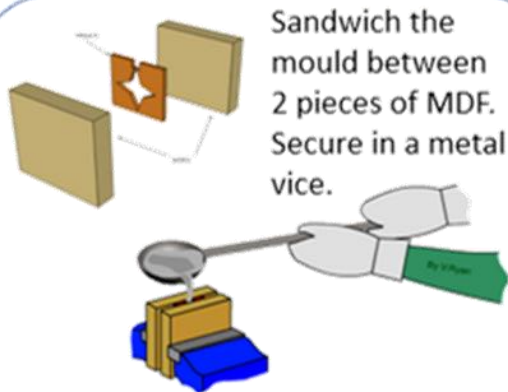
Sandwich the mould between 2 pieces of MDF. Secure in a metal vice.

Pour molten pewter into the mould

Allow pewter to cool, then remove from the mould. Cut off the excess.

Junior hack saw.

HAND VICE
PEWTER
SCRAP WOOD
TABLE

Drill a hole if required.
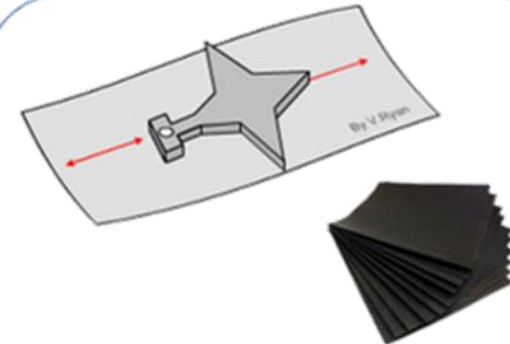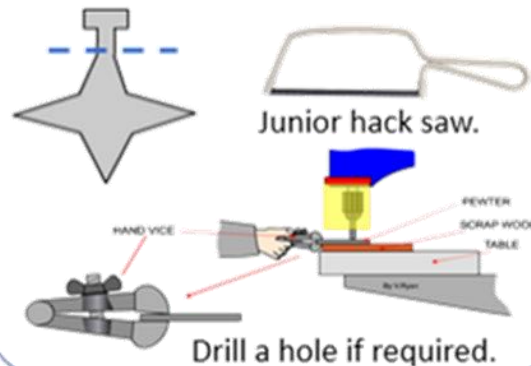
Smooth the surfaces and the edges with emery cloth & wet and dry paper.
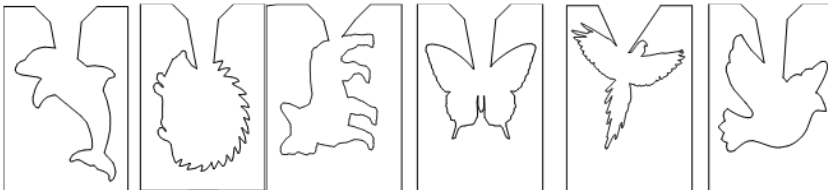
Examples of moulds

Design and Technology

12

Design Movement	Images	Influences	Designers	Features
Arts and Crafts (1850-1900)		• Traditional craft and hand skills rather than machinery	• William Morris • Charles Voysey • Richard Norman Shaw	• Traditional wood joints in furniture • Use of natural forms • Highly decorative – with birds and florals shown on textiles and wallpapers
Art Nouveau (1880-1910)		• Linear patterns of Japanese prints • French Post-impressionist art • Arts and Crafts Movement	• Alphonse Mucha • Louis Comfort Tiffany • Charles Rennie Macintosh	• Floral and decorative patterns • Elegant and graceful lines • Use of traditional materials
Art Deco (1925-1939)		• End of WW1, growth of mass production • Range of international styles coming into the public eye	• Claric Cliff • Eileen Gray • Rene Lalique • Walkter Dorwin Teague	• Stylised geometric shapes • Bold colours often paired with black, chromes and metallic • Sunburst motifs
Bauhaus (1919-1933)		• Post-WW1 idealism • Arts and crafts movement • WW1 industry methods and materials • Art Deco's geometric forms	• Walter Gropius • Marcel Breuer • Marianne Brandt • Mies Van Der Rohe	• Form follows function principle • Use of steels, chromes and leather • Modernism style-design
Streamlining (1930-1950)		• Post-WW2 lack of materials • Vehicle innovations breaking speed records • Rise of Bakelite	• Raymond Loewy • Norman Bel Geddes • Henry Dreyfuss • Walter Dorwin Teague	• Long horizontal lines and curving forms • Aesthetic influences from industrial and nautical design • Sleek appearance • Use of metals and plastics
Scandinavian Modern (1935-Present)		• Dark Scandinavian winters leading to designers maximising light and cozy features • Practical and functional designs	• Finn Juhl • Hans Wegner • Arne Jacobsen	• Clean lines • Neutral colour palette • Sleek and functional
Minimalism (1967-1978)		• Japanese traditional design and architecture • De Stijl art and design	• Donald Judd • Agnes Martin • Dan Flavin • Anne Truitt	• Repetition of simple geometric forms • Monochromatic/limited colour • Hard-edged • Little/minimal use of materials
Memphis (1981-1988)		• Rebelling against functional modernism • Art Deco • Pop Art	• Ettore Sottsass • Michele De Lucchi • Martine Bedine	• Less is Bore principles • Post-modernism design • Bright, colourful and sculptural design • Simple and Abstract forms • Use of non-traditional materials

Isometric Drawing.........

axes are drawn so that the two horizontal axes are drawn at 30 degree angles

30° 30°
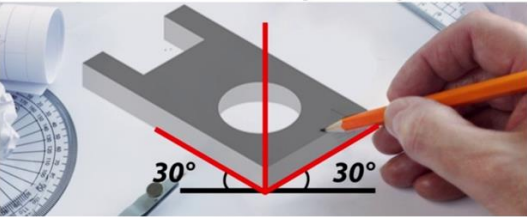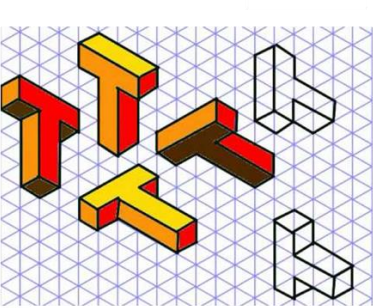
Exploded Isometric.........

Exploded views

Exploded drawings are extremely useful when explaining a design / idea. The drawing opposite is a design for an educational toy (for a young child) has been drawn with all the parts disassembled.
It is important when drawing an exploded view that all the parts line up with each other when disassembled. The vertical guidelines clearly show how the various parts are in line with each other. If an exploded drawing is constructed properly anyone looking at the drawing should be able to see how the various parts go together to form the finished design/object.
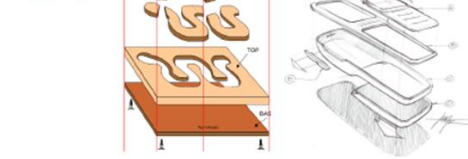
This is the box that you will manufacture.
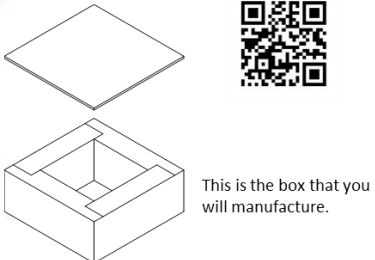
Shading an object to look like wood....

DEMO by CHAN
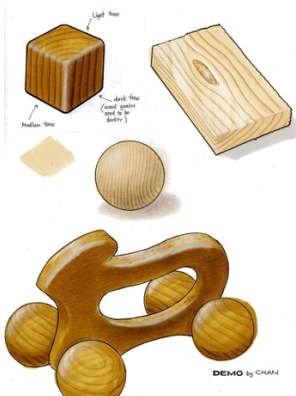
Shading an object to look like metal....

Example of a shaded pewter casting design
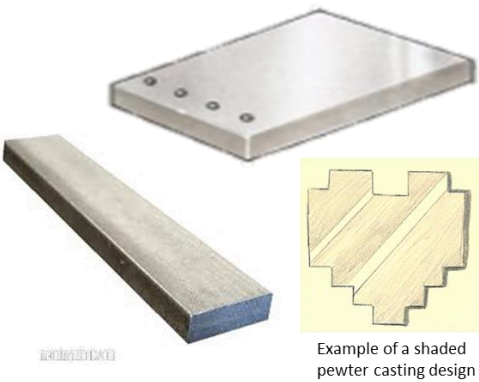
Measurements for Manufacturing the Rebate Joint (Half Lap Joint)

| 90 | 90 | 75 | 75 |

A   B   C   D

2   2   2

2mm gap should be left for the saw cut

All dimensions in mm

B
D   C   B
C
A   D
A

The completed box

Rebate Joint (Half Lap Joint)

15   15

Plan view (A&B)

7.5

Side view (A&B)

15mm 15mm 15mm

Design and Technology

14

Manufacturing Processes

CAD/CAM
(Computer Aided Design/Computer Aided Manufacture)

2D V2 DESIGN

CAD 2D Design…..

The drawing tools are all located on the right hand side of your screen. At the top of your screen here, you will also find the default 'File,' 'Open' and 'Save' buttons.

Exploded Isometric Drawing of Box

Draw the box in an isometric projection. Use the dimensions given on the drawing. Use isometric paper, a ruler and a pencil to complete the drawing accurately.

All dimensions in mm

Remember that 2D Design defaults to mm. If you want to use cm, type cm after a specific value.

Select – to select multiple items hold down SHIFT on the keyboard and click the lines you want

Draw a Circle – click to place the center, and then click to place a point on the circumference. Double click to set the radius.

Draw a Rectangle – click to place a corner, and then click to place the opposite corner.

Straight line tool – click to place the start of the line, click to place end of line. Double click to set a specific length.

Curved line tool – click to place the start of the line, click to place the first bend, second bend, etc. and right click to finish the line

Fill – select the area you want to fill. 'Are there any islands?' Click 'Yes' if you don't want to fill these in, or 'No' if you do.

Island

No Island

Dimensions – Click at the beginning of where you want to measure, then again at the end. This will give you the measurement in millimeters.

Text – click to place text. The box below appears

Enter text

Click to change font, size etc.

Deleting – click on a part you want to get rid of and use the DELETE button on the keyboard. To delete part of a shape, right click and hold on the DEL ANY icon, more delete options will appear.

Delete anything

Delete part of a line

Draw a box, and delete the contents

15

CAD 2D Design.....

Your grid tools are all located on the left hand side of your screen.

Lock to grid – Keep this on to keep your lines straight and measurements accurate

Attach – Use this tool to attach one point directly to another

Zoom in/Out

Undo – Undo or Delete your last move.
Remember: You can only undo one last step!
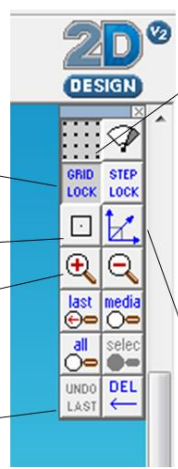
Grid – The grid dots can be present or you can turn them off. Double click and you can change the spacing of the dots. The default is 10mm. You can also change the grid from orthogonal to isometric.

Isometric
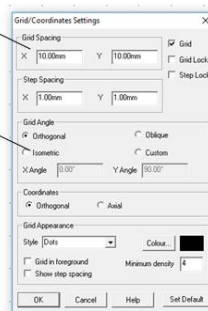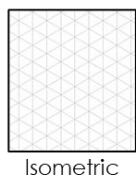
Radial Lock – Allows you to draw straight lines when not attached to the grid.

Using the ARC TOOL

Click on the Arc button. When drawing an arc tool it needs three points, a start, middle and an end.

Click once onto the drawing screen move the pointer up there will be a straight line. Click again move the pointer to the end of the arc click once and the arc will be created.

Create the drawing as shown.

Remember to use the delete part, arc, circle and group functions.

Using the ATTACH TOOL

The Attach tool allows you to connect a drawing to a point on the screen.

1. Draw a rectangle
2. Press the attach button
3. Press the line button
4. Move near the rectangle and click, the tool will attach your line to the rectangle.
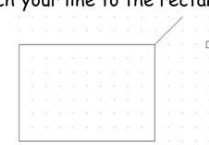
Using the GROUP TOOL

To group the lines together, select Edit from the main tool bar and click on Group. This combines all four lines into one object.
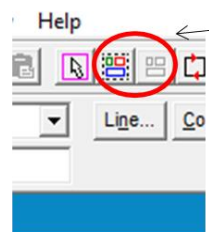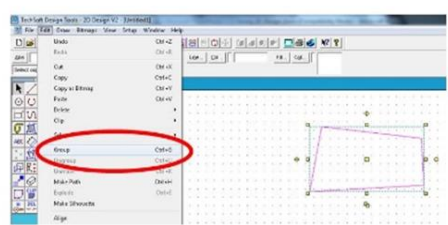
Group – Grouping an object makes it easier to move around and to resize. Use the quick group tool to group and ungroup a collection of objects.

Manufacturing Processes

CAD/CAM
(Computer Aided Design/Computer Aided Manufacture)

How to vectorise an image.....
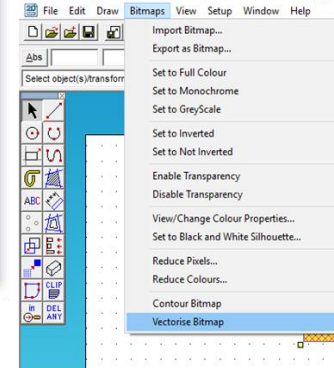
Find an image that you would like to use
To **vectorise**, follow the instructions:
- Go to Bitmaps
- Vectorise Bitmap
- A hand will appear, use this to select the image
- Set to Monochrome
- Slide the luminance bar to get the best quality image
- Then select OK
- Then select OK again
- Select the object
- Select Fill at the top (next to col)
- Select 'No Fill'
- Select OK
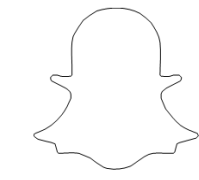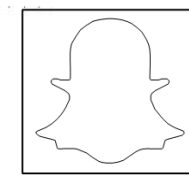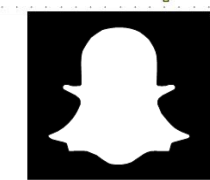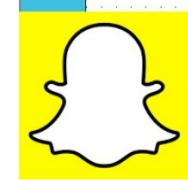
1. Bitmap Image 2. Vectorised Image 3. Outline Image with no 'fill' 4. Parts of image deleted to create a silhouette

How to delete parts of an image.....

- Select the image so it has the handles and looks pink
- Go to Edit
- Select Explode
- Then continue
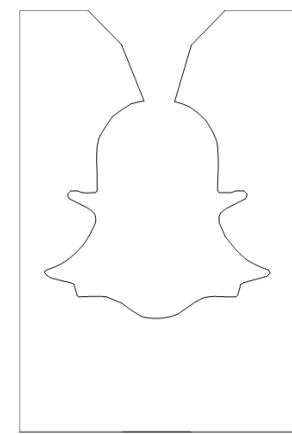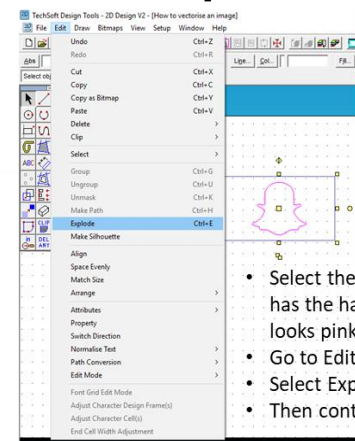
Re-size your image to fit into the template that your teacher has given you. You have successfully drawn the design for your mould.

Design and Technology

16

Romeo and Juliet Knowledge Organiser

PLOT

Prologue	The Chorus gives an overview of the key events and themes in the play. We learn of a long-standing hatred between two families in the Italian city of Verona, and this feud affects the whole community.
Act 1	Capulet's servants, Sampson and Gregory, pick a fight with Montague's servants. Benvolio tries to stop the fight and encourages Tybalt to do the same, but he refuses and the violence escalates. The Prince arrives and threatens death for the next person to fight in public. Meanwhile, Romeo is broken-hearted over Rosaline so Benvolio encourages him to go to the Capulets' masked ball. Romeo falls in love with Juliet at first sight and they kiss. Only then do they learn of each other's' identities.
Act 2	Romeo scales the wall of the Capulet orchard and watches Juliet on her balcony. She wishes he was not a Montague. He signals his presence, they talk and declare their love for one another, and make plans to marry. Friar Laurence warns Romeo not to rush but agrees to help because he thinks the marriage will end the feuding.
Act 3	Benvolio and Mercutio cross Tybalt, who is looking to duel Romeo because of his attendance at the Capulet ball. Newly-married Romeo refuses to get involved and Mercutio is drawn into the fight instead and is killed. Romeo, blinded by fury, then kills Tybalt. He hides in the Friar's cell as Escales decides to banish him. He is distraught but he and Juliet spend the night together. Meanwhile, Capulet brings the wedding between Juliet and Paris forward and when told, Juliet refuses to obey and Capulet threatens to disown her.
Act 4	Juliet seeks the Friar's help. He gives her a sleeping potion which will give the impression she is dead, and says he will write to Romeo and let him know. Juliet returns home and makes peace with her parents before taking the potion. When the Nurse cannot wake her the next morning, they fear she is dead and take her to the family tomb.
Act 5	The Friar's letter does not reach Romeo so when Balthazar, his servant, reports of Juliet's death, Romeo buys poison. Arriving at the tomb, he fights and kills Paris. He says goodbye to Juliet, drinks the poison and dies. Juliet wakes, realises what Romeo has done and stabs herself with his dagger. Following the Friar's explanation of events to Escales, the Capulets and Montagues decide to reconcile.

Cast and Characters

Romeo Montague: Heir to the Montague family. Intense, intelligent, quick witted, and loved by his friends.
Juliet Capulet: Naïve and sheltered at the beginning but develops into a woman with strength. Grounded.
Friar Laurence: A Franciscan monk and a friend to both Romeo and Juliet.
Nurse: Juliet's best friend and confidante, and in many ways is more her mother than Lady Capulet is.
Benvolio: Romeo's cousin who is less quick witted than Romeo and Mercutio, and tries to keep the peace.
Mercutio: Romeo's close friend. Wild, playful and sarcastic. Good-humoured.
Tybalt Heir to the Capulet family and Juliet's cousin. Quick to anger and consumed by issues of family honour. Hates the Montagues.
Capulet: Juliet's father: loving but controlling.
Prince Escales: Leader of Verona, concerned with keeping order between the warring families.
Paris: Prince Escales' kinsman and Juliet's suitor.

The universal gold

Punishment as consequence for sin	**An exploration of the consequences of sin** (crime and punishment). **Death as punishment for sin and subverting the Natural Order. Biblical teaching** emphasises the importance of **confession** and absolution. There is the belief that if we do not repent for our sins, we will suffer damnation.
The cyclical nature of human life.	**Osepnskey's theory of time:** When we die, we re-enter our life again from the beginning, unless we learn from our mistakes. As humans we need the the opportunity to **learn from the mistakes of the past.** The two feuding families fail to learn from their mistakes until they suffer catastrophic loss
Exploration of gender roles	**Exploration of gender roles –women as the second sex.** De Beauvoir's **feminist theories showing** women as **subservient, restricted and objectified.** Men as victims and perpetrators of toxic masculinity.

English

Historical and Social Context

Queen Elizabeth I – She was queen while Shakespeare was writing, and supported him. Elizabeth I made Protestantism the official religion of England, which angered many Catholics, and led to much conflict. Shakespeare may be referencing this in 'Romeo and Juliet', with the two warring families.

The role of women in a patriarchal society: Elizabethan England was a society controlled by men. Women were seen as the weaker sex and were expected to be ruled over by men. Women needed to be meek and mild, and most importantly, obedient to their fathers and later their husbands.

Courtly Love: a medieval tradition of love between a knight and an unattainable noblewoman common in European literature of the time. The love of the knight for his lady was regarded as an overwhelming passion and the relationship was typically one sided.

Duelling and the concept of honour: Honour was hugely important at the time, and maintaining the honour of your family name was crucial. If you were challenged to a duel and you refused, you would be deemed a coward, thus damaging your honour and the status of your family.

Arranged marriages: Marriages amongst the wealthy were arranged by parents, and were not about love. Mostly the marriages were arranged for the purposes of status and power, and improving the social standings of families.

The Catholic setting of the play: The play is set in Italy, which is a Catholic country. Religion was extremely important: marriage vows were sacred – once made, they could not be broken, and suicide was considered a sin.

The Humours – Elizabethans believed the body contained four 'humours': blood, phlegm, yellow bile and black bile. The amount you had of each determined your personality. People with too much phlegm are emotional. People with too much blood are irresponsible and gluttonous. People with too much yellow bile are violent and vengeful. People with too much black bile are depressed and self-centred.

Bubonic Plague/Black Death – a plague that killed many people. Sufferers were quarantined in their houses, with a red 'X' painted on the door, and left to die.

Key Themes

Love	In the play, love is an overpowering force that supersedes all other values, emotions, and loyalties. Through their love, Romeo and Juliet conspire to go against the forces of their entire social world. Romeo returns to visit Juliet at points, even though he is well aware of the threat of death. At times, love is presented as fickle (Mercutio's speeches, Romeo + Rosaline).
Conflict	A serious disagreement or argument. We see the conflict between the Montagues and Capulets which makes 'civil hands unclean'. This demonstrates how violence leads to the degradation of man and morality.
Family	The play centres around two key families within Verona. It calls into question the expectations put upon family duty: marriage, loyalty and love. Our 'star crossed lovers' battle with their duty to their family which comes into conflict with their love for one another.
Power	Throughout the play we see shifting power dynamics and influence. Parents over their children. Men over women. Religion through society. Society over the people. The titular characters spend the majority of the play subverting society's power dynamics in the pursuit of their love.
Death and revenge	Death lurks throughout the play, acting as a motivator for revenge and instilling a sense of duty in those who feel they have been wronged. The use of suicide (which translates as self-murder) would have been seen as truly tragic as this would bar the victims from heaven according to Christianity.
Fate and Destiny	In the first address to the audience, the Chorus states that Romeo and Juliet are 'star-cross'd' lovers, meaning that fate had intended for their paths to cross, and that fate controls their actions. A series of unfortunate accidents towards the end of the play thwart Friar Laurence's plan and eventually manifest in both Romeo and Juliet committing suicide, thus adding to the sense of fate.

Dramatic devices
Dramatic Irony – The audience knowing something that a characters doesn't.
Soliloquy – One person speaking their thoughts aloud on stage but directed at themselves.
Foreshadowing – Giving a hint or allusion to a future significant event.

The Tragic Genre
Tragic hero - The main character who has a fundamental flaw in their character which will lead to their death.
Hamartia – The fatal flaw in a character.
Catharsis – The release of intense emotions
Peripeteia – A sudden reversal of fortune.

English

YEAR 8 TAINTED LOVE POETRY

Structure and form	Definition
Stanza	A 'verse' in a poem.
Enjambment	A sentence or phrase that runs onto the next line.
Anaphora	When the first word of a stanza is the same across different stanzas.
Juxtaposition	Two ideas/ images placed together for contrasting effect.
Speaker	The narrator, or person in the poem.
Refrain	A phrase, line or group of lines which is repeated throughout a poem.
Quatrain	A 4 line stanza of poetry
Rhyming Couplet	A rhyming pair of successive lines of verse, typically of the same length
Sonnet	A poem composed of 14 lines
Dramatic Monologue	A poem in the form of a speech or narrative by an imagined person, in which the speaker inadvertently reveals aspects of their character while describing a particular situation or series of events

Word class	Definition
Verb	A **verb** is a word or set of words that shows action (*runs, is going, has been painting*); feeling (*loves, envies*); or state of being (*am, are, is, have been, was, seem*)..
Adverb	An adverb labels how, when or where something happens (and they often end in '–ly').
Noun	Nouns are names, places and things; they also signify imagined things like 'a ghost'; and ideas or concepts, such as 'love', 'guilt' or 'fate'.
Pronoun	Words used instead of a noun i.e. 'he', 'she', 'they', 'it'.
Adjective	An adjective is a describing word or phrase that adds qualities to a noun. It normally comes before a noun, or after verbs like 'am', 'is', 'was', 'appears' or 'seems'.
Preposition	Prepositions are short words and phrases that give information about place, time and manner
Intensifier	A word, especially an adverb or adjective, that has little meaning itself but is used to add emphasis to another adjective, verb, or adverb.
Minimiser	A word that is used to make another adjective, verb or adverb sound lesser.

Key Themes		Definition	Synonym
Obsession		The state of being **obsessed** with someone or something.	**Infatuated, fixated**
Jealousy		The state or feeling of being **jealous**.	**Envious, covetous**
Objectification		the action of degrading someone to the status of an object.	**Degrade**
Rejection		The act of dismissing or refusing love.	**Refuse, decline, dismiss**
Power		Having or exerting an influence over someone.	**Authority, command, supremacy**
Control		The power to influence or direct people's behaviour or a relationship	**Abuse, exploit, manipulate**
Unrequited		Love that is **one sided**, and not reciprocated.	**Unanswered, unreciprocated**

Poetic Techniques	Definition
Symbolism	When an object represents an idea that is much deeper and more significant.
Personification	Describing an inanimate object as having human feelings.
Metaphor	A descriptive technique that names a person, thing or action as something else.
Simile	A descriptive technique that compares one thing with another, usually using 'as' or 'like'.
Listing	When the writer includes several words/ phrases/ ideas, one after the other.
Repetition	When a word/ phrase is noticeably repeated throughout a sentence/ paragraph/ whole text.
Imagery	A technique in which the author appeals to the senses i.e. seeing, hearing, touching.
Conceit	A fanciful metaphor, especially a highly elaborate or extended metaphor in which an unlikely, far-fetched, or strained comparison is made between two things.
Extended Metaphor	A metaphor that is extended throughout a poem.
Semantic Field	A set of semantically or thematically linked words.
Alliteration	The occurrence of the same letter or sound at the beginning of adjacent or closely connected words
Plosive alliteration	The alliteration of 'explosive' letters: B, D, P, T
Sibilance	The alliteration of the letter S to produce a hissing sound.
Pathetic Fallacy	The use of weather imagery that reflects the mood of the poem.
Assonance	The repetition of the sound of a vowel in adjacent words.

English

Petrarch

1304-1374 – Early Renaissance
Scholar and poet of early Renaissance Italy, and one of the earliest humanists. His collections of poems addressed to Laura, an idealized beloved, contributed to the lyrical poetry of the Renaissance period. He is credited with the creation of the Petrarchan Sonnet – a 14 line poem divided into octave (first 8 lines) and sestet (final 6 lines), with a Volta (change) between.

Shakespeare
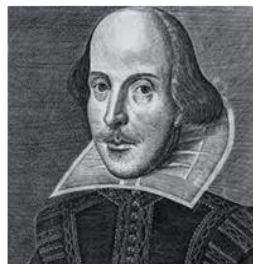
1564-1616 – Renaissance Period (Elizabethan and Jacobean)
English playwright, poet and actor. He is widely regarded as the greatest writer in the English Language. Alongside many plays, Shakespeare composed 154 sonnets and is credited with the creation of the Shakespearean Sonnet – a 14 line poem that is made up of 12 lines of verse followed by a rhyming couplet.

Behn

1640-1689 – Renaissance
After Behn's husband died and she was left in poverty (put into debtors prison because of money borrowed that she was unable to pay back) Behn vowed never to be financially dependent again and began to write in order to achieve financial security. Her contemporary reputation was founded primarily on her "scandalous" plays, which she claimed would not have been criticized for impropriety had a man written them.

Byron

1788-1825 – Romanticism
British Romantic poet and satirist whose poetry and personality captured the imagination of Europe. As a leader of the Romantic Era's poetic revolution, he led demands and calls for freedom for the people oppressed by the Industrialisation of England, particularly those of the lower echelons who were silenced by government control.

Browning

1812-1889 – The Victorian Era
Browning established himself as a celebrated poet through the form of dramatic monologue – a style of poem in the form of a speech or story-like narrative by an imagined person. In his later life he became thought of as a Victorian sage—widely regarded for his knowledge and his explorations of philosophical questions of great resonance in Victorian life.

Plath

1932-1963 – Modern Era
One of the most dynamic and admired 'confessional' poets of the 20th century who attempted to catalogue despair, violent emotion, and obsession. Oates described Plath as "one of the most celebrated and controversial of postwar poets." Intensely autobiographical, Plath's poems explore her own mental anguish, her turbulent marriage, and unresolved conflicts. She was a woman driven to madness by patriarchal control and expectations of her.

Duffy

1955 - onwards – Post-Modern Era
Duffy is best known for writing love poems that often take the form of monologues. typically "spoken in the voices of the urban disaffected, people on the margins of society who harbour resentments and grudges against the world." Duffy's poetry is considered powerfully feminist. She became Poet Laureate in 2009.

Wetzesteon

1967 - 2009 – Post-Modern Era
Celebrated as a hard-edged yet graceful poet whose poems are rich with feeling yet unsentimental. Exploring emotions such as anger, melancholy, hope, and comic throughout, they explore the sensibilities of women as they fall in and out of love.

Young

1970 - onwards – Post-Modern Era
Young is considered as a profound and elegant poet, with mastery of the song-like qualities of poetry.

His poetry has been celebrated as 'compelling' and 'authentic'.

Important periods in literary history.

English
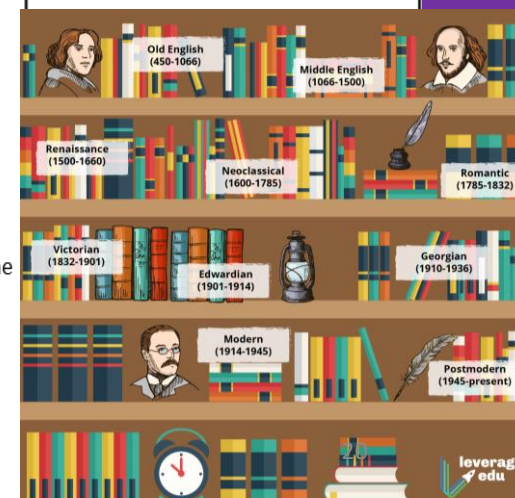
1. Food Hygiene

What is food hygiene?

Food hygiene is about preventing food poisoning. Food poisoning bacteria grow very quickly in food if it is not handled properly, cooked properly or stored properly.

There are laws which control how food manufacturers can prepare and sell food. Statistics show that you are more likely to get food poisoning from a home -made meal than you are from a bought one.

Food poisoning

The illness resulting from eating food or drinking food/drinks containing poisonous substances including bacteria, viruses, pesticides, or toxins.

Usually need millions of bacteria to cause a food poisoning illness.

The multiplication of bacteria within the food plays an important part in the disease

How bacteria grow

In ideal conditions where there is Moisture, Food and Warmth (37degrees centigrade is ideal), bacteria can double every 10 to 20 minutes. They do this by dividing in to two. This is called *Binary Fission*

In order to grow and multiply germs need:
- Time
- Moisture
- food
- Warmth
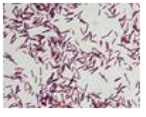
Food poisoning is more likely to affect people with lowered resistance to disease than healthy people who might show mild symptoms or none at all.

Food poisoning is more likely to affect people with lowered resistance to disease than healthy people who might show mild symptoms or none at all.

Vulnerable people

The following are particularly vulnerable to food poisoning: -
- Elderly or sick people
- Babies
- Young children
- Pregnant women

Pathogenic Bacteria	Source	Symptoms	Average Onset Time
Salmonella	Raw meat Poultry and eggs Pests and pets Human and animal intestines Dirt and refuse	Vomiting Nausea Diarrhoea Abdominal pain	12 - 36 hours after eating
Staphylococcus aureus	Human nose, throat, ears, skin Septic wounds Animals and raw milk	Vomiting Abdominal pain Low temperature	1 – 7 hours after eating
Clostridium perfingens	Raw meat and poultry Soil, dirt and refuse Raw vegetables Pests and pets Human and animal intestines	Diarrhoea Abdominal pain	12 - 18 hours after eating
Clostridium botulinum	Soil Marine sediment Raw fish and meat Animal intestines	Paralysis Breathing and swallowing difficulty Diarrhoea followed by constipation	12 – 36 hours after eating
Bacillus cereus	Dust and soil Cereal, rice and pasta	Nausea Vomiting Abdominal pain Diarrhoea	1 - 5 hours or 8 –16 hours depending on the form of the food poisoning

High risk foods

These foods tend to be high in protein and are moisture. They can include food like: raw and cooked **meat**, including **poultry** such as chicken and turkey, and foods containing these, such as **casseroles**, curries and lasagne. **dairy products**, such as custard and dairy-based desserts like custard tarts and cheesecake. eggs and egg products, such as quiche. smallgoods such as hams and salamis.

The 4C's for Good Food Safety
- Cooking
- Cleaning
- Chilling
- Cross contamination

Core temperatures:

Food Hygiene and Safety:

Before Cooking:
1. Put your apron on
2. Roll your sleeves up
3. If you have long hair tie it back with a bobble
4. Wash your hands with warm and soapy water
5. Dry your hands – moisture harbours bacteria

When Using The Cooker:
1. Turn pan handles in away from edge of cooker
2. Always turn hob off when not in use
3. Never leave food cooking on the hob unattended
4. Be careful not to let food boil dry
5. Never touch an electric hob when turned off, it may still be hot
6. Don't leave metal spoons in pans when cooking as they can become very hot.
7. Always use oven gloves when removing food from the oven

The Tidy Tick List:

You should work as a team to make the food room clean and sparkling!

✓Clean and dry dishes
✓No streaks and residue left on the glass bowls
✓Clean dry work surfaces
✓Clean sparkling hobs
✓Clean cupboard doors and drawers
✓Clean and dry sinks with no suds or residue food
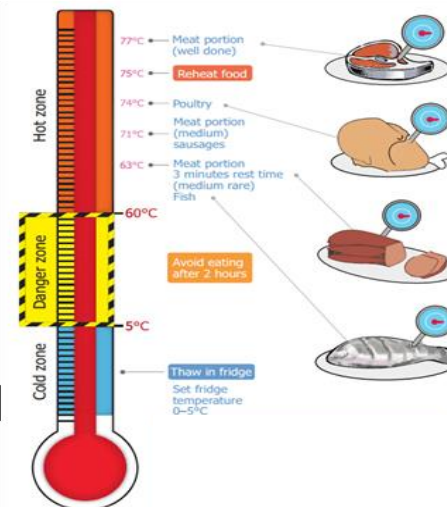
MEAT Meat is an important food commodity which provides nutrients essential for health. It is the muscle tissues of dead animals and birds are classified as meat and poultry, whereas the edible internal organs are called Offal. Game refers to wild animals

Beef		British reared breeds such as Aberdeen Angus, Longhorn and Hereford have traditionally been considered to provide the best beef in the world.
Organic Beef		Organic beef and beef from rare breeds, is the most expensive to buy as the highest farming standards will have been needed at all stages of the animal's life.
Wagu Beef		Wagu meat comes from a group of Japanese breeds whose meat is renowned for its high level of fat marbling.
Veal		Veal meat comes from the male calves of cows bred for dairy, slaughtered when they are a few months old.
Meat from sheep		Lamb is sheep under one-year-old. Hogget is a lamb older than one year. Mutton is the meat of older sheep.
Meat from Pigs	**Pork**	This is all the meat that comes from pigs. To add extra choice pork can be cured and smoked.
	Ham	This is a specific cut of the thigh part of the pig which has been cured and or salted.
	Bacon	This is produced by curing pork with salt or in brine solution. After maturing it is sold as unsmoked bacon. It can be smoked to add extra flavour to the bacon. The meat is usually darker in colour and has a distinctive flavour.
	Gammon	This is cured whole leg of pork. It is cut into slices and eaten hot as gammon steaks. It could be eaten cold as ham. Some hams may be cured and smoked such as 'honey roast'. This adds a distinctive flavour and extends the shelf-life of the product.

Other sources of meat can include:

		Poultry	
Horsemeat			
Goat			
Rabbit			
Venison			

Offal: Meat is the edible internal organs are called Offal.

Know your fish cuts

Suprême   Délice

Paupiette   Gougons

Classification	Type	Examples
White	White fish have less than 5 per cent fat (oil) in their flesh, which is why their flesh appears white. Instead, they have oil in their liver. Examples of white fish are: cod, haddock, halibut, whiting, coley, plaice and Dover sole. White fish are round (e.g. cod, haddock and whiting) or flat (e.g. plaice and sole).	
Oily	have between 10 and 20 per cent fat (oil) in their flesh, which makes their flesh quite dark. Examples of oily fish are mackerel, herring, pilchard, sprat, sardines and salmon.	
Shell	**Shell fish** are found in the sea. Shellfish are divided into: **Crustaceans** – these have a shell and legs. Examples include prawns, scampi, lobster, and crab. **Molluscs** – these have a shell but no legs and they often fix themselves to rocks. Examples include cockles, mussels, winkles and oysters. **Squid** and **Octopus** - are also classed as molluscs—even though their shell is inside! Fish produced in fresh water include trout and carp	

Ways of preserving fish. Salting - If enough salt is used, then the fish may keep for up to a year.
Smoking - Fish can be smoked using different techniques. Hot smoked fish are moist, lightly salted and fully cooked. They can be eaten without further cooking. Cold smoked fish are generally saltier in flavour and have less moisture. Cold smoking does not cook the fish. It merely adds a smoked flavour. Smoked fish and salted fish such as kippers and bloaters should have a firm flesh, shiny skin and a good 'smoky' smell. **Pickling -** Pickling fish was originally conceived as a way to preserve it. It is a common technique in Scandinavia. Pickling is now used widely to add flavour and sharpness. **Canning -** Produces a moist, flaky product and makes the bones edible. Oily fish and shellfish such as tuna, salmon, and prawns can be canned in brine, tomato sauce or oil which adds flavour to the fish.
Drying - Fish are laid out to be dried.
Freezing - Packaged in blocks or freeze in water brushing glaze on top.

Cuts of fish:
Large fish (e.g. cod, coley, haddock) are cut into fillets, steaks or cutlets.
Small and medium fish (e.g. herrings, mackerel, rainbow trout) are usually sold whole and can be filleted by removing the backbone, tail, head and fins.
Very small fish (e.g. sprats and whitebait) can be fried and eaten whole.

Food Technology

4. Commodities Eggs

Eggs are an important food commodity which provides nutrients essential for health. Eggs provide a variety of different textures, colours and flavours to dishes. Eggs can be used in a variety of different ways.

Nutrients in an egg

- Air Cell
- Chalaza
- Germinal Disc
- Yolk
- Vitelline (Yolk) Membrane
- Thick Albumen
- Thin or Fluid Albumen
- Shell Membranes
- Chalaza
- Shell

- Shell 10%
- White 60%
- Yolk 30%

Protein 9 g
Fat 0 g
Water 88.3 g
Also B vitamins

Protein 16.1 g   Fat 30.5 g
Water 51 g
Also vitamin A and iron

The structure of a hen's egg

The shell: consists of an outer cuticle (a transparent, protective coating, a true shell and inner membranes. The shell is porous (pores are tiny holes), and therefore allows the developing chick to obtain oxygen. At one end of the egg, the membranes separate into an air space, to supply the chick with oxygen.

The air space: increases in size as an egg gets older, because water is lost from the egg and air is drawn in. The fresher the egg, the smaller the air space. This is why fresh eggs sink in water and rotten eggs float.

The yolk: full of goodness (vitamins A, D, E & K) and has a higher concentration of protein than the white.

The white: contains riboflavin and other B vitamins and a small trace of fat

The anchors/chalazae: white strands attached to the thick albumen which anchor the yolk in the middle of the egg.

Organic	These are more expensive as hens have to have access to organic land and eat an organic diet.
Free Range:	The hens are reared in large barns with daytime access to outside runs. There are no feeding guidelines (by products and GM foods to increase productivity and profit margins)
Barn:	The hens are reared in barns with no outside access. They are provided with perches, platforms, nest boxes and litter areas. Areas can be quite crowded with up to 16,000 hens in a barn—depends on the keeper.
Caged;	This makes up approximately 78% of the market. Hens are crammed into a cage so small they can't stretch their wings. The space they have is about the size of an A4 (this page) piece of paper. They cannot follow their natural behavior patterns. Their bodies suffer through lack of exercise. Birds can lay dead for days before they are taken out of the cage. Debeaking, brittle bones, tumors and pecking are common.

Functions of eggs

All about eggs Information station 3

Uses/functions of eggs in cooking

Garnish: Eggs can be used to add garnish (decoration) to foods either poached or boiled and sliced. Example: salad

Thickening: Egg white coagulates (sets) at 60°C, the yolk sets at 70°C, so when these temperatures are reached they begin to set and thicken the mixture. Do not allow the egg exceed these temperatures, or the mixture will set fully and curdle (scramble) Example: thickens custard, soups and sauces

Emulsification: Oil and water mixed together form an emulsion, but this will only last a short while then separate. The lecithin in egg yolks keeps the emulsion stable Example: mayonnaise

Coagulation/setting: This is when the egg sets the mixture once it has exceeded 70°C. Example: quiche filling

Binding: The egg sets when cooked sticking other ingredients together Example: fishcakes, beef burgers

Enriching: Adding richness and extra nutrition to foods Example: rich short crust pastry

Trapping air/Aerating: The protein in the egg white stretches when beaten and traps air. Example: sponge cake and meringues

Coating: Foods can be brushed with egg then dipped in breadcrumbs. During cooking the egg coagulates (sets) and holds the product together. Example: fish cakes

Glazing: Before cooking foods can be brushed with beaten egg. During baking the egg glaze goes golden brown. Example: pasties, sausage rolls

Sizing Eggs

Size	Weight
SMALL	53g + under
MEDIUM	53-63g
LARGE	63-73g
EXTRA LARGE	73g+ over

How to grade Eggs

All eggs sold at grocery stores must meet strict standards. Only those of high quality reach the consumer. Eggs must be checked for interior quality by candling, a process where eggs are passed over a strong light to show the shell and interior.

Grade A: Thick white Round, well centered yolk Small air cell (less than 5mm deep)Clean, un-cracked shell with normal shape

Grade B: Mostly used for commercial baking or go to hospitals, restaurants, etc. very few are sold at retail stores. Yolk is slightly flattened; white is thinner Shell is un-cracked and may have a rough texture; and/or be slightly soiled and stained.

Grade C: The lowest egg grade, these are used in the production of processed egg products only. They are not sold in retail stores Yolk is flattened and may be oblong in shape; white is thin and watery. Shell may be cracked and/or stained

Storing eggs

Eggs should be stored in the fridge or a cool place away from strong smelling foods. Eggs should be stored blunt end upwards. They should be removed an hour or so before use, because cold eggs do not whisk well.

Eggs stay in good condition if stored correctly for two to three weeks. Eggs cannot be frozen whole but the whites and yolks can be frozen separately in containers. Always use eggs by the best before date. Eggs can be preserved by pickling.

Labelling Eggs

Farming Method
0 = Organic
1 = Free Range
2 = Barn
3 = Cage

Country of origin
Eg: UK

Optional Information Lion Mark British eggs from hens vaccinated against salmonella and produced to a strict code of practice

0UK12345
BB day/month

Form ID
A specific code denoting the actual farm where the eggs were produced

Best Before Date

Cooking methods for Meat, Fish & Eggs

boiling, frying, steaming, spit roasting, sauteing, poaching, barbeque, pot roasting, roasting, grilling, chargrill

Storing Meat, Fish & Eggs

READY TO EAT FOOD Such as dairy products, yoghurt & cream

READY TO EAT FOOD Such as cream cakes, butter, cooked meats, leftovers & other packaged food.

RAW MEAT, POULTRY & FISH Always cover & keep in sealed containers.

SALAD, FRUIT & VEGETABLES Keep ready to eat fruit and vegetables in sealed bags or containers, always wash before use.

23

EU Law

Under EU law, all meat and poultry for human consumption has to show traceability. Under the law, traceability means the ability to track any food, feed, food-producing animal or substance that will be used for consumption through all stages of production, processing and distribution.

Red Tractor

The Red Tractor logo gives information on where the food has been farmed, processed and packed. Food given to animals on farms displaying the Red Tractor logo is safe from them to eat with no risk of contamination to the meat or milk produced. The animals' health and welfare is regularly checked.
Farmers under this scheme must also use responsible farming methods not to pollute land and minimise the impact of their farming methods on wildlife, fauna and flowers.

RSPCA Assured

Previously *Freedom Food*, this is the RSPCA's ethical food label dedicated to animal welfare. The RSPCA Assured label makes it easy to recognise products from animals that have had a better life. It is found on the packaging of meat and dairy products which have met animal welfare

Animal Welfare

There are symbols on packaging to show that meat and poultry have met welfare standards. Animal welfare refers to the well-being of animals and covers areas such as the animals' access to fresh water and a diet to maintain full health. It also gives assurance that animals are reared free of any discomfort, pain, injury or disease, and are provided with adequate shelter and a comfortable resting area.

5. Commodities – Milk

Milk is an important food commodity which provides nutrients essential for health. Milk is considered nature's most perfect food. A variety of different foods can be made from milk.
Milk is a pale liquid produced by the mammary glands of mammals. It is the primary source of nutrition for infant mammals (including humans who breastfeed)

Where does Milk come from?
Milk can come from, a cow, a goat, a sheep and even a horse. Milk can also be made from soya beans, rice and wheat.

How milk is used:
As a drink on its own or flavoured – for its nutritional content.
Added to cereal to improve the nutritional content, it changes the texture
As an essential ingredient in batter, sauces and custards—it allows Gelatinisation., combining with egg to coagulate into a soft product.
In baked products such as cakes, biscuits and bread, providing moisture to help them rise and produces a soft texture as it stops starch and fat clumping together.
The fat is separated from the rest of the milk to make cream
When acid is added it curdles and becomes solid or semi-solid, making cheese
Cream is churned (moved around quickly—beaten) to make butter
Yoghurt is fermented milk. A bacteria culture is added. This breaks down the protein and makes it coagulate

- 0.7% minerals
- 0.8% vitamins
- 3.5% protein
- 3.5–5% fat
- 4.8% carbohydrate
- 85.2–86.4% water

Types of Milk	Description
Whole milk	Milk with nothing added or removed. Fat content: 3.9%.
Semi-skimmed milk	The most popular type of milk in the UK. Fat content: 1.5%
Skimmed milk	Milk that has had most of the fat removed. Fat content: 0–0.5% (average 0.1%)
1% fat milk	Offered to consumers who like the taste of semi-skimmed, but want milk with a lower fat content.
Organic milk	Milk from cows that have been grazed on pasture that has no chemical fertilisers, pesticides or agrochemicals used on it.
UHT milk	Milk that has been heat treated to give it a longer shelf life. Once opened it must be treated in the same way as fresh milk.
Lacto-free milk	Milk that has had the milk sugar (lactose) removed, making it suitable for those who have an intolerance to lactose.
Soya milk	Made from the liquid of cooked soya beans. It is suitable for vegans and substitute milk for those who are allergic to dairy food.
Goat's milk	Another substitute milk for people allergic to cow's milk.
Evaporated milk	A concentrated, sterilised milk product. It has a concentration twice that of standard milk. Evaporated milk is heat treated and then evaporated under reduced pressure, at temperatures between 60ºC and 65ºC The evaporated milk is poured into cans, which are then sealed. At this point the cans are moved to a steriliser where they are held for 10 minutes.
Condensed milk	Concentrated in the same way as evaporated milk, but with the addition of sugar.
Dried milk powder	Produced by evaporating the water content of milk using heat.
Almond and coconut milk	An alternative for vegans or people with allergies

6. Commodities – Dairy Produce

1/3 water
1/3 Protein
1/3 Fat
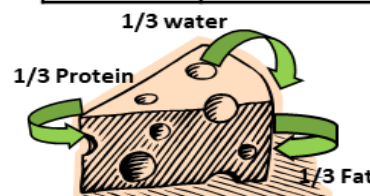
Cheese can be described as a solid or semi-solid form of milk. It is sometimes referred to as a fermented dairy food. It is made from cows', ewes', goats' or buffalo milk.

Ways to preserve milk - Heat treatments **Pasteurised** A mild heat treatment. It only kills pathogenic bacteria to make it safe to drink. It extends the shelf life. It needs to be kept chilled. There is no change in flavour or nutritional value. The fat (cream) rises to the top.

UHT or Long life Milk is sterilised—heated to 100°C for 20 minutes to kill all bacteria. It also destroys the B vitamins. Milk is homogenised. Milk is packaged using aseptic packaging.

Evaporated Milk Evaporated milk is a concentrated, sterilised milk product. It has a concentration twice that of standard milk. The process of producing evaporated milk involves standardising, heat treating and evaporating the milk under reduced pressure, at temperatures between 60ºC and 65ºC. It is then homogenised and cooled. The evaporated milk is poured into cans, which are then sealed. At this point the cans are moved to a steriliser where they are held for 10 minutes. A cooling stage follows and the cans are then labelled and packed.

Condensed Milk Condensed milk is concentrated in the same way as evaporated milk, but with the addition of sugar. It is not sterilised but is preserved by the high concentration of sugar. It can be made from whole milk, semi skimmed or skimmed milk. The heat treatment used consists of holding standardised milk at a temperature of 110- 115ºC for one to two minutes. The milk is then homogenised, the sugar added and the sweetened milk is then evaporated at low temperatures (between 55-60ºC). The concentration of the condensed milk is now up to 3 times that of the original milk. The milk is then cooled rapidly to 30ºC and packaged. Sweetened condensed milk is commonly used in the sugar

Dried Milk Powder Milk powder is produced by evaporating the water from the milk using heat. The milk is homogenised, heat treated. Skimmed milk powder can be mixed easily with water; however whole milk isn't easily reconstituted due to its

Grade boost

Learn these key words and use them in your written work as this will show you understand the question:
Curds
Mould spores
Whey

How is CHEESE made?

1. A starter culture is added to pasteurised milk to ferment the lactose into lactic acid.
2. The lactic acid is what forms the flavour.
3. Rennet is then added to coagulate the milk and form curds and whey.
4. The whey is drained.
5. The curds are cut to release more whey.
6. The curds are put under pressure, removing even more whey, to form the cheese.
7. The more whey that is removed the 'harder' the cheese becomes.
8. The cheese is wrapped and left to mature for up to 24 months.

The final cheese made depends on the type of milk used, the makers' recipes, how much whey is removed and additional ingredients added, for example salt, herbs, colourings, fruit and mould.

How is **CREAM** produced?

The production process involves separation of the fat from the milk which is done through centrifugation. Centrifugation involves spinning the milk at high speed; the force of this process causes the milk fat globules to separate from the watery liquid to produce **single cream**. This process is continued to produce **double cream**. All cream is then pasteurised to destroy any harmful bacteria.

Clotted cream
- Fresh cows' milk is placed in a shallow pan and left for 6–14 hours
- Cream floats to the surface of the milk
- This mixture is then heated over a water bath at a temperature of 80–90°C for 40–50 minutes.
- Cooled for 24 hours and 'clots' of cream with a firm yellow crust are formed. This cream is removed, 'potted' up and sold as clotted cream.
- The liquid left over is skimmed milk.
- Clotted cream has a rich, buttery flavour, and thick, creamy consistency.

Whipping cream
- Made by mixing cream with air.
- Volume doubles.
- Air bubbles are captured in fat droplets.

Long-Life cream
- Produced from UHT milk.
- High temperatures during UHT processing give a slightly caramelised flavour.
- Unopened cream can be stored at ambient temperatures for several months.
- Once opened must be stored in a refrigerator.

Soured cream
- Cream with a bacterial culture added.
- Produces lactic acid.
- This sours and thickens the product.

Crème fraîche
- Made by adding bacterial culture to cream.
- A soured product.

Uses of Cheese
Cheese can:
- provide flavour (e.g. when making a white sauce adding cheese gives improved flavour)
- be used to make both sweet and savory dishes.
- provide colour (e.g. when sprinkled on top of dishes and grilled or baked it will turn an attractive brown colour)
- provide texture (e.g. when melted in can provide a soft, moist and stringy texture)
- increase the nutritional value of a dish

Soft cheeses have the most moisture
- Some soft cheeses are left to ripen such as Brie and Camembert
- Cottage cheese has a bacteria added to it that makes it clump together in lumps
- Ricotta is a soft whey cheese - low in fat
- Moulds grow on the outside and help to soften the curds inside

Semi- hard cheeses are 'pressed' cheeses - but not pressed as much as hard cheeses! are examples
- Lancashire, Wensleydale, Caerphilly, Edam, Gouda Port Salut, St Paulin
- Feta cheese is preserved in a brine solution
- Mozzarella is a cheese that is cooked during its process. This gives it its stringy texture

Hard cheeses have the least moisture. Examples are: Cheddar, Leicester, Double Gloucester, Cheshire Gruyère, Emmental, Parmesan, Parmesan is the hardest cheese of all!

Butter is made from the fat found in the cream.

How Butter is Made

Cow eats grass → Cow's body turns grass into milk → Human/ machine milks cow, from udder to pail → Human/machine churns creamy milk into butter, with buttermilk as a side-product → Milk may be pasteurized in sterile facility

Photo by D. Morgan
Numbered photos from Wikimedia Commons

Whole grain wheat as harvested

Whole grain wheat

Refined wheat flour

Whole wheat flour

How should cream be stored:
All fresh cream must be stored in a refrigerator at 5'C. sterilised/long life/ UHT cream has a long shelf life and can be stored, unopened, in a kitchen cupboard. However once opened this cream must be treated the same as fresh cream.

Cream is derived from the fat found in all fresh milk. Cream is the concentrated fat, which has been skimmed from the top of milk.
Types of cream: Single cream, Double cream, Whipping cream, Clotted cream, Ultra heat treated (UHT) cream. Cream is used to add a creamy texture and flavour to dishes. The correct cream must be used for specific tasks because different types of cream have different properties – for instance single and clotted creams cannot be whisked for pipping whereas whipping and double cream will aerate when whisked.

Yoghurt is made from milk. It is made by adding harmless edible bacteria to the milk, which causes it to ferment. This means the carbohydrate (sugar) in the milk, which is lactose, is converted into lactic acid by the bacteria. The lactic acid will set the milk's protein, which will thicken it. The lactic acid will also give the yoghurt its characteristically tangy flavour. **Different yoghurts** can be made from different types of milk. Some yoghurt will include additional ingredients such as sugar, which is used to sweeten it (e.g. fruit and other flavours such as honey or vanilla).**Examples of types of yoghurt: Set yoghurt:** is set in the pot in which it is sold. Has a firmer texture than other yoghurts. **Live yoghurt:** this has been fermented with live culture bacteria that are still living. **Greek (strained) yoghurt:** made from cows' or ewes' milk. It can be quite a thick yoghurt and is higher in fat. **Nutritive value of yoghurt:**Yoghurt will provide the following nutrients: Protein,Fat Calcium ,Carbohydrates, Vitamins, Water **Storage of yoghurt -** Store in the refrigerator between 1 and 5°C. Use before the use-by date.

Bread is a staple food in much of the world. It is made from strong flour, yeast, salt and water. Fat is often added to extend the shelf life of bread. Sugar is added for sweetness and to add colour.

25

6. Commodities – Dairy Produce

A 'wholegrain' is made up of three elements:
- a fibre-rich outer layer – the bran
- a nutrient-packed inner part – the germ
- a central starchy part – the endosperm.

Whole Grain VS. **"White" Grain**

Bran
The fiber-rich outer layer that protects the seed and contains B vitamins and trace minerals.

Endosperm
The middle layer that contains carbohydrates along with proteins.

Germ
The small nutrient-rich core that contains antioxidants, including vitamin E, B vitamins and healthy fats.

How cereals are processed:

Processing the flour after milling

After the milling process, different grades of flour are produced by sifting, separating and regrinding the flour several times. These grades are combined as needed to produce different types of flour.

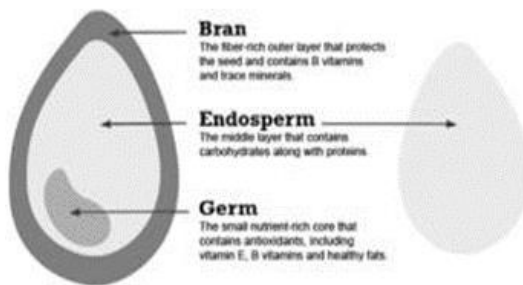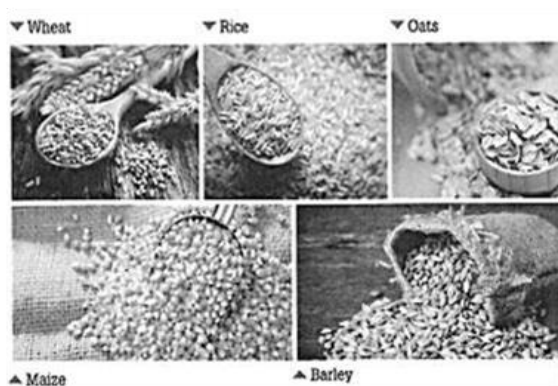Small amounts of bleaching agents (to make the flour white) and oxidizing agents (to enhance the baking quality of the flour) are usually added to the flour after milling.

Nutrients calcium, iron and B group vitamins are added to. This is called fortification. Baking powder will be added to make self-raising flour. **Flour:** Flour comes from different types of cereals, e.g. rye and wheat. **Wheat flour** is one of the main flours produced. There are different strengths of wheat flour depending on its uses: **Strong flour** is used in bread making and comes from winter wheat, which is a hard **Wholemeal flour** is made from the whole wheat grain, nothing is added or taken away. It is referred to as having 100% extraction rate. It is a good source of dietary fibre. **Brown flour** usually contains about 85% of the original grain. Some bran and germ have been removed. **White flour** usually contains around 70-72% of the wheat grain. Most of the bran and wheat germ have been removed during the milling process. **Granary flour** is made by adding malted wheat (which has been toasted and flaked), to any type of flour but usually it is added to wholemeal or brown flour. **Stoneground flour** is wholemeal flour ground in a traditional way between two stones. **Organic flour** is made from grain that has

Cereals provide a valuable source on energy in the diet, as well as other nutrients if the wholegrain is used. These include: Fibre, Protein, Carbohydrates, VitaminE, B vitamins, Fat, Iron.

▼ Wheat ▼ Rice ▼ Oats
▲ Maize ▲ Barley

Tagliatelle, Cannelloni, Cellentani, Anelli pasta, Spaghetti, Gnocchi, Gemelli, Macaroni, Penne, Risoni, Rotelle, Rigatoni, Vermicelli, Lasagna, Pappardelle, Fusilli, Tortellini, Bucatini, Linguine, Fettuccine, Ricciolini, Farfalle, Conchiglie (Shells), Ravioli, Pipe rigate (elbow shells), Trenne

Pasta is made from strong wheat known as durum wheat. This type of wheat contains more protein than common wheat. During the milling process the wheat produces semolina. This is the coarsest grade of the starchy endosperm. To make pasta, water is added to form a dough, which can be shaped or extruded (forced though an opening in a shaped plate and then cut to a specific size) to produce the type of pasta required. Other ingredients that can be added during the making of the pasta dough include eggs, oil, salt and various flavourings. Different shapes, sizes and styles of pasta are widely available to buy in shops. Various colours of pasta re also sold: Green pasta is made using spinach, which provides the colour as well as some flavour. Red pasta is made using tomato paste. Squid ink pasta or black pasta is dark grey, almost black in colour and is made using, as the name suggests, squid ink. This can sometimes give the pasta a mild seafood flavour. Dried pasta is popular due to its long shelf life and versatility. It can be combined with many other ingredients. Fresh pasta must be stored in a refrigerator. Fresh and homemade pasta can be frozen Homemade pasta must be allowed to dry and then stored in an airtight container in the refrigerator. Cooked pasta should be stored in an airtight container in the refrigerator. Rinsing with cold water after cooking will stop it sticking together.

Rice is one of the most popular staple foods eaten by the world's population.
- It is a very versatile commodity because it can be used to make both sweet and savour dishes
- Rice is served as part of a meal to provide bulk and a feeling of fullness.
- It is quick to cook
- It is a good store cupboard ingredient as it has a long shelf life and is easy to store.
- Rice can be quite bland in flavour. This can be improved by cooking it with flavoursome ingredients such as garlic and herbs, or by cooking the rice in stock instead of water.

Varieties of rice:

There are many different varieties of rice available in supermarkets and it is sold in a variety of different forms, for example boil-in-the-bag, easy cook and pre-cooked. Rice can be short grain or long grain and most types are available as brown or white rice.

Unit 5- Mon voyage extraordinaire!

Normalement, pendant les vacances...	normally, during the holidays...
	I go to a holiday camp
je vais en colo	camp
je nage dans la piscine	I swim in the pool
je fais du sport	I do sport
je mange des hamburger-frites	I eat burgers and chips
Mais l'année dernière...	but last year...
j'ai gagné un concours	I won a competition

Point de départ

J'habite...	I live
en Angleterre / Écosse / Irlande (du Nord).	in England / Scotland / (Northern) Ireland
au pays de Galles	in Wales
J'ai / On a...	I have / We have
une semaine /deux semaines de vacances	a week / two weeks of holiday
en janvier / février (etc.).	in January / February (etc.).
à Noël / à Pâques.	at Christmas / at Easter
Je suis / Nous sommes en vacances...	I am / We are on holiday...
au bord de la mer.	at the seaside
à la montagne	in the mountains
à la campagne	in the countryside
en colo (en colonie de vacances).	at a holiday camp
chez mes grands-parents.	at my grandparents' home
C'est...	It is...
assez / très / trop / un peu / complètement	quite / very / too / a bit / completely
nul / sympa	rubbish / nice
ennuyeux / intéressant	boring / interesting
triste / marrant	sad / funny

Unit 5 - Mon voyage extraordinaire!

j'ai nagé dans la mer	I swam in the sea
J'ai fait de la voile	I went sailing
J'ai vu des dauphins	I saw dolphins

To revise this topic

parc Astérix PARIS

Unit 1- Tu as passé de bonnes vacances?

Pendant les vacances...	During the holidays...
J'ai joué au tennis	I played tennis
J'ai mangé des glaces	I ate ice creams
J'ai retrouvé mes amis	I met my friends
J'ai écouté de la musique	I listened to music
J'ai acheté des baskets	I bought some trainers
J'ai regardé des clips vidéo	I watched video clips
J'ai nagé dans la mer	I swam in the sea
J'ai traîné à la maison	I hung around the house

Unit 2- Tu es allé(e) où?

Tu es allé (e) où en vacances?	Where did you go on holiday?
Tu es allé(e) en vacances avec qui?	Who did you go on holiday with?
Je suis allé(e) en vacances avec...	I went on holiday with...
ma famille / mes parents / mes copains	my family / my parents / my friends
On est allé(e)s / Nous sommes allé(e)s...	We went...
en Espagne / France / Grèce	to Spain / France / Greece
au Maroc / aux États-Unis	to Morocco / to the USA

Unit 2- Tu es allé(e) où?

Tu as voyagé comment?	How did you travel?
J'ai voyagé...	I travelled
On a / Nous avons voyagé...	We travelled...
en avion / en bateau	by plane / by boat
en bus / en car	by bus / by coach
en train / en voiture	by train / by car

Unit 2- Qu'est-ce que tu as fait?

Qu'est-ce que tu as fait pendant les vacances?	What did you do during the holidays?
J'ai visité un parc d'attractions	I visited a theme park
J'ai bu un coca au café	I drank a cola in the café
J'ai pris beaucoup de photos	I took lots of photos
J'ai vu un spectacle	I saw a show
J'ai fait une balade en bateau	I went on a boat ride
j'ai vu mes personnages préférés	I saw my favourite characters
J'ai fait tous les manèges	I went on all the rides
d'abord	first
ensuite / puis	then / next
après	after
finalement	finally
C'était...	it was
fantastique/génial/super!	fantastic/great/super
amusant/marrant/sympa	fun/funny/nice
intéressant/ennuyeux/nul	interesting/boring/rubbish
Ce n'était pas mal	it wasn't bad

Unit 4- Quel désastre!

J'ai oublié mon passeport	I forgot my passport
J'ai cassé mon portable	I broke my phone
J'ai perdu mon porte-monnaie	I lost my purse
J'ai choisi le poisson	I chose the fish
J'ai beaucoup vomi	I vomited a lot
Je suis tombé sur la plage	I fell over on the beach
Je suis resté(e) au lit	I stayed in bed
	we missed
On a raté l'avion	the plane
On est arrivé(e)s en retard	we arrived late
en train / en voiture	by train / by car
Je n'ai pas pris de photos	I didn't take any photos
Je ne suis pas sorti (e)	I didn't go out
Quel désastre!	What a disaster!
Quelle horreur!	How horrible!

27

Mon voyage extraordinaire

Normalment - normally Pendent les vacances – On holiday à Noël – At Christmas à Pâques – At Easter	Je vais en France – I go to France Je vais en colo – I go to a holiday camp Je nage dans la piscine – I swim in the pool je mange dans un restaurant – i eat in a restaurant je fais du sport – I do sport	à la campagne – in the countryside au bord de la mer – at the coast avec ma famille / mes amis with my family / friends	et c'est and it is	nul – rubbish sympa - good cool – cool ennuyeux - boring super – great

Point de départ

J'habite I live	en Angleterre - in England au Pays de Galles – in Wales	et j'ai – and I have	une semaine de vaccances– 1 week holiday deux semaines de vaccances – 2 weeks holiday	en janvier /février – in January /Feb à Noël /Pâques – at Christmas / Easter

Tu as passé des bonnes vaccances?

Pendent les vacances During the holidays	J'ai joué au tennis — I played tennis J'ai mangé des glaces — I ate ice creams J'ai retrouvé mes amis — I met my friends J'ai écouté de la musique — I listened to music J'ai acheté des baskets — I bought some trainers J'ai regardé des clips vidéo — I watched video clips	et	j'ai nagé dans la mer — I swam in the sea J'ai fait de la voile — I went sailing J'ai vu des dauphins — I saw dolphins

Tu est allé(e) où?

Je suis allé(e) I went Nous sommes allé(e)s We went	en Espagne /France/ Grèce au Maroc aux États-Unis	et	On a / Nous avons voyagé… en avion / en bateau en bus / en car en train / en voiture	We travelled… by plane / by boat by bus / by coach by train / by car	et	J'ai bu un coca au café — I drank a cola in the café J'ai pris beaucoup de photos — I took lots of photos J'ai vu un spectacle — I saw a show J'ai fait une balade en bateau — I went on a boat ride

Quel désastre!

J'ai oublié mon passeport — I forgot my passport J'ai cassé mon portable — I broke my phone J'ai perdu mon porte-monnaie — I lost my purse	et	Je suis tombé sur la plage — I fell over on the beach Je suis resté(e) au lit — I stayed in bed	et aussi	On est arrivé(e)s en retard — we arrived late en train / en voiture — by train / by car	Quel désastre! — What a disaster! Quelle horreur! — How horrible!

28

French

Point de départ

Noël	Christmas
Pâques	Easter
le 14 juillet	Bastille Day
le Nouvel An	New Year's Day
la Toussaint	All Saints' Day
la Saint-Valentin	Valentine's Day
l'Aïd	Eid
mon anniversaire	my birthday
Quelle est ta fête préférée?	What's your favourite festival?
j'adore ...	I love ...
j'aime (beaucoup) ...	I (really) like ...
je préfère ...	I prefer ...
je n'aime pas tellement ...	I don't particularly like ...
je n'aime pas ...	I don't like ...
je n'aime pas du tout ...	I really don't like ...
Je déteste ...	I hate ...
manger des œufs en chocolat.	eating chocolate eggs.
danser et chanter.	dancing and singing.
choisir des cadeaux.	choosing presents.
rendre visite à mes cousins.	visiting my cousins.
faire une soirée pyjama.	having a sleepover.
C'est ...	It is ...
marrant / ennuyeux.	fun, funny / boring.
bête.	silly.
trop militaire.	too militaristic.
trop commercial.	too commercialised.

Unité 1 Quelle est ta fête préférée?

je porte un masque	I wear a mask
je retrouve mes copains	I meet my friends
je regarde la parade	I watch the parade
je finis mes devoirs	I finish my homework
je choisis des vêtements ...	I choose ... clothes
j'attends la fête avec impatience	I am looking forward to the festival
je rends visite à ...	I visit ...
j'entends la musique	I hear (the) music
les spectateurs	spectators
chaque année	every year
le matin	(in) the morning
l'après-midi	(in) the afternoon
le soir	(in) the evening

une parade / un défilé	a parade
un groupe de gens / filles / garçons / musiciens / d'enfants	a group of people / girls / boys / musicians / children
Ils/Elles sont ...	They are ...
dans la rue. / en ville.	in the street. / in town.
Ils/Elles ...	They ...
marchent / applaudissent	are walking / clapping
dansent	dancing
jouent d'un instrument.	playing an instrument.
Ils/Elles portent des vêtements ... traditionnels / colorés / bizarres / incroyables	They are wearing ... clothes. traditional / colourful / strange / amazing
Ils/Elles portent des drapeaux.	They are holding flags.

Unité 5 Bonne année!

Quelles sont tes bonnes résolutions pour l'année prochaine?	What are your new year's resolutions?
Je joue sur mon portable.	I play on my phone.
Je finis mes devoirs à la récré.	I finish my homework at break.
Je n'aide pas mes parents.	I don't help my parents.
Je fais la grasse matinée.	I have a lie-in.
Je ne suis pas sympa avec ...	I am not kind to ...
Je vais ...	I am going ...
aller au marché.	to go to the market.
aider dans le jardin.	to help in the garden.
être patient(e) avec ...	to be patient with ...
faire du sport.	to do sport.
laisser mon smartphone dans ma chambre	to leave my smartphone in my room.
	to finish my homework in
finir mes devoirs le soir.	the evening.

Unité 3 Miam-miam, c'est bon!

une salade niçoise	a tuna and olive salad
une tarte flambée	a pizza-like tart
le couscous aux légumes	vegetable couscous
les moules-frites	mussels and chips
la quiche lorraine	bacon quiche
la bouillabaisse	fish stew
les crêpes Suzette	pancakes with orange sauce
le thon	tuna
le fromage blanc	soft white cheese
le beurre	butter
le vin blanc	white wine
la pâte	pastry
la crème fraîche	thick sour cream
la semoule	couscous grains / semolina
l'ail	garlic
un pois chiche	a chickpea
une courgette	a courgette
une carotte	a carrot
C'est un plat typique de ...	It's a typical dish of ...
C'est une spécialité de ...	It's a speciality of ...
C'était ...	It was ...
délicieux / savoureux.	delicious / tasty.
léger.	light.
salé / sucré.	salty / sweet.

Unité 2 Et avec ça?

un artichaut	an artichoke
un chou-fleur	a cauliflower
un citron	a lemon
un haricot vert/blanc	a green/white bean
un melon / un oignon	a melon / an onion
une banane / une olive	a banana / an olive
une pomme	an apple
une pomme de terre	a potato
une tomate	a tomato
un œuf	an egg
le poisson	fish
le fromage	cheese
le jambon	ham
la salade	lettuce
100 grammes de ...	100 grams of ...
un kilo de ...	a kilo of ...
un demi-kilo de ...	half a kilo of ...
une tranche de ...	a slice of ...
un morceau de ...	a piece of ...
Vous désirez?	What would you like?
Je voudrais ...	I would like ...
Et avec ça?	Anything else?
C'est tout, merci.	That's all, thanks.
Ça fait combien?	How much is that?
Ça fait ... euros.	That's ... euros.
Bonne journée!	Have a nice day!

Unité 4 Tu vas faire un voyage scolaire?

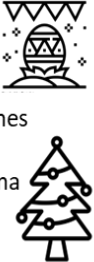|	
Qu'est-ce que tu vas faire?	What are you going to do?
je vais ...	I am going ...
aller en Alsace	to go to Alsace
visiter les marchés de Noël	to visit the Christmas markets
choisir des cadeaux	to choose presents
admirer les maisons illuminées	to admire the illuminated houses
écouter des chorales	to listen to some choirs
goûter du pain d'épices	to try gingerbread
acheter une boule de Noël	to buy a Christmas bauble
manger une tarte flambée / de la choucroute	to eat a pizza-like tart / sauerkraut
boire un jus de pomme chaud	to drink a hot apple juice

la galette des Rois

Le carnaval de Nice

To revise this topic

29

Year 8 Half-Term 2 French Knowledge Organiser
Unit 2: J'adore les fêtes

French

Quelle est ta fête préférée?

J'adore J'aime Je n'aime pas Je déteste Je préfère	Noel Paques Le 14 juillet Le nouvel an La Toussaint La Saint-valentin Eid mon anniversaire La chandeleur	car c'est	marrant trop militaire ennuyeux bête trop commercial amusant Sympa nul	…	Le matin L'après-midi Le soir Chaque année	Je porte un masque Je retrouve mes copains Je regarde la parade Je choisis des vêtements Je rends visite à…… J'entends la musique Je mange des œufs en chocolat Je reçois/choisis des cadeaux	J'adore J'aime Je n'aime pas Je déteste Je préfère	danser manger du chocolat acheter des cadeaux aller chez ma mère/mes cousins faire une soirée pyjama

Vous desirez? (dialogue)

Je voudrais	Un kilo Un demi-kilo Une tranche de ('de' shortens to d' before a vowel or a silent 'h')	tomates oignons haricots-vert bananes pommes pommes de terre jambon fromage	S'il vous plait	Et avec ca?/c'est tout?	Oui c'est tout merci OR	C'est combien?	ça fait____ Euros s'il vous plaît	voilà	Merci, bonne journee	Au revoir monsieur/madame

Qu'est ce que tu as mangé comme specialité?

A Pâques Pour mon anniversaire A Noel	Je suis allé(e) à	+ name of town/city	j'ai mangé on a mangé nous avons mangé J'ai bu On a bu	une crêpe des moules-frites une quiche lorraine de la bouillabaisse un jus d'orange un coca	une spécialité un plat typique	du nord du sud de l'est de l'ouest du nord-est du sud-	de la France de la Guadeloupe	C'était	vraiment un peu trop	délicieux léger sucré salé savoureux	car	J'adore le chocolat J'aime les fruits de mer

Qu'est-ce que tu vas faire à…..?

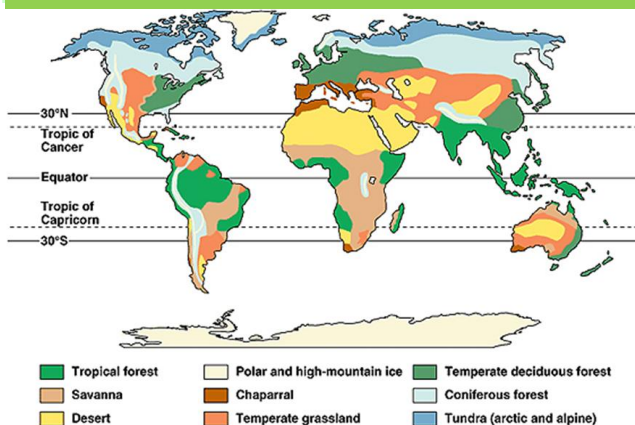|								
Le___ (date)___ (month) Demain La semaine prochaine	On va aller à___ (place name)	en train en voiture en car en avion	Je vais	goûter	de la tarte flambée du jus de pomme chaud du pain d'épices de la choucroute	aussi	je vais acheter	des cadeaux des souvenirs une boule de Noel du chocolat

Year 8 - Rainforests

Biomes: A large naturally occurring community of flora (plants) and fauna (animals) occupying a major habitat.

| Biome	Key Characteristics
Tropical Rainforests	•Along equator (Asia, Africa / South America). •6% of earth's surface. •25°C – 30°C and over 250mm rain per month.
Tropical Grasslands (Savanna)	•Between equator and tropics. •20 – 30°C and between 500 - 1500 mm of rain per year. •Wet and dry seasons.
Deserts	•Tropics (Sahara and Australia). •Over 30°C and less than 300 mmm per year rain. •20% of land's surface.
Temperate Deciduous forests	•Higher latitudes (W Europe, N America, New Zealand). •5 – 20°C and between 500 – 1500 mm rain per year. •4 distinct seasons. •Lose leaves in the winter to cope with the cold.
Coniferous forest (Taiga)	•60°N (Scandinavia / Canada). •Cone bearing evergreen trees. •No sunlight for part of the year.
Tundra	•Above 60°N (Arctic Circle). •Less than 10°C and less than 500mm per year rain. •Cold, icy and dry means 2 month growing season.

Tropical Rainforest – Animal adaptations

- Jaguars have spotted fur. This camouflages them in the shaded forest floor.
- Parrots have strong, sharp beaks to help them crack open nuts.
- Monkeys have long prehensile tails to swing easily through the trees.
- Poison dart frogs are a bright colour to warn predators away.

Tropical Rainforest – Plant adaptations

- Competition for light causes trees to grow fast, tall and straight.
- Buttress roots support the tall trees due to the shallow nature of the root system underground.
- Plants on the forest floor are shade tolerant and able to cope in the darker conditions.
- Epiphytes grow high up on the branches of trees to gain access to the light.
- Lianas wrap themselves around other trees to gain access to light.
- Plants have drip tips and waxy surfaces to allow water to drip off, stopping the leaf moulding or snapping with the weight of water.

Distribution of Biomes

Tropical forest	Polar and high-mountain ice	Temperate deciduous forest
Savanna	Chaparral	Coniferous forest
Desert	Temperate grassland	Tundra (arctic and alpine)

Tropical rainforests are located along or close to the equator. The lie between the Tropics of Cancer and Capricorn. The largest is the Amazon in South America.

Rainforest Climate

Climate Graph for Manaus, Brazil
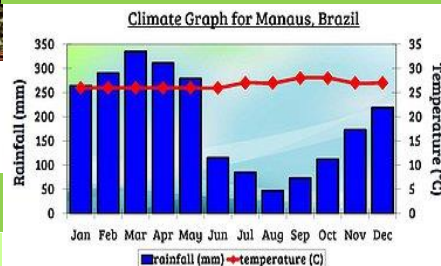
Rainforests experience high rainfall (at least over 2000m a year) and steady, warm temperatures (around 28°C) every day.

Climate graphs show Precipitation and Temperature.

Effects of deforestation

Economic development
+Provides jobs for local people
+Boosts local economy
+More taxes are paid to help country develop
- Destroys resources in the long term.
- Livelihoods of locals destroyed e.g. Rubber tappers.
- Mercury from gold mining poisons fish.

Contribution to climate change
- Trees cut down change the water cycle and make it drier.
- Rainforests are the lungs of the earth and so when deforested there is more carbon dioxide in the air and less oxygen.
- Burning also releases carbon dioxide into the air (Greenhouse effect).

Soil erosion
- Land left unprotected from heavy rain leads to landslides and flooding.
- Nutrients are washed away decreasing nutrients in the soil.

Others
- Loss of biodiversity
- Loss of indigenous tribes & knowledge
- Conflicts between developers and indigenous people.

Tropical Rainforest – Layers of the rainforest

Emergent layer
Tallest trees – over 40m. Lots of sunlight here. Eagles, Monkeys, Bats

Canopy
Primary layer of forest. 30-45m. Lots of leaf cover creating dense canopy, blocking sun from lower layers. Food is abundant for animals here e.g. birds, monkeys, sloths, snakes, frogs.

Understory
Low light conditions. Plants grow large leaves. Rarely grow taller than 4m. Birds, butterflies, frogs, snakes and insects.

Shrub layer/Forest floor
Very little light, so very few plants grow. Ground is covered with fallen leaves and rotting branches. Jaguars, Leopards, Tigers, Gorillas and insects.
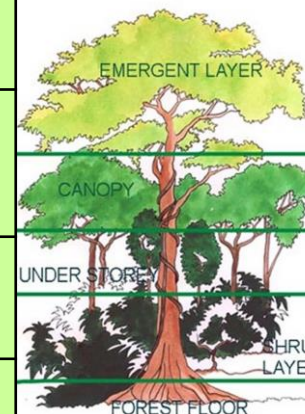
Causes of deforestation (cutting down and removal of trees by humans)

Cattle ranching	Responsible for 63% of Amazon deforestation. Clear trees to provide space for cattle to graze. Need to move regularly due to lack of nutrients in soil.
Commercial farming	Farming crops such as Soy or Palm plantations for palm oil. Palm Oil plantations are the biggest cause of deforestation in Indonesia.
Logging	The business of cutting down trees and transporting the logs to sawmills. Hard woods like Teak and Mahogany are worth the most.
Mining	The removal of minerals from underground e.g. Gold, iron ore
Subsistence farming	A type of agriculture producing food and materials for the benefit only of the farmer and his family or community. Small scale, often slash and burn.
Dams	Dams have been built and large areas of rainforest destroyed by flooding to provide hydro-electric power (HEP). 90% of Brazils energy created by HEP.
Roads	The 4000km long Trans Amazonia Highway built 1970s. Opened up rainforest, but allowed loggers in.

Managing Rainforests Sustainably

Sustainable Development -Meets the needs of the current population without compromising the needs of future generations.

- **Afforestation** – Plant more trees once you've cut some down.
- **Selective logging** - Only chop down fully grown trees.
- **Education and conservation** - WWF (NGO) educate and train conservation workers.
- **Ecotourism** – Small scale, local guides and food. Environmentally friendly activities. Minimises damage to the environment & benefits locals. E.g. Yachana lodge
- **International agreements**. International Tropical Trade Agreement restricts trade in hard woods.

Key terms

Globalisation Globalisation is how the world is becoming interconnected and countries are becoming more interdependent.

Interdependent- When 2 countries are dependent on one another

HIC : High Income Country (rich)
NEE : Newly Emerging Economies e.g. India/China.
LIC : Low Income Country (poor)

Standard of living : the economic level of a person's daily life.

Quality of life :is a social measure of well being e.g. Life expectancy or Literacy Rates.

TNC- Tran's national corporation- TNCs or multinational corporations (MNCs) are companies that operate in more than one country

Fast fashion – Cheap clothing produced rapidly by mass-market retailers in response to the latest trends

Why has globalisation increased?

- Improved transport
- Invention of the internet
- Countries becoming more developed
- Increase in large companies

Apple iPhone example of Globalisation:

Designed	Designed in SILICON VALLEY California
Assembled	All components put together in China.
Gyroscope	This part allows your to change the display from vertical to horizontal and is made in Europe.
Minerals used in lots of the components	E.g. Coltan and cobalt come from areas all over the world, including China.
Memory cards	Come from Korea and Taiwan

Nike T shirt chain of production

The chain of production is the journey a t-shirt takes from plant to your house

1.) Nike designs T-shirt in Nike world HQ in Oregon USA
2.) Farmers grow cotton in India, perfect location due to climatic conditions
3.) Cotton sent to mill to be woven into cloth (India)
4.) Cloth sent to factory in Indonesia to be made into T-shirt (labels added). These are often sweatshops with long working hours and poor working conditions
5.) Transported across ocean in container ship, all over the world
6.) Taken to shops to be put on sale in the places such as the UK
7.) Bought by consumer

Nike Cotton Farmers in India

Cotton is the most important of natural fibres, accounting for almost half of all textile in the world. Cotton is a plant which is grown in more than 80 countries around the world. Nike gets its cotton from India.

Most cotton farmers in India live in poverty. The cotton farmers life revolves around the price they can sell their cotton. When cotton prices are low, then they struggle, when it is high, they do slightly better. Worldwide cotton prices are going down as more and more countries are starting to produce it. Also, less cotton is being grown by farmers due to climate change.

Nike in Indonesia

The Nike world HQ is located in Oregon, USA. Nike operates in more than 160 countries. It has nearly 1 million employees worldwide. Many of the factories are located in the Indonesian capital of Jakarta.

		Positives	Negatives
Economic (money and jobs)		Factory workers have a job. Workers in the Nike HQ and sports people get paid very well.	$1.25 an hour is not seen as enough money to maintain a good QOL.
Social (peoples lives)		Provides jobs therefore reduced unemployment in many LIC countries. Nike improves infrastructure, so local towns benefit.	Living conditions of workers are poor, housing is basic, lacks sanitation. Children often cant go to school as workers cant afford it.
Environmental (surrounding environment)		The environment around Nikes HQ is well looked after.	Nike burn left over shoe rubber releasing toxic fumes which harms peoples QOL as children get lung diseases.

TNC's

Transnational corporations
TNCs or multinational corporations (MNCs) are companies that operate in more than one country. They often have factories in countries that are not as economically developed because **labour** is cheaper. Offices and headquarters tend to be located in the more developed world. Unilever, McDonalds and Apple are all examples of TNCs.

Advantages	Disadvantages
• Creation of jobs • Stable income and more reliable than farming • Improved education and skills • Investment in infra-structure, e.g. new roads - helps locals as well as the TNC • A better developed economic base for the country	• Fewer workers employed, considering the scale of investment • Poorer working conditions • Damage to the environment by ignoring local laws • Profits going to companies overseas rather than locals • Little reinvestment in the local area • Factories are often footloose and jobs insecure. If labour costs increase, the company may move elsewhere • natural resources being over-exploited

Year 8: Globalisation and fashion industry

Winners of the Fashion industry	Losers of the fashion industry
Fashion shops/labels E.g., Nike Charge high amounts for their products, but pay workers in LIC's small amounts of money which gives them big profits.	**Cotton Farmers** Work long hours, 6 days a week. Earn 7.5p an hour. Work in harsh, hot conditions. Suffer from heat exhaustion, allergies and respiratory problems.
Sports people Get paid a lot of money to wear branded clothes. E.g. Ronaldo signed a $1billion lifetime contract.	**Factory workers** Earn $1.25 per hour, not enough to have a decent QOL. Living conditions are poor, housing is basic, lacks sanitation. Children often cant go to school as workers cant afford it.
Consumers Get products easily which are well made. Fast fashion allows consumers to keep up with the trends in a cheap manner.	**Consumers** Paying a lot for products which didn't cost much to make, and have been made in sweatshops.
Phil Knight (Ex CEO of Nike) Worth $44 billion. 26th Richest man in the world	

32

GENERAL "TRANSFERABLE" VOCABULARY

Hallo = hi
Guten Tag = good day
Bitte = please
Danke schön = thank you
Auf wiedersehen= goodbye!
Tschüss = bye!

prima = great
toll = great
wunderbar = wonderful
sehr gut = very good
gut = good / well
nicht gut = not good
Schlecht = bad

0 null
1 Eins
2 Zwei
3 Drei
4 Vier
5 Fünf
6 Sechs
7 Sieben
8 Acht
9 Neun
10 Zehn
11 Elf
12 Zwölf
13 Dreizehn
14 Vierzehn
15 Fünfzehn
16 Sechzehn
17 Siebzehn
18 Achtzehn
19 Neunzehn
20 Zwanzig
21 Einundzwanzig
22 Zweiund zwanzig
30 Dreißig
31 Einunddreißig

am ersten = on the first
am zweiten = on the second
am dritten = on the third
am vierten = on the fourth
am zehnten = on the tenth
am neunzehten = on the 19th
am zwanzigsten = on the 20th
am einunddreißigsten = on the 31st

Die Tage der Woche = days of the week
Montag = Monday
Dienstag = Tuesday
Mittwoch = Wednesday
Donnerstag = Thursday
Freitag= Friday
Samstag = Saturday
Sonntag = Sunday
das Wochenende = the weekend

Die Monate (months)
Januar = January
Februar = February
März = March
April = April
Mai = May
Juni = June
Juli = Juli
August = August
September = September
Oktober = October
November = November
Dezember = December

und = and
aber = but
oder = or
auch = also

Key questions & answers

Wie heisst du? — What is your name?
Ich heisse … — I am called…
Mein Name ist… — My name is…

Wie alt bist du? — How old are you?
Ich bin … Jahre alt — I am … years old

Wo wohnst du? Where do you live?
Ich wohne in … I live in…

Wann hast du Geburtstag? — When is your birthday?
Ich habe am …. Geburtstag — My birthday is on…
Was ist das? — What is that / it?
Das ist…. — That's / It's…
Wie geht's? — How are you?
Es geht mir… — I am …
Wie sagt man… auf Deutsch? — How do you say… in German?
Und dir? — And you?

Wie bist du? — What are you like?
Ich bin — I am
Er / sie ist — He / she is
faul — lazy
freundlich — friendly
intelligent — intelligent
kreativ — creative
launisch — moody
laut — loud
lustig — funny
musikalisch — musical
sportlich — sporty

Grammar - In German ALL nouns (names of things or places) are either MASCULINE (der), FEMININE (die), NEUTER (das) OR PLURAL (die).

Examples

der Tisch = the table
die Schere = the scissors
das Heft = the exercise book
die Schüler = the pupils

ein Tisch = a table
eine Schere = a pair of scissors
ein Heft = an exercise book

So: der, die, das and die = THE — ein, eine and ein = A / AN

NB:
Kein = no / not a
ALL NOUNS ARE WRITTEN WITH A CAPITAL LETTER

The verb HABEN (to have):
Ich habe = I have
Er / Sie hat = He / she has

Topic specific vocabulary

der Bleistift = the pencil
das Buch = the textbook
das Heft = the exercise book
das Etui = the pencil case
der Klebstift = the glue stick
der Kuli = the pen
die Schere = the scissors
das Lineal = the ruler
das Wörterbuch = the dictionary
die Schultasche = the school bag

Question words:

Wie? = how?
Was = what?
Wo? = where?
Woher? = where from?
Wer ?= who?

Lieblingssachen = Favourite things
Was ist dein Lieblings…?
What is your favourite…?

Mein Lieblingsauto ist…
My favourite car is…
Mein Lieblingssport ist…
My favorite sport is…
Meine Lieblingsmusik ist…
My favourite music is…
Meine Lieblings-fussballmannschaft ist…
My favourite football team is…
Meine Lieblingssendung ist…
My favourite programme is…

German

Wie geht's?	Mir geht's…	…prima/super/fantastisch/toll …gut …ok/nicht schlecht …nicht so gut …schlecht	Great Good Ok/not bad Not that good Bad
Wie heißt du?	Ich heiße… Und du?	I'm called… And you?	
Wie alt bist du?	Ich bin _____ Jahre alt	I'm ___ years old	11 = elf 12 = zwölf
Wann hast du Geburtstag?	Ich habe am (date) (month) Geburtstag	My birthday is on the ____	See KO for dates/months
Wie bist du?	Ich bin…	sehr (very) ziemlich (quite) wirklich (really) nicht (not)	See KO for characteristics

German

Year 8 German – Knowledge Organiser Half term 2 "Familie und Tiere"

Die Farben — **Colours**

German	English
schwarz	black
weiß	white
grau	grey
braun	brown
rot	red
orange	orange
gelb	yellow
grün	green
blau	blue
indigoblau	indigo
violett	violet
lila	purple
rosa	pink
bunt	brightly coloured
hellblau/dunkelblau	light blue/dark blue

Haustiere — **Pets**

German	English
Hast du ein Haustier?	Have you got a pet?
Ich habe …	I have ...
einen Goldfisch	a goldfish
einen Hamster	a hamster
einen Hund	a dog
ein Kaninchen	a rabbit
eine Katze	a cat
eine Maus	a mouse
ein Meerschweinchen	a guinea pig
ein Pferd	a horse
eine Schlange	a snake
einen Wellensittich	a budgie
kein Haustier	no pet

Meine Familie — **My family**

German	English
Es gibt … Personen in meiner Familie.	There are ... people in my family.
meine Mutter	my mother
mein Vater	my father
mein Bruder	my brother
mein Stiefbruder/Halbbruder	my stepbrother/ half-brother
meine Schwester	my sister
meine Stiefschwester/Halbschwester	my stepsister/half-sister
meine Eltern	my parents
meine Großeltern	my grandparents
Hast du Geschwister?	Have you any brothers and sisters?
Ich habe zwei Brüder.	I have two brothers.
Ich habe drei Schwestern.	I have three sisters.
Ich bin Einzelkind.	I am an only child.
Ich habe keine Geschwister.	I have no brothers and sisters.

GRAMMATIK - Present tense

To make the present tense in German we follow these rules:
1) take the infintive of the verb e.g. wohnen
2) Chop off the -EN at the end
3) add the correct ending

German	English
ich wohnE	I live
du wohnST	you live
er / sie wohnT	he / she lives
wir wohnEN	we live
sie wohnEN	they live

Eigenschaften — **Qualities**

German	English
Wie ist er/sie/es?	What is he/she/it like?
Er/Sie/Es ist …	He/She/It is ...
dick/schlank	fat/thin
frech/niedlich	cheeky/cute
gemein/süß	mean/sweet
groß/klein	big/small
kräftig	strong
schlau	cunning
(super)lustig	(really) funny
Er/Sie/Es kann …	He/She/It can ...
Italienisch sprechen	speak Italian
fliegen	fly
Flöte/Fußball/Wii spielen	play the flute/football/on the Wii
(schnell) laufen	run (fast)
lesen	read
Rad fahren	ride a bike
schwimmen	swim

Haare und Augen — **Hair and eyes**

German	English
Er/Sie hat …	He/She has ...
schwarze/braune/blonde/rote Haare	black/brown/blond/red hair
kurze/lange/mittellange Haare	short/long/mid-length hair
blaue/braune/grüne/graue Augen	blue/brown/green/grey eyes

German

Hast du ein Haustier? Have you got any pets?	Ja ich habe… …einen Goldfisch …einen Hund …einen Hamster …eine Katze etc Yes I have a…	Er/sie heißt ____ und er/sie ist… He/she is called ___ and he/she is…	Nein ich habe keine Haustiere No I haven't got any pets
Beschreib deine Familie Describe your family	In meiner Familie gibt es ____ Personen In my family there are ____ people	Hast du Geschwister? Have you got any siblings?	Ja ich habe… …einen Bruder/zwei Brüder …eine Schwester/zwei Schwestern Nein ich habe keine Geschwister
Beschreib dich/deinen Vater/deine Mutter Describe yourself/your dad/your mum	Ich habe… I have.. Er/sie hat… He/she has…	braune/blonde/graue/lange/kurze/lockage/wellige/glatte Haare blaue/braune/graue/grüne Augen	
	Ich bin… Er/sie ist… I am… He/she is…	groß/mittelgroß/klein/schlank / dick	
		intelligent/doof laut/schüchtern sportlich/musikalisch frech/niedlich gemein/süß	

German

Year 8 Unit 2: Changing Ideas, 1660-1789: Why were Kings back in fashion by 1660? What made restoration London so exciting?

KEY DATES – THE COMMONWEALTH TO MONARCHY

1658	**September** - Richard Cromwell takes over as Lord Protector on the death of his father, Oliver Cromwell.
1659	**April** – Richard and Parliament try to limit the power of the army.
1659	**May** – Army officers force Richard to resign.
1659	**October** – Army officers quarrel with Parliament and shut it down. The army runs the country.
1659	**December** – The army hands power back to Parliament. MPs quarrel with each other about how to run the country.
1660	**February** – General Monck, head of the army in Scotland, arrives in London with a large force of soldiers.
1660	**March** – General Monck orders elections to be held.
1660	**April** – Parliament meets.
1660	**May** – Charles makes a number of promises in the Declaration of Breda and Parliament votes to give him the crown.
1661	**April** – Charles II is crowned in Westminster Abbey.

Key Terms

Succession	inheriting a title or role.
Commonwealth	an independent country or state.
Republican	a person living in, or wanting to live in, a republic (a country without a monarch).
Declaration of Breda	A declaration by Charles II whilst living in Holland with promises about what he would do if he were allowed entry back into England as King including religious freedom and a pardon for anyone who fought for the parliamentarians.
Proclamation	a public or official announcement dealing with an important matter.

KEY INDIVIDUALS

Charles II	In May 1660, Charles II made a number of promises in the Declaration of Breda. Parliament voted to offer him the crown and he returned to England as King Charles II in 1661.
Samuel Pepys	An MP who lived 1633-1703 who had a successful career as a naval administrator, rising to be Chief Secretary to the Admiralty. He wrote a series of detailed diaries for 1660-69.
Robert Hooke	A scientist interested in cells and the solar system. His work on fossils proved that they were once living organisms and led others to discuss evolutionary theory. He also made a very powerful microscope and used it to discover 'cells' – key to medical developments.
Christopher Wren	Wren was an architect who came up with grand plans for the redesign of London following the Great Fire. His designs included wide open spaces in a carefully laid out grid pattern, similar to those found in Paris. He was also asked to design the new St Paul's Cathedral.
Isaac Newton	Widely believed to have been the greatest scientist of the 17th century. He discovered gravity, the force that holds planets in orbit; he studied light and discovered the seven colours of spectrum; he invented calculus, a mathematical way of describing change. He discovered gravity by studying an apple falling from a tree. Why, did it fall down and not up?
General Monck	Monck worked with both Charles I and Oliver Cromwell and was greatly respected by people on both sides. Deciding to sort out the problem of succession, he rode to London with a large force of soldiers in Feb 1660 and ordered elections to be held. He believed that a restored monarchy would bring about political stability for England.
Oliver Cromwell	Oliver Cromwell was a strict Puritan. He ruled as 'Lord Protector'. He lived in palaces, was called 'your highness' yet refused to become King when offered. Many thought he had gone too far but he allowed Jews to return to England and outlawed religious persecution.

History

KEY IDEAS

The Restoration: Under <u>Cromwell</u>, <u>people couldn't swear, enjoy the theatre, celebrate Christmas and gamble</u>. When <u>Charles II</u> came to the throne, there was a reaction against the strict Puritan lifestyle imposed by Cromwell. <u>People began to enjoy themselves again</u>. <u>Theatres and inns reopened; music, gambling and dancing</u>, cock-fighting and bear baiting became popular again, as did fairs and festivals.

The Plague: <u>London</u> was also a <u>dangerous place</u> with hundreds of houses without sanitation or fresh water, crowded around courtyards and alleys. London was a <u>breeding ground for disease</u>. Fleas that lived on rats in the streets carried the bubonic plague. <u>In 1665, 100,000 Londoners died</u>. No one knew what caused it or how to cure it. The rich moved out of London, <u>the poor were left to suffer and die</u>. The Lord Mayor ordered that victims be shut in their houses. The plague ended when brown rats, which did not carry fleas, drove out the black ones.

The Great Fire (1666): A terrible <u>fire swept through London</u> in early September and by the 6th September, <u>13,000 houses had been destroyed</u> as well as St <u>Paul's Cathedral, the Royal Exchange, 52 company halls, markets, taverns, playhouses and jails</u>. More than four fifths of London was destroyed. Samuel Pepys documented it in his diary. It is believed to have been started in a bakery in Pudding Lane near to London Bridge.

The Royal Society: <u>Charles II</u> was very interested in new scientific ideas. He heard about a group of Oxford University men who had been talking about new ideas and conducting experiments. In <u>1662</u> he granted the group a <u>new Royal Charter,</u> showing his approval. In <u>1663,</u> he granted <u>another royal charter</u> setting up the <u>'Royal Society of London for Improving Natural Knowledge'</u>. Some of the cleverest people in London were members. For example, the mathematician Isaac Newton, the inventor Robert Hooke, the architect Christopher Wren, as well as Samuel Pepys. <u>At Royal Society meetings, ideas were discussed, academic papers were read and experiments were carried out.</u>

New Inventions: The old, Tudor thatched houses became unfashionable and considered cramped, dark and inconvenient. <u>New terraces of houses were built</u> in the 18th Century. Sometimes they were built with gardens. In <u>1628, William Harvey proved that the heart pumped blood around the body</u>. He proved this by experimenting on live animals. At first, many doctors refused to believe him but by the 18th century, surgeons were able to do operations where they tied off arteries to stop bleeding. <u>Thomas Savery and Thomas Newcomen paired up in 1702 to develop a reliable steam engine.</u> By 1789, they were used to power factories and mills – a vital part of the Industrial Revolution.

Biography of Christopher Wren (1632-1723)

<u>Christopher Wren was an architect</u> who lived between 1632 and 1723. When Charles II announced plans to <u>redesign London following the Great Fire of London</u>, Wren thought this was a marvellous opportunity to clear away London's jumble of tiny cobbled streets where disease and fire spread easily. He had <u>visited Paris on a number of occasions</u> and had been impressed by its wide avenues and open spaces. His design for London included these elements. <u>Laid out in a careful grid pattern</u>. <u>He was determined that the new London would rival Paris in magnificence.</u>

Charles admired Wren's plan but he couldn't let it go ahead. Property owners had already started to rebuild following the fire and there was no money available to spend on legal battles with wealthy merchants to force them to accept Wren's plan and stop rebuilding. However, the <u>King insisted that the old streets were to be widened and buildings were to be made of brick and stone.</u>

<u>Wren was appointed to help redesign St Paul's Cathedral</u>. Wren's design shocked many. <u>He believed that true beauty came from geometry</u> and he wanted the cathedral to remind people of the beauty of their world. Catholics were expecting a medieval style cathedral reminding them of heaven and life after death!

The Enlightenment is sometimes called '<u>The Age of Reason</u>', It was a time in the <u>mid 17th and 18th centuries when new ideas swept through Europe and Britain</u>. People began believing in the power of the human mind <u>to explain the world by using rational and scientific thought</u>. Enlightenment thinkers viewed the world as one governed by mathematical and scientific laws. This was a huge <u>challenge to the view that God controlled everything</u>.

Elections in the 17th Century – The law said there had to be a <u>general election every seven years.</u> Elections were usually lively affairs and the polls were kept open for several days. This was so that everyone qualified to vote could come in from the surrounding countryside. The candidates paid for the cost of transport and for the lodging of those they thought would be voting for them. A <u>successful candidate usually had to pay for feasts and celebrations as well. Candidates had to be very rich!</u>
- The rules about who could vote varied from place to place. <u>Only men could vote,</u> and their right to vote was dependent on money or ownership of property. <u>The vote was not secret.</u> Voters would climb onto a platform called Hustings and shout out the name of the person for whom they they were voting. A clerk would write this down and give them a certificate. They could then use this to claim back expenses from the candidate who got their vote.

History

		Chronology: what happened on these dates?		Vocabulary	
The actions of James I and Charles I angered parliament, leading to the Civil War. Parliament won due to its New Model Army and executed the king in 1649.		**1614**	James I argues with parliament and dismisses it for seven years.	**Absolutist**	Someone who rules with absolute power.
Causes of the Civil War	James I and Charles I argued with parliament, trying to rule without it.	**1625**	Charles I comes to the throne and marries a French Catholic.	**Personal Rule**	A period during which Charles ruled on his own.
		1634	To get money, Charles expands a tax called 'Ship money'.	**Ship money**	A tax used to protect coastal areas.
The role of religion	Charles made Catholic-style changes to the Church, upsetting Puritans and angering the Scots.	**1640**	Parliament is recalled after 11 years and argues with Charles.	**High Church**	A Protestant Church with some Catholic practices.
		1642	Charles raises his standard and the Civil War begins.	**Puritan**	A Protestant Church with no Catholic influences.
Charles and parliament	Charles needed money, forcing him to call parliament. They refused and the war began.	**1645**	Royalists lose the Battle of Naseby and the war ends soon after.	**Grand Remonstrance**	A list of criticisms of Charles I from parliament.
		Who were these people? What were these events?		**Court of Star Chamber**	Charles attempted to use what he believed was his God-given right to rule. It became a substitute government, allowing him to rule without parliament.
Roundheads and Cavaliers	England was divided into Parliamentarians and Royalists, fighting over how the country should be run.	**Charles I**	A king who wanted to rule as an absolutist, but was stopped and executed by parliament.		
		William Laud	The Archbishop of Canterbury who introduced 'High Church' reforms.	**Roundhead**	A nickname for the supporters of parliament.
Parliament's victory	Parliament created a New Model Army, which had the support and discipline to defeat the Royalists.	**John Pym**	A leading MP who led a campaign against Charles I in parliament.	**New Model Army**	A new army, set up by the Parliamentarians, to win the war.
		Oliver Cromwell	A cavalry officer in the New Model Army. His power grew due to his success in the war.	**Cavalier**	A nickname for the supporters of Charles I.
The trial and execution of the king	The king was imprisoned, put on trial and executed by leading Parliamentarians.	**The Prayer Book Rebellion (1637)**	A rebellion in Scotland caused by the introduction of a prayer book.	**Leveller**	A group who wanted every man to have a vote.
		Trial of Charles I (1649)	A trial held by Parliamentarians, which led to the king's execution.	**Digger**	A group who wanted to share land out equally.

History

Why did the Civil War break out?	
The role of religion - the rise of the Puritans in the 17th century	The Reformation had made the Church of England **(Protestantism) the official religion**. **Puritans thought** the **Church of England** was still **too Catholic**. They believed individuals should be able to have a private relationship with God without priests, decorations such as stain glass were distractions and churches should be plain looking.
Charles's religious views	**Charles belonged to the High Church, a form of Protestantism closer to Catholicism** and married a French Catholic Princess. Charles wanted the return of colourful stained glass windows and images. **This angered Puritans.**
Charles's relationship with parliament	In **1629 Charles argued with parliament about his religious views and dismissed them, ruling without them for 11 years** known as **'The Personal Rule'.** Charles expanded a ship tax to raise money without asking Parliament's permission. Anyone who refused to pay were imprisoned. Many MPs were furious**. Irish Rebellion: In 1641, Irish Catholics rose up against English rule** after the Reformation had forced them to become protestants. **Charles wanted to recall parliament to ask for money** to send an army to Ireland. **Parliament refused** and passed **'the Grand Remonstrance.**
Tensions with Scotland	**Charles tried to introduce a new English prayer book into Scotland**, leading to war. **Charles's army** was **defeated by the Scots. The Short Parliament:** Charles recalled parliament after 11 years to pay for the war with Scotland. MP John Pym criticized Charles in a 2 hour long speech. Furious, Charles dissolved parliament after 3 weeks. When the **situation worsened with Scotland**, **he recalled Parliament** during **the 'Long Parliament'.**
The outbreak of war	**Charles ordered the MPs responsible for the Grand Remonstrance be handed over** —they refused. **Charles arrived at the House of Commons with 300 troops** and tried to seize them but they had fled. Charles travelled to Nottingham and **raised his royal standard to start the Civil War.**

Why did Parliament win the Civil War?	
The Battle of Naseby (14th June 1645)	The Royalists began well when the cavalry, successfully charged at the Roundheads. However, their mistake was to charge for the Roundhead's baggage train which contained their supplies and treasure. Meanwhile, the Royalist cavalry attacked but **Cromwell's highly trained and well-disciplined army stood their ground. Cromwell** seized his chance and **launched an attack on the Royalist infantry**. The panicked Royalists collapsed and surrendered. **1000 Royalist soldiers were killed and 4500 taken prisoner.** Charles's army was almost entirely destroyed.
The New Model Army	Parliamentarians gave Oliver Cromwell the job of training a new set of troops. This was **England's first professional army** and it was called **'The New Model Army'.** The **troops lived by a very strict set of rules**. Officer positions were filled with men who had shown their talent on the Battlefield. **Criticism of Cromwell or Parliament carried the death penalty,** no man was to swear against God, if any man fled, he would be killed. **Soldiers: Cavalry:** attacked the weak points of the enemy, wore light armour and carried swords with pistols. **Infantry:** These included pikemen and musketeers. Pikeman's pikes were very effective against cavalry. Muskets were devastating at close range. **Artillery:** They were the heavy guns and used canons. They could demoralize the enemy and punch holes in the infantry.

History

Computer science Digital literacy HT2

Hacking is when someone accesses your computer or the data held on it without your permission or knowledge. Hackers generally come in one of three forms: Black Hat, White Hat, and Grey Hat.

White Hat

White-Hat Hackers are also known as **Ethical Hackers**.

- They are certified hackers who learn hacking from courses.
- These are good hackers who try to secure our data, websites. With the rise of cyberattacks, organizations and governments have come to understand that they need ethical hackers.

Black Hat

They hack systems illegally.

- They use their skills to deceive and harm people.
- They conduct various attacks, write malware, and damage system security.
- They steal users' passwords, data, and credit card information by damaging system security.

Grey Hat

These types of hackers find vulnerabilities in systems without the permission of owners.

- They don't have any malicious intent. However, this type of hacking is still considered illegal.
- They find issues and report the owner, sometimes requesting a small amount of money to fix it.

Virus — Harms your computer in some way, usually by deleting or altering files and stopping programs from running.

Trojan — Starts by pretending to be a trusted file, but gives **unauthorised access** to your computer when you run it.

Worms — **Worms** are difficult to get rid of. They copy themselves over networks to **external storage devices**

Spyware — Collects information from your computer and sends it to someone.

Scareware — Tricks you into thinking it's software that you need to buy.

Smartphones

- These allow for photos, videos and your location to be shared instantly on the internet.
- Be careful what you get up to in public as anyone might have a smartphone pointed at you.
- Do not post photos or videos of other people online without their permission.

Cyberbullying

- Using technology to bully someone is called cyberbullying. Cyberbullying can involve one or more of the following:
  - sending offensive texts or emails
  - posting lies or insults on social networking sites
  - sharing embarrassing videos or photos online
- If you're being bullied, tell someone. For more advice visit **Think U Know**.

Location-aware applications

- There are many websites and **mobile applications** that share your location. Some of the popular ones include:
- Foursquare
- Facebook
- Twitter
- It's wise not to share your location. Especially on websites that are accessible by anyone.
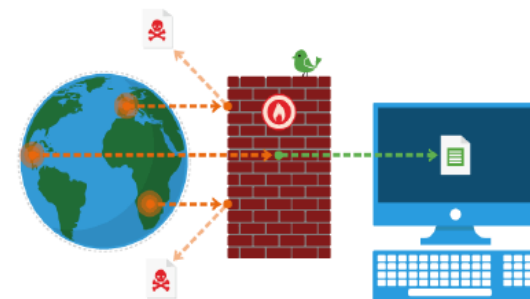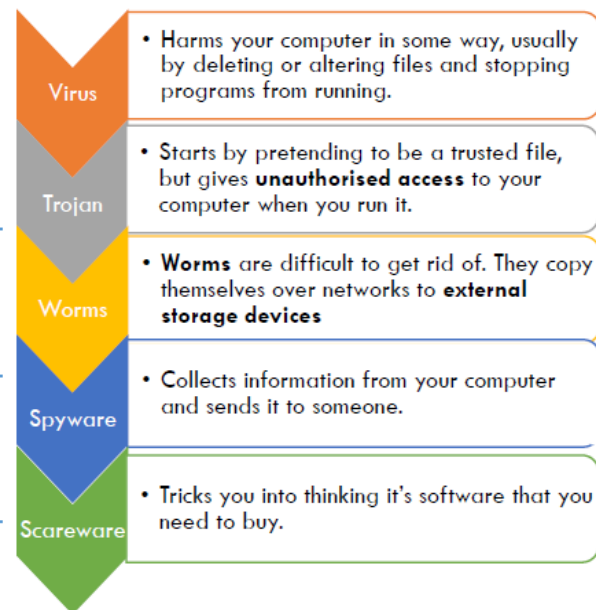
A **firewall** monitors connections to and from your computer. If it spots something suspicious, it closes the connection or disconnects it. Most operating systems include a firewall and it should be turned on by default.

Hackers, people who try to gain access to your computer without your permission, will have a harder time if your firewall is enabled.

Computer science Computational Thinking HT2
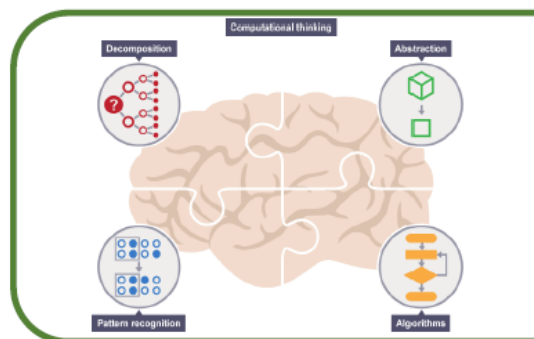
Computational thinking involves taking that complex problem and breaking it down into a series of small, more manageable problems (**decomposition**). Each of these smaller problems can then be looked at individually, considering how similar problems have been solved previously (**pattern recognition**) and focusing only on the important details, while ignoring irrelevant information (**abstraction**). Next, simple steps or rules to solve each of the smaller problems can be designed (**algorithms**).

	Key term	Definition
1	Application	A device or program enabling a user to communicate with a computer.
2	Mimic	Controllable pictures which respond visually and realistically to commands the user has inputted.
3	Control	Computer control means that a computer is part of the control system. The computer is normally used to run the control program.
4	Monitoring	The process of being aware of what is happening around you, in this case the computer system monitors the control system to check it is working correctly.
5	Sensor	A sensor is a device which is designed to measure some physical quantity in its environment, an example is a heat sensor that measures the room temperature.
6	Subroutine	In computer programming, a subroutine is a sequence of program instructions that perform a specific task, packaged as a unit.
7	Actuator	A hardware device that moves or controls a mechanism. A motor is an actuator.
8	Sequence	Sequencing is the specific order in which instructions are performed in an algorithm.
9	Selection	A decision within a computer program when the program decides to move on based on the results of an event.
10	Iteration	In computer programming, this is a single pass through a set of instructions.
11	Flowchart	A diagram that shows a process, made up of boxes representing steps, decision, inputs and outputs.
12	Algorithm	A sequence of logical instructions for carrying out a task. In computing, algorithms are needed to design computer programs.

Thinking computationally is not **programming**. It is not even thinking like a computer, as computers do not, and cannot, think. Simply put, programming tells a computer what to do and how to do it. **Computational thinking enables you to work out exactly what to tell the computer to do.**

Standard Flow Chart Symbols

Symbol	Description
(rounded rectangle)	Used at the start or end point of a flow diagram.
(parallelogram)	Used to represent the input or output of data in a process.
(diamond)	Used when a decision or choice must be made.
(rectangle)	A process symbol, used to indicate a process or computational task being carried out.
(rectangle with side bars)	Used to represent a sub-routine that can be called at various points of an algorithm.

Expand and Simplify:

$(3x - 7)(5x - 2)$

$= 15x^2 - 6x - 35x + 14$
$= 15x^2 - 41x + 14$

$(2x + 9)^2$

$= (2x + 9)(2x + 9)$

$= 4x^2 + 18x + 18x + 81$
$= 4x^2 + 36x + 81$

$(5x + 7)(5x - 7)$

$= 25x^2 - 35x + 35x - 49$
$= 25x^2 - 49$

Above is an example of DOTS
(Difference of Two Squares)

$5x(2x + 1)(4x - 9)$

$= 5x(8x^2 - 18x + 4x - 9)$

$= 5x(8x^2 - 14x - 9)$
$= 40x^3 - 70x - 45x$

Triple Brackets

To expand triple brackets, expand any 2 sets of the brackets, simplify and multiply by the 3rd and simplify again

$(2x - 1)(3x + 2)(4x - 7)$
$= (6x^2 + 4x - 3x - 2)(4x - 7)$
$= (6x^2 + x - 2)(4x - 7)$
$= 24x^3 - 42x^2 + 4x^2 - 8x - 7x + 14$
$= 24x^3 - 38x^2 - 15x + 14$

Factorise:

$-10x - 35 = -5(2x + 7)$

$4x^2 + \dfrac{3}{2}x = \dfrac{1}{2}x(8x + 3)$

You can also take out negatives and fractions as factors!

8A

Half-Term 1

Factorising Quadratic Expressions

$x^2 - x - 72$
$x^2 - 1x - 72$

We require 2 numbers that **add to make the coefficient of x (-1)** and **multiply to make the constant term (-72).** The two numbers are -9 and 8. We then factorise the quadratic:

$(x - 9)(x + 8)$

$x^2 - 25$
$x^2 + 0x - 25$

We require 2 numbers that **add to make the coefficient of x (0)** and **multiply to make the constant term (-25).** The two numbers are $+5$ and -5. We then factorise the quadratic:

$(x + 5)(x - 5)$

Compound Interest:
£2000 is paid into an account that pays 4.8% compound interest per annum (pa). The amount in the account after 3 years is:

$£2000 \times 1.048^3 = £2302.05(2dp)$

Simple Interest:
£2000 is paid into an account that pays 5% simple interest per annum (pa). The amount in the account after 3 years is:

$£2000 + (2000 \times 0.05 \times 3) = £2300$

Reverse Percentages:
A Football shirt is reduced by 17%. It now costs £51.66. The original cost was:

$51.46 \div 0.83 = £62$

A House increases in price by 16%. It is now worth £162,400. The original price was:

$162400 \div 1.16 = £140,000$

Maths

Adding and Subtracting Algebraic Fractions
Look for a common denominator (the easiest way is to multiply the two denominators. Find equivalent fractions and then add/subtract

$$\frac{4}{3a} + \frac{5}{8b} = \frac{32}{24ab} + \frac{15}{24ab} = \frac{37}{24ab}$$

$$\frac{4}{x - 2} - \frac{5}{2x + 1} = \frac{4(2x + 1)}{(x - 2)(2x - 1)} - \frac{5(x - 2)}{(x - 2)(2x - 1)} = \frac{4(2x + 1) - 5(x - 2)}{(x - 2)(2x - 1)} = \frac{3x + 14}{(x - 2)(2x - 1)}$$

Averages from Grouped Frequency Tables:

Height, h (cm)	Freq	Midpoint, m	$m \times$ Freq.
$0 < h \leq 10$	15	5	$5 \times 15 = 75$
$10 < h \leq 20$	37	15	$15 \times 37 = 555$
$20 < h \leq 30$	26	25	$25 \times 26 = 650$
$30 < h \leq 40$	22	35	$35 \times 22 = 770$
Total	**100**		**2050**

Estimate for the Mean $= \dfrac{2050}{100} = 20.5$cm

Using midpoints gives us an estimate as exact values are unknown

Modal Class $= 10 < h \leq 20$
(The category with the biggest frequency!)

Class in which the Median lies: The median is the $\left(\dfrac{n+1}{2}\right)^{th}$ Value. There are 20 people, so the median is the $\left(\dfrac{100+1}{2}\right)^{th} = 55.5^{th}$ Value. The median is therefore in the $20 < h \leq 30$ category!

Upper and Lower Bounds:

15 (Nearest Integer)
Lower Bound = 14.5
Upper Bound = 15.5
$14.5 \leq 15 < 15.5$ (This is known as the Error Interval)

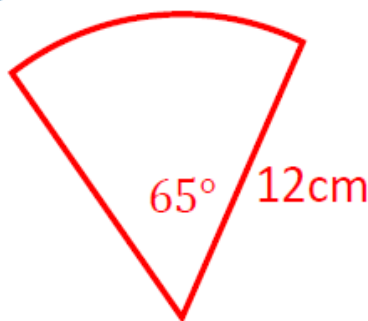20.9 (3sf)
LB = 20.85 and UB = 20.95
$20.85 \leq 20.9 < 20.95$ (This is the Error Interval)

Sectors:

$$Arc\ Length = \frac{\theta}{360} \times \pi d$$

$$Area\ of\ a\ Sector = \frac{\theta}{360} \times \pi r^2$$

Where: θ is the angle and r is the radius

$65°$ 12cm

$$\theta = 65°, r = 12, d = 24$$

$$Arc\ Length = \frac{\theta}{360} \times \pi d$$
$$Arc\ Length = \frac{65}{360} \times \pi \times 24$$
$$Arc\ Length = 13.6cm (1dp)$$

$$Area\ of\ Sector = \frac{\theta}{360} \times \pi r^2$$
$$Area\ of\ Sector = \frac{65}{360} \times \pi \times 12^2$$
$$Area\ of\ Sector = 81.7cm^2 (1dp)$$

Applying Upper and Lower Bounds:
A square has side 4.2cm correct to 1dp.

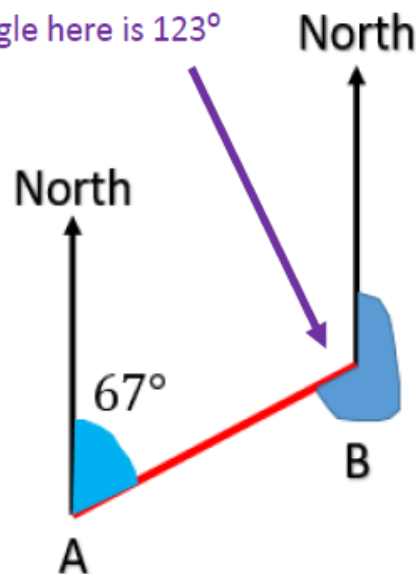The <u>Maximum</u> Perimeter is given by: $4.25 \times 4 = 9cm$

The <u>Minimum</u> Area is given by: $4.15 \times 4.15 = 17.2225cm^2$

Bearings:
- 3 Figures
- Measure from North (000°)
- Measure Clockwise

Co-Interior Angles add up to 180°. The angle here is 123°

North

North

$67°$

B

A

The bearing of **B from A is 067°**. The bearing of **A from B is 247°**

Maths

8A
Half-term 2

Algebraic Terminology:

Expression (No Equals)

$\quad 4x + 5y, 2x - 5, 7x(3x - 7)$ etc.

Equation (Has an = and can be SOLVED)

$\quad 4x - 7 = 15, 4(3x + 1) = 7$ etc.

Identity (True for every value)

$\quad 4(x - 2) \equiv 4x - 8$ etc.

Formula (Can be used to work something out)

$\quad y = 3x - 1, Area = \pi r^2, V = b^3$ etc.

Inequality (True for a RANGE of values)

$\quad 4x - 1 < 11, 5x + 2 \geq 17$ etc.

Substitution:

Find the value of $3x + 5y$, when $x = 6$ and $y = -1$.

$$(3 \times 6) + (5 \times -1)$$
$$= 18 + -5$$
$$= 18 - 5$$
$$= 13$$

If $y = 6x - 13$, find the value of y when $x = 1.5$.

$$y = (6 \times 1.5) - 13$$
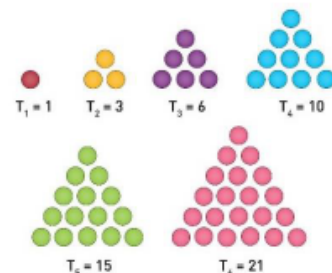$$y = 9 - 13$$
$$y = -4$$

Cube Numbers

- $1^3 = 1 \times 1 \times 1 = 1$
- $2^3 = 2 \times 2 \times 2 = 8$
- $3^3 = 3 \times 3 \times 3 = 27$
- $4^3 = 4 \times 4 \times 4 = 64$

Triangular Numbers

$T_1 = 1 \quad T_2 = 3 \quad T_3 = 6 \quad T_4 = 10$

$T_5 = 15 \quad T_6 = 21$

Reciprocal:

To find the Reciprocal of a number, you simply need to "flip" it

Reciprocal of $2 = \frac{1}{2}$

Reciprocal of $\frac{3}{5} = \frac{5}{3}$

Reciprocal of $\frac{1}{4} = 4$

Factorising:

$10x - 25 = 5(2x - 5)$
$x^2 - 40x = x(x - 40)$
$16x^2y + 24xy^2 = 8xy(2x + 3y)$

Remember to check your answers by expanding the brackets!

Multiplying and Dividing Mixed Numbers

$$2\frac{2}{3} \times 3\frac{1}{7} = \frac{8}{3} \times \frac{22}{7} = \frac{176}{21} = 8\frac{8}{21}$$

Multiply the Numerators and Denominators together!

$$2\frac{1}{5} \div 1\frac{3}{4} = \frac{11}{5} \div \frac{7}{4} = \frac{11}{5} \times \frac{4}{7} = \frac{44}{35} = 1\frac{9}{35}$$

To divide, use KFC (Keep First, Flip Second and Change to a x)

Expanding Brackets:

$3(2x - 7) = 6x - 42$

$4x(5x + 7y - 3z^2) = 20x^2 + 28xy - 12xz^2$

Adding and Subtracting Mixed Numbers

$$2\frac{2}{3} + 3\frac{1}{7} = \frac{8}{3} + \frac{22}{7}$$

$$= \frac{56}{21} + \frac{66}{21} = \frac{122}{21} = 5\frac{17}{21}$$

$$2\frac{1}{5} - 1\frac{3}{4} = \frac{11}{5} - \frac{7}{4}$$

$$= \frac{44}{20} - \frac{35}{20} = \frac{9}{20}$$

1.) Write both fractions as improper fractions

2.) Find the common denominator

3.) Write equivalent fractions

4.) Add/Subtract the numerators

Writing and Simplifying Expressions

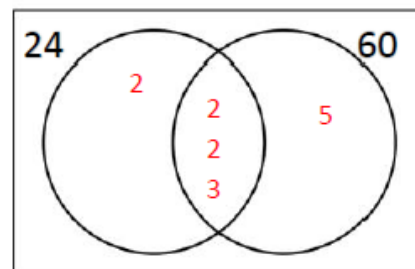John is x years old. Tom is 4 years older than John. Adam is 5 years younger than John and Carl is 3 times as old as Tom. The sum of their ages is:

$$x + x + 4 + x - 5 + 3(x + 4)$$
$$= x + x + 4 + x - 5 + 3x + 12 = 6x + 11$$

Prime Factor Decomposition

$24 = 2^3 \times 3 \quad$ and $60 = 2^2 \times 3 \times 5$

24 — 2 — (2, 2, 3) — (2, 5) — 60

HCF is the product of numbers in the overlapping section

$$HCF = 2 \times 2 \times 3 = 12$$

LCM is the product of **ALL** numbers

$$LCM = 2 \times 2 \times 2 \times 3 \times 5 = 120$$

8B

Half-Term 1

Percentage of Amounts without a Calculator:

47% of £120

$10\% = £12 \Rightarrow 40\% = £12 \times 4 = £48$

$1\% = £1.20 \Rightarrow 7\% = £1.20 \times 7 = £8.40$

Add these two answers together to get 47%:

$£48 + £8.40 = 56.40$

Percentage Increase without a calculator

1.) Increase £48 by 13%

13% of $£48 = £6.24$

2.) To increase, ADD on the £6.24.

New Amount $= £48 + £6.24 = £54.24$

Percentage Decrease without a calculator

1.) Decrease £48 by 13%

13% of $£48 = £6.24$

2.) To decrease, SUBTRACT the £6.24.

New Amount $= £48 - £6.24 = £41.76$

Percentage of Amounts with a Calculator:

47% of £120

$47\% \times 120 = £56.40$

To use the Percentage Button on your calculator, press **SHIFT** and then the (button.

Percentage Decrease with a Calculator:

Decrease £48 by 13%

$100\% - 13\% = 67\%$

$67\% \times £48 = £41.76$

Percentage Increase with a Calculator:

Increase £48 by 13%

$100\% + 13\% = 113\%$

$113\% \times £48 = £54.24$

Calculating Percentage Change:

$$Percentage\ Change = \frac{Difference}{Original} \times 100$$

A new car is valued at a price of £17000. 4 years later it is valued at £9450.

The Percentage Change is:

$$\frac{17000 - 9450}{17000} \times 100 = 44.4\%(1dp)$$

The car has lost 55.6% of its original value

Dividing by a Decimal:

Make the number we are dividing by an **INTEGER**

$\times 100$ ⟳ $0.246 \div 0.02$ ⟲ $\times 100$

$24.6 \div 2$

$$2 \overline{)24.6} = 12.3$$

$\times 10$ ⟳ $1.738 \div 0.5$ ⟲ $\times 10$

$17.38 \div 5$

$$5 \overline{)17.380} = 3.476$$

Remember that if you divide by a number between 0 and 1 your answer will be bigger!

Area and Perimeter of Part Circles:

Radius = 6cm
Diameter = 12cm

12cm

$$Area = \frac{\pi r^2}{2} = \frac{\pi \times 6^2}{2} = \frac{36\pi}{2} = 18\pi\ cm^2$$

$$= 56.5 cm^2 (1dp)$$

Perimeter = Curved Edge + Straight Edge

$$Curved\ Edge = \frac{\pi d}{2} = \frac{\pi \times 12}{2} = 6\pi\ cm$$

$$= 18.8cm\ (1dp)$$

Perimeter $= 12 + 18.8 = 30.8cm\ (1dp)$

Areas of 2D Shapes:

Rectangle $= base \times perpendicular\ height$

Triangle $= \frac{base \times perpendicular\ height}{2}$

Parallelogram $= \frac{base \times perpendicular\ height}{2}$

Trapezium $= \frac{(a+b) \times h}{2}$

Circles

$$Area = \pi r^2$$

$$Circumference = \pi d$$

Maths

8B

Half-term 2

Treble and Bass clef notation

C E G B D F A D F A C E G

E G B D F A C F A C E G B
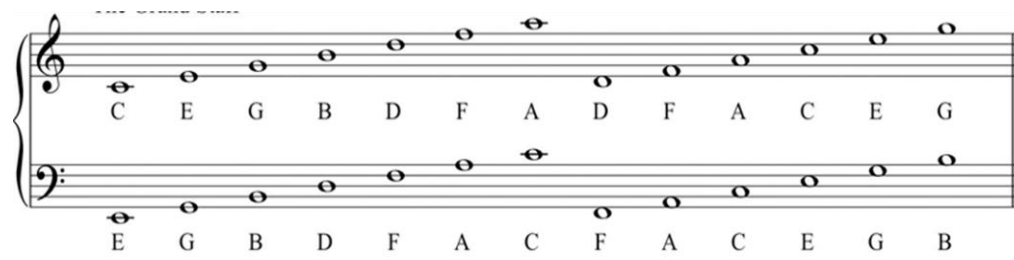
Y8 Music HT1 & 2 – Melody and Texture

 Melodic Features/Techniques

Ostinato- A short repeating pattern. Ostinato can be melodic or rhythmic. An ostinato can also be called a loop.

Metamorphosis The process of altering a melody by changing one or two notes on each repetition.

Note subtraction Taking one note out of a melody on each repetition

Note addition Adding a note to a melody on each repetition

Augmentation Making every note and rest duration twice in length, doubling the length of the melody.

Diminution Halving every note and rest duration, halving the length of the melody.

Phase Shifting A melody/rhythm played by 2 players, with one player shifting out of phase by one beat each time after a set number of repetitions. The melodies/rhythms will gradually get back into phase.

Layering Introducing each new sound one by one. The addition of each layer creates a thicker texture.

Piano keyboard diagram
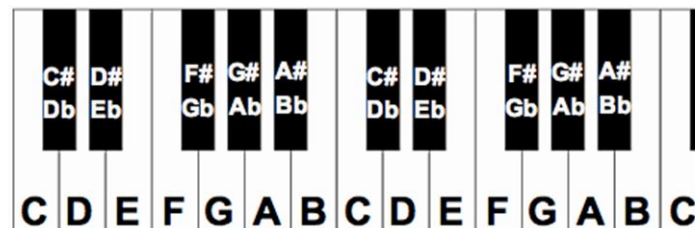
C is to the left of the 2 black keys

What does justice look like?
Year 8 Topic 1 - Religion, Philosophy & Ethics

| Key Terms	Definition
Justice	is the upholding of what is fair and right
Capital Punishment	the death penalty for a crime or offence
Shari'ah Law	Sharia means 'straight path'. This is the law of Islam which sets out a code for how to live. It is based on the Qur'an and Prophet Mohammad's practice (recorded in the Sunnah)
Stewardship	is caring for the environment for the benefit of future generations
Quality of Life	is the standard of health, comfort and happiness a person has
Zakat	is the Islamic (Muslim) duty to give a minimum of 2.5% of their wealth each year, to charity. This is the second pillar of Islam
Less Economically Developed Country	are countries where people are paid a low-income and don't have the opportunities or infrastructure wealthier countries have

"An eye for an eye"
Exodus (Bible)

"Forgive seventy times seven"
Mathew 18 (Bible)

"whoever believes in Allah and the last day should not hurt his neighbor" (Qur'an)

"I believe in justice and truth, without which there would be no basis for human hope" 14th Dalai Lama (Buddhist)
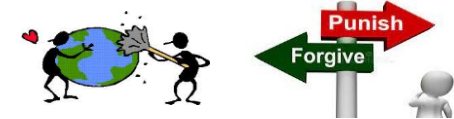
Religious Studies

Wealth and Poverty

Causes of poverty are more common is less economically developed countries (LEDCs = countries where people are paid a low-income and don't have the opportunities we do). **9.2% of the world (almost 700 million people) live in extreme poverty, on less than £1.50 a day, without enough to eat. 1 in 3 people in the world don't have access to safe drinking water.**
Causes…
- Wars – common in LEDCs & they destroy crops, hospitals, homes & schools leading to poverty
- Unfair trade – people not paid enough in poorer countries so rich countries make all the profits
- Illness – common in LEDCs, people too ill to work so no money to live off or get healthcare
- Lack of Education – in LEDCs fewer children are educated so less chance of getting out of poverty

<u>Religious charities</u> such as CAFOD (Catholic Agency for Ov… Just one world …nt) are trying to reduce poverty through…
Long-term plans to help people become self-supporting e.g., CAFOD has set up a scheme in Brazil to help homeless children get an education & skills to earn a living.
Disaster & Emergency aid includes sending food, water, shelter & medicine e.g. to refugees fleeing Ukraine
Raising Awareness, 5% of CAFOD budget spent on educating people in Churches & school etc., about ending poverty
Speaking out for people too poor to fight for their rights

Stewardship

Stewardship is caring for the environment for future generations.
People can look after the environment by; recycling to reduce waste, using public transport to reduce CO2 emissions that pollute our air, campaign for more renewable energy use (e.g. wind energy) to prevent global warming from worsening. This is important because of 50% of all natural disasters between 1970 and 2019 have been caused by climate change, so preventing global warming will save lives.

Jews, Muslims and Christians all believe God created the earth and gave it to humans as a gift to look after ("have dominion over the land" as written in Genesis). They believe it is therefore their duty to look after it and doing so is a way of showing love and respect to God as well as their neighbor.

Humanists do not believe in God but believe stewardship is important…
- Quality of life and happiness are important and we can improve them by protecting our environment
- It makes sense, for the protection of the human race, to preserve our environment and not waste resources
- We may use methods such as population control to stop people having too many babies in a world that already has too many lives destroying the planet

Some atheists may believe it isn't our duty to look after the environment but instead the government and large organisations who do the most damage.

Why is justice important in to Buddhists?
Buddhist believe in karma which means their actions impact if their future life or lives will be happy or full of suffering.
Buddhists believe that we should be compassionate and help someone reform their life when they have misused their freewill and causes dukkha (suffering).

Why is justice important in Islam?
The Qur'an says "be persistently standing firm in justice" Surah 4
Muslims believe they will be judged in the afterlife based on their actions as it is written in the Qur'an.

Why is justice important to Christians?
The Bible says "hold fast to love and justice" Hosea 12
Christians believe they will have eternal judgement based on their actions (Parable of the Rich Man & Lazarus).

Why is justice important to Humanists?
Humanists do not believe in God, judgement or karma. But, the UK Humanist Association believes we can find happiness in this life by helping others do the same – one way to do this is base our decisions on empathy and to seek justice for all.

Law & Punishment
In the UK, law is made by parliament and crimes are judged in courts of law. Punishments are given to those who fail to follow the law. Although the UK laws were once based on Christian teachings, parliament doesn't base decisions on religion anymore. However, in other countries laws and punishments may be based on religious instructions.
In Islamic countries punishments are based on Shari'ah Law (from the Qur'an). These laws are often considered too strict by modern standards e.g. the punishment for stealing is having one's hand cut off.

Aims of Punishment
Punishments are important for; keeping peace in society, preventing crimes and giving offenders a chance to change their behaviour and make up for their crimes. The intention behind the punishment is it's aim….
- **Retribution** is often considered as revenge based on the belief that those who have caused suffering should suffer. It is when a punishment is in proportion to the crime e.g. "an eye for an eye" Exodus
- **Deterrence** is a punishment that puts people of future crimes. For example, Shari'ah Law regarding stealing is to have your hand cut off, this is disproportionate to the crime and will deter it from happening.
- **Reform** involves educating criminals so they don't want to or have to turn to crime again. Many religious people believe this is the most loving form of punishment and thus should be given.

Death Penalty (Capital Punishment)
Abolished in the UK in 1970 but still happens across the world.

Argument for DP	Arguments against DP
Christian view… - The Old Testament Bible states "an eye for an eye" **Muslim** view… - The Qur'an states that, if clearly proven, then the DP can be used to punish murder, adultery and apostasy (someone working against Islam). - Muhammed himself sentenced people to death. **Secular** (non-religious) view… - DP may be a deterrent to prevent serious crimes - Murderers are a threat to society	**Christian** view… - Instead of "an eye for an eye" Jesus said "turn the other cheek" and "forgive 70x7" **Muslim** view… - Prophet Muhammed said "whoever believes in Allah and the last day should not hurt his neighbor" (Qur'an) **Secular** (non-religious) view… - Countries without DP have lower murder rates - DP can't be reversed, what if judge was wrong - Executed terrorists become martyrs inspiring others to do the same

Religious Studies

Key Terms	Definition
Moral Evil	Suffering caused by mankind e.g. murder.
Natural Evil	Suffering caused by nature is e.g. suffering caused by earthquakes.
The Problem of Evil	The idea that if God existed then there would be no evil in the world. God's characteristics do not fit with a world with evil in it.
Evidential Problem of Evil	Hume's argument that the evidence of evil in the world is so great that it cannot be explained away, it proves God does not exist.
Inconsistent Triad	The argument which shows God, cannot be both omnipotent (all-powerful) and omnibenevolent (all-loving) while evil exists – this undermines God's existence.
Free Will	The power of acting freely without force.
Theodicy	An explanation for why God would allow evil in the world.

A wise man proportions his belief to the evidence'
David Hume (Atheist)

'God is omnipotent: God is wholly good, and yet evil exists. There must be some contradiction between these three propositions' John Mackie (Atheist)

"the world is seen, instead, as a place of soul making"
John Hick (Christian)

"Why should I respect a capricious… God that creates a world that is so full of injustice and pain?" Stephen Fry (Humanist)

The Problem of Evil : John Mackie & David Hume

Hume
(1711 – 1776)

- **Natural evil is** suffering caused by nature e.g. homes destroyed by an earthquake
- **Moral evil is** suffering caused by mankind e.g. murder

The problem of evil is the idea that if God existed then there should be no evil in the world. God is meant to be all loving (benevolent) but He created a world and allowed evil to exist. He is meant to be all-powerful, yet He does not stop evil from happening and He is meant to be all-knowing yet he created the world knowing there would be evil and suffering in it.
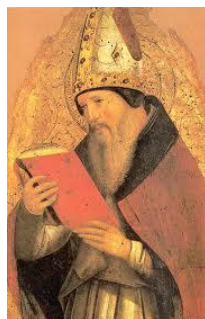
David Hume (Scottish philosopher from 18th Century) does not believe in God. He believed that if God was all powerful, all knowing and all loving then there wouldn't be evil in the world therefore either God doesn't exist or He isn't worthy of worship – this he called the 'inconsistent triad'. He criticised the nature of God in two arguments…
- Evidential Existence: Hume uses the analogy of a falling down house to show how religious people react to the flaws in the world. Leaking roof – that's to stop fires! No door – that's to let in fresh air! Religious people do the same, they see the vast amount of evil in the world and try to explain it away – it doesn't make sense, the amount of evidence for evil outweighs the 'excuses.
- Prior Probability: Hume asks the question 'If a stranger came to our planet – would they think it was a good design?' he suggests that as per prior probability if a stranger (he doesn't use the term alien but it's the same premise) came to our world they would easily conclude that the world is a poor design – therefore questioning the power and nature of God

Mackie, an Australian philosopher and contemporary of Hume, agreed with the inconsistent triad and went on to suggest God cannot exist because…
• We don't need evil to appreciate good as good and evil are not truly opposite. Even if we did we
don't need as much suffering as we have in the world.
• The purpose of suffering cannot be to help us become better people because God could make us perfect if he wanted to

Humanists do not believe in God but place great importance on human life, when considering evil and suffering, they do not believe it is a punishment or a test because they do not believe in God. Evil is caused by humans and nature along.

Religious Studies

50

Free Will Theodicy

The 'free will defense' is the idea that God is not the cause of evil and suffering but it is the result of human freewill.

Christianity
- St Augustine, 5th century Christian philosopher, believed that humans have been given complete free will as a gift from God and it is such freewill that leads to suffering. Because the Bible says everything God created is "good" and because God is wholly good, God could not create evil. Evil is a privation (a lack of) good when mankind steps away from God.
- Augustine went on to explain that natural evil is caused by humans too; Adam and Eve were told not to eat the apple but they did and this first (original) sin means humans rejected God and cannot live in the Garden of Eden so live in an world they have corrupted with sin.

Islam
- Consequences of the misuse of freewill include being judged by God and spending eternity in hell. However evil and suffering can help prepare us for the afterlife and enable us to become better people, according to Christianity.

Augustine of Hippo (354-430)

Inconsistent triad

God is omnipotent

God is omnibenevolent

Evil exists

Criticism - if our actions are predetermined by a God, then humans cannot be held responsible for their actions. Similarly, if God knows humans cause suffering and doesn't stop it He cannot be all-loving.

Criticism - this theodicy doesn't explain why some humans suffer more than others.

Soul Making Theodicy

St Irenaeus argued that evil exists due to the deliberate action of God who wanted his creation to develop the qualities that would make them spiritually perfect.

He pointed out that the Bible (Genesis 1) says God created the world and "it was good"; he suggests that the quote God created the world with room for improvement.

St Ireneaus believes that mankind needs evil in the world in order to become moral because it through evil and suffering we can grow. God remains at an epistemic distance from us, this means he doesn't intervene when we suffer but allows us to grow by facing moral and natural evil.

John Hick, a more recent philosopher, supported this idea when he stated "the world is seen, instead, as a place of soul making". By experiencing suffering and overcoming it, keeping our faith and learning from it we can become children of God.
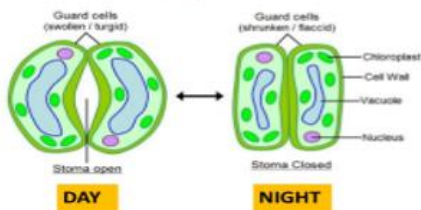
St Irenaeus (130 – 202 AD)

Photosynthesis

- It's a chemical process plants & algae use to make their own food (**glucose**)
- Photosynthesis takes place in the **CHLOROPLASTS** of plant cells.
- Light energy is absorbed by a green pigment called **CHLOROPHYLL**.

$$Water + Carbon\ dioxide \xrightarrow[Chlorophyll]{Light\ Energy} Oxygen + Glucose \rightarrow Starch$$
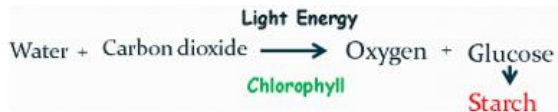
- A leaf is broad and flat to capture lots of sunlight.
- Veins carry water to the leaf and take food from the leaf to the rest of the plant.
- Certain plant cells contain chloroplasts filled with chlorophyll.
- Small holes called stomata in the underside of a leaf allow gases in and out.

When are stomata open and when are they closed?

Guard cells (swollen / turgid) — Stoma open — **DAY**
Guard cells (shrunken / flaccid) — Chloroplast, Cell Wall, Vacuole, Nucleus — Stoma Closed — **NIGHT**

Changes to the body during exercise:

Heart rate increases

Stroke volume increases

Breathing rate increases

Deeper breaths

Sweat

Blood vessels dilate

Why does heart rate increase during exercise:

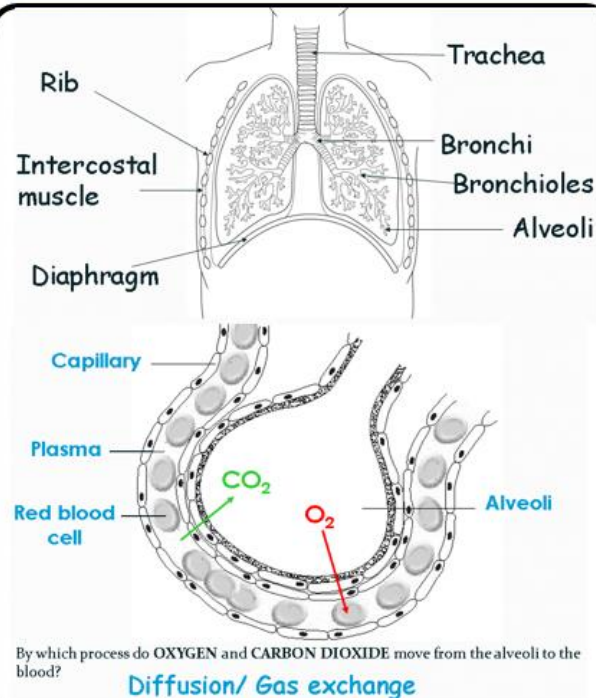More blood

More glucose & oxygen to muscles

More respiration= more energy

More muscle contraction

More CO2 removed

More lactic acid oxidised

Trachea
Rib
Intercostal muscle
Bronchi
Bronchioles
Alveoli
Diaphragm

Capillary
Plasma
Red blood cell
CO_2
O_2
Alveoli

By which process do **OXYGEN** and **CARBON DIOXIDE** move from the alveoli to the blood?
Diffusion/ Gas exchange

Aerobic respiration is the process of releasing energy.
Aerobic respiration happens in the *mitochondria*.
We need it for:
Muscle contraction (moving)
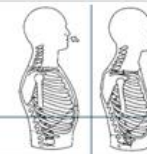Making molecules (growth)
Maintain a warm body temperature

$$\textbf{Glucose} + \textbf{Oxygen} \rightarrow \textbf{Carbon Dioxide} + \textbf{Water} + \textbf{Energy}$$

During exercise, if **INSUFFICIENT OXYGEN** is reaching the muscles they use anaerobic respiration to obtain energy.
Anaerobic respiration is the **INCOMPLETE BREAKDOWN OF GLUCOSE**

$$Glucose \rightarrow Lactic\ Acid\ (+\ a\ little\ energy)$$

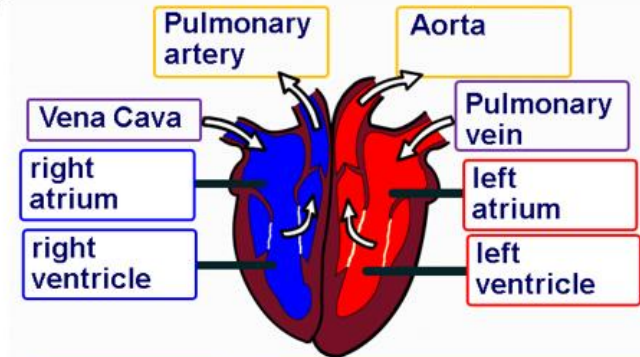| Inhalation		Exhalation
Ribs move up and out	How do the ribs move?	Ribs move down and in
Diaphragm moves down	How does the diaphragm move?	Diaphragm moves up
Pressure decreases in the chest	What happens to the pressure in the chest?	Pressure increases in the chest
Volume increases	What happens to the volume in the chest?	Volume decreases

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Pulmonary artery
Aorta
Vena Cava
Pulmonary vein
right atrium
left atrium
right ventricle
left ventricle

red blood cell	carries oxygen around the body
white blood cell	engulfs invading pathogens
platelet	plays an important role in blood clotting
plasma	fluid which carries other blood components

artery	vein	capillary
carries blood away from heart	carries blood towards heart	carries blood to and from cells
has thick and elastic walls	contains valves	has thin, permeable walls
carries blood at high pressure	has a large lumen	

Science

Hazard warning symbols

Bottles in the laboratory and tankers carrying chemicals on the road all have to carry hazard warning labels to show when there is a chemical hazard. Some of the common warning signs are:

	Moderate hazard	Substance is an irritant or is harmful. Not corrosive but will make the skin red or blister. Not as dangerous as toxic.
	Flammable	Catches fire easily.
	Corrosive	Attacks and destroys living tissues, such as skin and eyes. Attacks metals.
	Acutely toxic	Can cause death if swallowed, breathed in or absorbed by skin.
	Explosive	Substances that can self-react or detonate easily.

Indicators

Indicators are coloured dyes which often come from plants such as red cabbage and beetroot. They change colours when added to acids and alkalis.

Litmus is an indicator which turns red in acids and blue in alkali. **Red cabbage** indicator is red in acids, purple when neutral and green in alkalis.

Most indicators only tell us if a substance is an acid or alkali, they don't tell us how strong or weak they are. Universal indicator is a mixture of dyes that changes colour gradually telling us the level of acidity or alkalinity of a substance. The colours can be linked to the pH scale.

The pH scale

The strengths of acids and alkalis can be measured on the **pH scale**, which runs from 1 to 14. pH numbers **1 to 6** are acids, **7** is neutral, and **8 to 14** are alkalis.

You can find out the pH number using a **universal indicator**, or by using a pH meter.

Acids and alkalis

Acids taste sour and are often found in foods, common acids include vinegar and lemon juice. Fizzy drinks, pickles and spicy sauces also contain acids. Stronger acids such as sulphuric and nitric acids can be more dangerous and often they are **corrosive**.

Alkalis feel soapy. They are often used in cleaning products and can also be corrosive. Weak alkalis include soap and toothpaste.

Naming salts

When acids react with metals or metal compounds they make salts. The name of the salt has two parts. The first part is the name of the metal and the second part comes from the type of acid.

Hydro**chloric** acid makes a **chloride**
Nitric acid makes a **nitrate**
Sulfuric acid makes a **sulfate**

Metal carbonates and acids

A metal carbonate will also neutralise an acid. This time the products are a salt, carbon dioxide and water.

The general equation is:

acid + metal carbonate → salt + carbon dioxide + water

For example:

Sulfuric + copper → copper + carbon + water
acid   carbonate   sulfate   dioxide

We can test for carbon dioxide using limewater. Limewater goes milky if carbon dioxide is bubbled through it.

Neutralisation

Metal oxides and hydroxides are referred to as **bases**. A __soluble base__ (usually a metal hydroxide) is called an __alkali__.

Bases can cancel out acids, making them **neutral.** A base reacts with an acid to form water and a salt. This reaction is called **neutralisation**.

Acid + base → salt + water

For example:

hydrochloric acid + potassium hydroxide → potassium chloride + water

sulfuric acid + copper oxide → copper sulfate + water

We can check to see if neutralisation has occurred using universal indicator. The pH of the solution gets closer to neutral (pH7).

Metals and acids

Many metals react with acids. Some unreactive metals will only react very slowly with strong acids, some will not react at all. Some metals are more reactive and explode when added to acid.

When a metal reacts with an acid, hydrogen gas is given off. The reaction also produces a compound called a salt.

metal + acid → salt + hydrogen

For example:

hydrochloric acid + zinc → zinc chloride + hydrogen

We can test for hydrogen by putting a burning splint into a test tube of gas. If hydrogen is present, it will explode with a squeaky 'pop'.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Strong acid			Weak acid			Neutral	Weak alkali			Strong alkali			
red			orange / yellow			green	green - blue			purple			

Science

Waves can behave in different ways. Two common wave behaviours are reflection and refraction.

Waves will reflect off surfaces. If a sound wave reflects off a surface, we hear an echo.

We are only able to see non-luminous objects because light reflects off them. Light reflects very uniformly off flat, shiny surfaces (specular reflection). Dull, uneven surfaces reflect the light more unevenly (diffuse reflection).
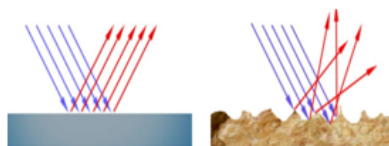
Specular Reflection **Diffuse Reflection**

When light reflects off a surface, the angle of incidence is always equal to the angle of reflection. This is called the law of reflection.
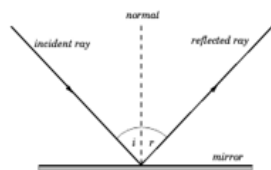
The angles of incidence and reflection are measured from the normal line. This is an imaginary line at 90° to the surface.

Refraction is the way in which light slows down and changes direction as it passes from the air in to a denser substance such as glass. When it goes from air in to glass, it changes direction towards the normal line.
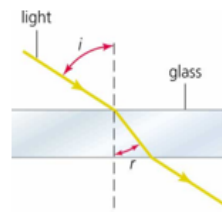
When the light emerges out the other side of the glass, it speeds up and changes direction back away from the normal.
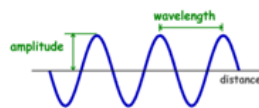
A wave can be described in terms of its wavelength and its amplitude. The wavelength is often measured as the distance between two peaks. The frequency of the wave refers to how many waves pass a point per second. The amplitude is the height of the wave.

Waves can exist either as transverse waves or as longitudinal waves. Transverse waves oscillate at 90° to the direction of travel. Longitudinal waves oscillate in the same direction as the direction of travel.

Light travels as a transverse wave, sound travels as a longitudinal wave.

Transverse **Longitudinal**
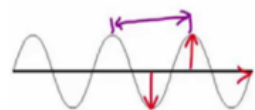
Light **Sound**

Colour filters work by only allowing certain colours of light to pass through them. Green filters only let green light through, red filters only red light etc.

Secondary colours (magenta, yellow and cyan) are made up from two colours. If magenta light is shone on to a red filter, the blue component of magenta is absorbed and red light is transmitted through.

Sound waves occur when there is a disturbance in a solid, liquid or a gas. Sound can not travel through space because it requires particles to travel through.

When a sound is made, the particles bunch up and spread out (called compressions and rarefactions).

A sound can be described in terms of its loudness or its pitch. The greater the amplitude of the sound wave, the louder it is. The higher the frequency of the sound wave, the higher is its pitch.
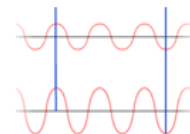
These two sound waves, for example, have the same pitch (because their wavelength/frequency is the same). However, the second wave is louder because its amplitude is greater.

Very high pitches (greater than 20,000Hz) are called ultrasound waves. Pitches less than 20Hz are called infrasound waves.

When sound waves enter the ear, they cause the ear drum to vibrate. These vibrations pass to bones in the middle ear and cause them to vibrate also. The bones in the middle ear are connected to the cochlea which vibrates in turn and converts sound energy in to electrical energy.
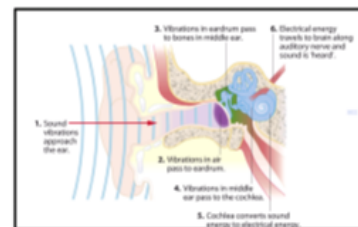
The electrical energy passes along the auditory nerve to the brain and the brain interprets this as a sound. As people get older, the bones in the middle ear begin to fuse. This means that louder sounds are needed to make them vibrate and explains why people struggle with hearing as they get older. Hearing aids can help people who have hearing problems by amplifying sounds and re-transmitting them. Some hearing aids bypass the auditory canal entirely!

Science

1.1 El español global

¿De dónde eres?	*Where are you from?*
¿De dónde es?	*Where is he/she from?*
Argentina	*Argentina*
Chile	*Chile*
Colombia	*Colombia*
Cuba	*Cuba*
España	*Spain*
Estados Unidos	*United States*
Guinea Ecuatorial	*Equatorial Guinea*
la Isla de Pascua	*Easter Island*
las Islas Baleares	*Balearic Islands*
las Islas Canarias	*Canary Islands*
las Islas Filipinas	*Philippines*
Perú	*Peru*
República Dominicana	*Dominican Republic*
la capital	*capital*
el destino	*destination*
famoso/a	*famous*
hispanohablante	*Spanish-speaking*
histórico/a	*historic*
el mapa	*map*
el monumento	*monument*
el mundo	*world*
el país	*country*

1.2 ¿Qué tal?

¿Cómo estás?	*How are you?*
¿Qué tal?	*How are you?*
bien	*well*
fantástico/a	*fantastic*
fatal	*awful*
fenomenal	*great, excellent*
mal	*bad/badly*
regular	*so-so*
¿Y tú?	*And you?*
¡hola!	*Hello!*
Buenos días	*Good morning/ day*
Buenas tardes	*Good afternoon*
¡Adiós!	*Goodbye!*
¡Hasta luego! /¡Hasta la vista!	*See you later!*
el alfabeto	*alphabet*
escribir	*to write*
llamarse	*to be called*

1.3 Mi carnet de identidad

¿Cuántos años tienes?	*How old are you?*		
uno	*1*	veintidós	*22*
dos	*2*	veintitrés	*23*
tres	*3*	veinticuatro	*24*
cuatro	*4*		
cinco	*5*	veinticinco	*25*
seis	*6*	veintiséis	*26*
siete	*7*	veintisiete	*27*
ocho	*8*	veintiocho	*28*
nueve	*9*	veintinueve	*29*
diez	*10*	treinta	*30*
once	*11*	treinta y uno	*31*
doce	*12*	el/la amigo/a	*friend*
trece	*13*	el apellido	*surname*
catorce	*14*	el carnet de identidad	*ID card*
quince	*15*		
dieciséis	*16*	la edad	*age*
diecisiete	*17*	el lugar de nacimiento	*birthplace*
dieciocho	*18*		
diecinueve	*19*		
veinte	*20*	el nombre	*name*

1.4 ¡…y que cumplas muchos más!

lunes	*Monday*	junio	*June*		
martes	*Tuesday*	julio	*July*		
miércoles	*Wednesday*	agosto	*August*		
jueves	*Thursday*	septiembre	*September*	el cumpleaños	*birthday*
viernes	*Friday*	octubre	*October*		
sábado	*Saturday*	noviembre	*November*	la fecha	*date*
domingo	*Sunday*	diciembre	*December*	el mes	*month*
enero	*January*	¿Cuándo es tu cumpleaños?	*When is your birthday?*	el primero	*the first*
febrero	*February*			la semana	*week*
marzo	*March*			el uno	*the first*
abril	*April*				
mayo	*May*	el año	*year*		
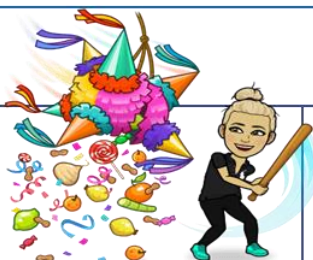
1.5 Mis preferencias

amarillo/a	*yellow*		
azul	*blue*		
blanco/a	*white*	verde	*green*
claro/a	*light*	detesto	*I detest*
gris	*grey*	me encanta	*I love*
marrón	*brown*	me gusta (mucho)	*I like (a lot)*
morado/a	*purple*	mi color favorito es…	*My favorite colour is...*
naranja	*orange*		
negro/a	*black*	no me gusta (nada)	*I don't like (at all)*
oscuro/a	*dark*		
rojo/a	*red*	odio	*I hate*
rosa	*pink*	prefiero	*I prefer*

55

1.6 ¡Tod@s a clase!

Spanish	English
hay…	there is…
el bolígrafo	pen
el cuaderno	exercise book
el estuche	pencil case
la goma	eraser
la hoja de papel	sheet of paper
el lápiz	pencil
el libro	book/textbook
la regla	ruler
el sacapuntas	pencil sharpener
las tijeras	scissors

SWAG BAG

Spanish	English
además	furthermore
o	or
pero	but
sin embargo	however
también	also
y	and

1.1 El español global

¿De dónde eres? Where are you from? ¿De dónde es? Where is he/she from?	Soy de I am from Es de He/ she is from	Colombia España Argentina México	Colombia Spain Argentina Mexico

1.2 ¿Qué tal?

¿Cómo te llamas? What is your name? ¿Cómo se llama? What is his/ her name?	Me llamo…….. My name is …… Se llama ……. He/ she is called….	¿Qué tal / Cómo estás? How are you?	Estoy	bien muy bien mal muy mal fatal fenomenal	I am well really well bad really bad terrible great!

1.3 Mi carnet de identidad

¿Cuántos años tienes? How old are you? ¿Cuántos años tiene? How old is he/she?	Tengo - I am (I have) Tienes - You are (you have) Tiene – he / she is (he/she has)	once (11) doce (12) trece (13) veinte (20) treinta (30)	años years old

1.4 ¡ … y que cumplas muchos más!

¿Cuándo es tu cumpleaños? When is your birthday?	Mi cumpleaños es el .. My birthday is the	uno (1st) dos (2nd) cinco (5th) cuatro (4th) quince (15th) dieciséis (16th) veinte (20th) treinta y uno (31st)	de	enero febrero marzo mayo …….	January February March May …..

1.5 Mis preferencias

Me encanta	I love	el rojo	(the colour) red
Me gusta (mucho)	I (really) like	el verde	(the colour) green
No me gusta (nada)	I (really) don't like	el amarillo	(the colour) yellow
Odio / detest	I hate	el azul	(the colour) blue
Prefiero	I prefer	el naranja	(the colour) orange

1.6 ¡Tod@s a clase!

¿Tienes un bolígrafo? Do you have a pen? ¿Tienes una regla? Do you have a ruler	En mi mochila In my rucksack En mi estuche In my pencil case	tengo I have no tengo I don't have	un cuaderno una regla un lápiz dos lapices cinco gomas	an exercise book a ruler a pencil 2 pencils 5 rubbers