Wadham School

A Church of England Community School

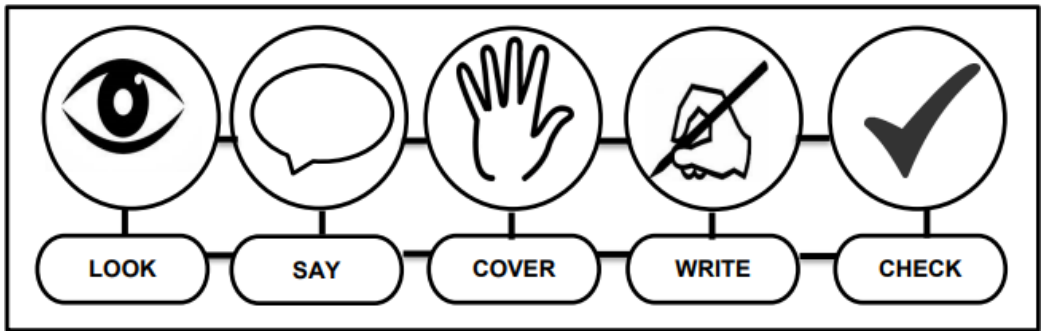
Knowledge Organisers
Year 9
Term 1 & 2
2025-2026

Name.....

Tutor group.....

"Life in all its fullness" John 10:10

Using Your Knowledge Organiser



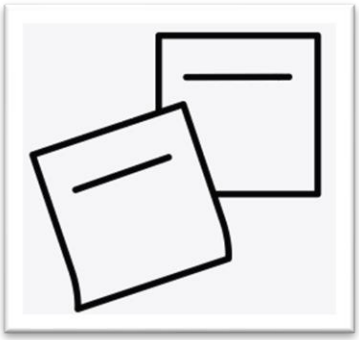
Look-Say-Cover-Write-Check

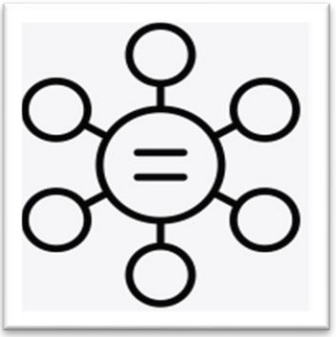
Retrieval practice using the look-say-cover-write-check technique, when done in regular small chunks, is one of the best ways you can learn relevant knowledge over time.

Working in Independent mode:

- Look at the first bullet point or sentence
- Read through it three to five times
- Cover
- Write it out exactly
- Remove and check what you wrote and tick if correct
- Repeat
- When you get it 100% right, move on to the next chunk of information

Flash Cards	**Self Quizing**	**Mind maps**
Make flast cards with the definition on one side and key word on the other.	Write quizzes with answers to test yourself in the future.	Create mindmaps linking key informattion you need to remember.





LIBRARY INFORMATION

Library Days

MON - MINDFULNESS & COLOURING

WED-YEAR 7 ONLY BOOK CLUB

FRI - PUZZLE CLUB & LEGO

BORROWING A BOOK

- YOU MAY BORROW ONE BOOK AT A TIME
- YOUR BOOK CAN BE RETURNED DURING SOCIAL TIME OR LIBRARY TUTOR TIME
- BOOKS CAN BE LEFT IN THE YELLOW BOX IF THERE ARE NO STAFF
- PLEASE MAKE SURE YOU RENEW YOUR BOOK EVERY TWO WEEKS IF YOU'RE NOT FINISHED YET!
- PLEASE LET MRS GEORGE KNOW IF A BOOK GETS LOST OF DAMAGED

IF YOU LOSE A BOOK, DONT PANIC! IT CAN BE REPLACED WITH ANOTHER BOOK OR WITH A SMALL CHARGE

ACCESSIT

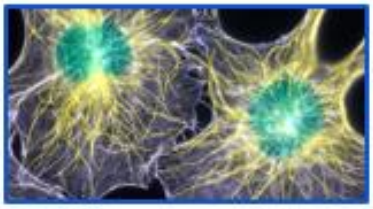
DID YOU KNOW THE LIBRARY CATALOGUE CAN BE FOUND ONLINE? THERE IS A LINK ON THE DESKTOP OF ALL THE COMPUTERS AND ON TEAMS.
(THE LOG IN IS THE SAME AS YOUR SCHOOL EMAIL AND PASSWORD)

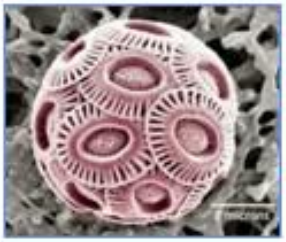
THE LIBRARY IS OPEN TO ALL.
IT IS A SPACE WHERE YOU WILL ALWAYS FIND AN ADULT AT BREAK OR LUNCH.
THERE ARE TABLETS IN THE LIBRARY THAT CAN BE USED FOR COMPLETION OF HOMEWORK, PLEASE ASK MRS GEORGE FOR ACCESS

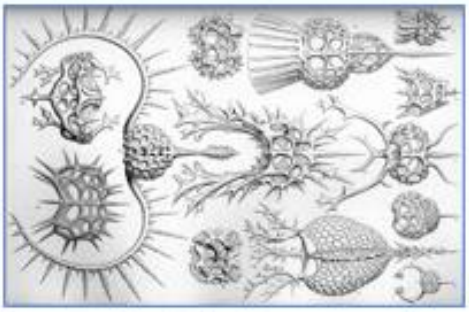
Art

ART Knowledge Organiser

Science In Art







Keywords

Abstract Stem cell **Mark making** Tone **Micro Organism** Ecology **Microscopic** Line **Fungi** Shape **Bacteria** Mixed Media

Mark Making

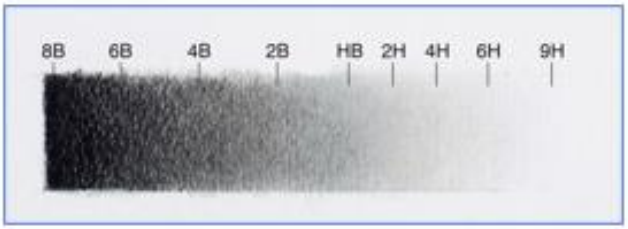
Mark making describes the different lines, dots, marks, patterns, and textures we create in an artwork. It can be loose and gestural or controlled and neat. It can apply to any material used on any surface: paint on canvas, ink or pencil on paper, a scratched mark on plaster, a digital paint tool on a screen, a tattooed mark on skin…even a sound can be a form of mark making. Artists use gesture to express their feeling and emotions in response to something seen or something felt – or gestural qualities can be used to create a purely abstract composition.

Mixed Media

Mixed media art refers to a visual art form that combines a variety of materials in a single artwork. This media can be layered and applied using different methods and they can produce a range of interesting outcomes. They can be realistic and abstract.

Tone

Tone describes the lightness or darkness of a surface. A gradient is a series of tones from lightest to darkest. An artwork can have many different tones.



ART Knowledge Organiser

Science In Art

Robert Hooke **Antonie van Leeuwenhoek**

Who were the first scientists to discover microorganisms?

Two men are credited today with the discovery of microorganisms using primitive microscopes: **Robert Hooke** who described the fruiting structures of molds in 1665 and **Antonie van Leeuwenhoek** who is credited with the discovery of bacteria in 1676.

What is a microorganism?

It is a microscopic organism, especially a bacterium, virus, or fungus.

Ernst Haeckel

German biologist and artist **Ernst Haeckel** dedicated his life studying far flung flora and fauna, **drawing** each of their peculiar forms with an immense scientific detail. **Haeckel** made hundreds of such drawings during his lifetime, works which were used to explain his biological discoveries to a wide audience.

Rogan Brown

Rogan Brown's work is inspired by the tradition of scientific illustration and model making. He creates detailed observational drawings based on patterns and motifs found in nature. These are transformed into incredibly detailed, delicate relief sculptures made from layer upon layer of either hand or laser cut paper. He makes multiple visual references - cells, microbes, fossils, insects, cloud formations, the organs and parts of the human body.

Why is Science and Art more closely related than you think?

Both science and art are human attempts to understand and describe the world around us. Scientists do experiments over and over, trying to find out about a new discovery. Artists often start with a new vision, then work through experiments in which they explore how best to get the message across to an audience.

Beliefs and Worldviews – Year 9 Term 1& 2

Topic 1: Buddhism – Beliefs and Practices

1	1	**Siddhartha Gautama**	The first Buddha - Founder of Buddhism
	2	**Four Sights**	4 sights that opened Siddhartha's eyes to suffering: Old Age, Sickness, Death, Ascetic (Holy Man)
	3	**Ascetic**	Holy Man, giving up comfort seeking enlightenment
	4	**Middle Way**	You should not have too much or too little
2	5	**Four Noble Truths**	Explain the cause of suffering and the plan to overcome it
		Dukkha	Suffering or Dissatisfaction
3	6	**Eightfold Path**	The way a Buddhist should live - a moral and right life
	7	**Right Speech**	Words should be kind and helpful, no swearing
	8	**Right Action**	Act in the right way: no stealing, fighting, cheating etc.
	9	**Right Concentration**	Train the mind through meditation towards enlightenment
	10	**Right Thought**	Think about others in an unselfish way
4	11	**Rebirth**	'*Life force*' is passed on to another person
	12	**Meditation**	Calming and emptying your mind of distraction
	13	**Karma**	Consequences for actions
	14	**Enlightenment**	Reaching understand about life and suffering
5	15	**Vesak**	Remembers Buddha's birth, Enlightenment & death
	16	**Light**	Lamps remind Buddhists of the light of Buddha's teaching
	17	**Songkran**	Buddhist new year - A chance for a clean start
	18	**Water**	Symbolises a fresh start. Fish may be released
6	19	**Anatta**	No Soul
	20	**Anicca**	'Impermanence' – Everything changes/ nothing lasts for ever
	21	**Mandala**	Sand art used to meditate on Anicca

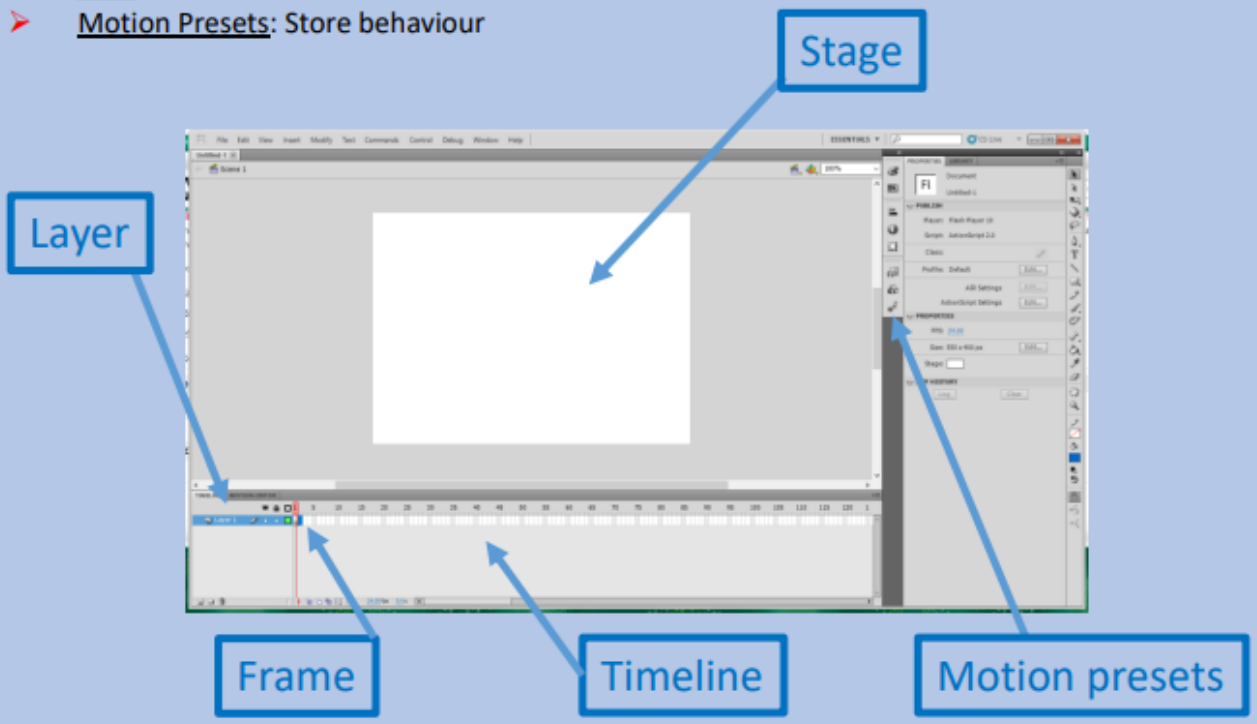
Topic 2: Philosophy

1	1	**Plato's Cave**	Analogy used to show we can't always relay our senses
	2	**Philosophy**	'Love' of 'Wisdom' – Philosophy is aiming to be wise
2	3	**Empiricism**	Using evidence to prove knowledge, beliefs and ideas
	4	**A Posteriori**	Knowledge known only after experience
	5	**Rationalism**	Reason and Logic provide knowledge
	6	**Logic**	Using reason and common sense to solve problems
	7	**A Priori**	Knowledge known before experience
3	9	**Dualism**	People are two parts: physical body and spiritual soul
	10	**Materialism**	People are just physical bodies (there is no soul)
4	11	**Problem of Evil**	
	12	**Epicurus**	Philosopher who wrote about Problem of Evil
	13	**Free Will**	God created humans with freedom to choose how to act
	14	**Free-Will defence**	Defence against the Problem of Evil: Suffering is due to human choices, it's not God's fault
5	15	**Cosmological Argument**	Argument that seeks to prove God's existence based on the need for the universe to have a creator
	16	**Cause**	the reason something came into being
	17	**Eternal**	beyond time
	18	**Spiritual**	non-physical
6	19	**Design Argument**	Argument that seeks to prove Gods existence based on the Universe showing elements of complex designer, therefore it needs a designer
	20	**Analogy**	Explaining something by describing it as similar to something else

Computing

Key Definitions for Computer Engineer:

- Animation – A series of images put together so when played look like they are moving
- Tween – When two separate frames are joined together with an animation that creates a movement between the two
- Frame – An individual piece of time in an animation
- Timeline – All the animations frames together
- Stage – Where we build our animation
- Layer – A section of the animation. We build animations on different layers so we can change each layer without affecting the others
- Tool – Something we use in order to create our animation
- Motion Presets: Store behaviour



	Keywords	Key information
1	Fibre	Fibres are hair like strands that are natural or synthetic.
2	Natural Fibres	Natural fibres come from plant, animal or insect sources.
3	Synthetic Fibres	Synthetic fibres are man-made.
4	Yarn	Fibres are spun to create long threads called yarns.
5	Fabric	Fabric is produced by yarns which are knitted or woven together.
6	Scales	Wool fibres have scales. Heat and agitation will cause these scales to shrink and interlock together to form a piece of fabric.
7	Shrink	Become smaller in size.
8	Felting needle	A tool with small barbs on the surface.
9	Barbs	A rough surface on a felting needle which pulls wool fibres downwards and encourages them to interlock. The more barbs a tool has, the quicker fibres should bond together.
10	Bonded Fabric	Are not woven or knitted. Made from fibres rather than yarns.
11	Surface Design	The art that is applied to surfaces, such as fabric, wallpaper, home décor and clothes.
12	Placement	The location of a design on an item.
13	Motif	A significant icon or recurring idea in a design.
14	Cool Colours	Blues, Greens and Purples. (Think Water!)
15	Warm Colours	Pinks, Reds and Oranges. (Think Fire!)
16	Complementary Colours	Colours which are opposite each other on the colour wheel. Orange and Blue; Green and Red; Yellow and Purple.
17	Analogues Colours	Colours that are next to each other on the colour wheel. Green, yellow and orange are an example of an analogues colour scheme.
18	Monochrome	A colour scheme that incorporates the main colour and only hues, tones, shades and tints of that one colour.
19	Embellishment	Decorative detail which is added for a more interesting aesthetic appeal. Sequins are an example of an embellishment.
20	Embroidery	Using stitches to form a decorative design.

English

ANALYSIS	
Argument	The writer presents [topic] to…
Neat evidence	The phrase '…' shows…
Additional	Additionally, the phrase '…' adds to…
Language	The imagery suggests…
Your evaluation	A reader may also understand…
Structure and form	Structurally, the… tone emphasises…
Intentions of writer	The writer's intentions may have been to…
Society and context	Contextually, the writer may be reflecting…

POETIC POEMS	Definition
Personification	Giving something human characteristics
Oxymoron	Contradictory phrase
Enjambment	Continuing a line of poetry
Tone	Mood or atmosphere
Imagery	Descriptive language
Contrast	Very different things put together
Perspective	Viewpoint
Onomatopoeia	Words that sound like the thing
Extended	Carrying on
Metaphor	Saying something is something else
Simile	Saying something is like something else

A PERSUADER	Definition
Alliteration	Repeating same sound at starts of words
Points	Clear reasons to add to your argument
Exaggeration	Overstating
Repetition	Saying the same thing over and over
Statistics	Using numbers to represent facts
Unique ideas	Unusual or ways of approaching an issue
Anecdote	A short story used to make a point
Direct address	Talking to the audience
Emotive language	Appealing to people's feelings
Rhetorical questions	Questions not intended to be answered.

Dystopian Fiction

Key words	Definition
Dystopia	Comes from the Ancient Greek "bad" and "place to live" respectively.
Science fiction	A type of fiction that deals with science or technology of the future.
Utopia	A community or society possessing highly desirable or near perfect qualities.
Protagonist	The main character.
Patriarchal society	A society which is controlled by men.
Objectification	The act of treating people as an object
Indoctrination	The process of teaching a person or group to accept a set of beliefs
First person perspective	- written from 'I'.
Third person perspective	- written about 'he', 'she' or 'they'.
Oppression	Prolonged cruel or unjust treatment or exercise of authority.
Allegory	A story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one.
Passivity	The acceptance of what happens, without active response or resistance

English

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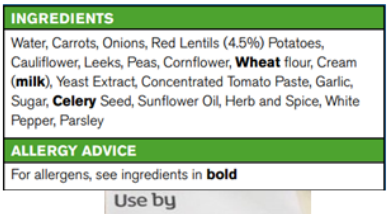
Lord of the Flies

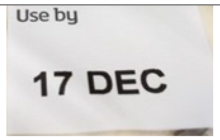
Key words	Definition
Subservience	Willing to follow orders.
Pathetic fallacy	When the weather reflects the tone or the mood.
Servitude	Obeying someone unwillingly.
Direct address	When the writer speaks to the reader.
Microcosm	A community, place or situation that encapsulates the characteristics of something larger
Protagonist	The main character.
Subservience	Willing to follow orders.
antagonist	A person who actively opposes or is hostile to someone or something
Civilisation	A complex human society characterised by features like urban settlements, advanced social structures, and sophisticated systems of communication
Savagery	The descent into primal, uncontrolled behaviour, marked by violence, cruelty, and a loss of civilized values.

Food

<table>
<tr><td>1</td><td>Food choice</td><td>People choose to eat different food for many different reasons:
•personal choice / ethics – environmental, animal welfare, global dimensions;
•health/medical – including intolerance and allergy
•religion – review the different dietary rules for some religions</td></tr>
<tr><td>2</td><td>Modifying a recipe</td><td>To change/ adapt a recipe due to:
Costing, the needs of different groups of people e.g. vegetarian, an intolerance or allergy, reducing the energy content, improving the nutritional value/balance, e.g. reducing salt content, ingredients are unavailable, to cater for like and dislikes.</td></tr>
<tr><td>3</td><td>Special dietary needs</td><td>Adverse reactions to food:
Food intolerances (lactose intolerance, gluten intolerance) can make someone feel ill. Usually caused by the digestive system
Food allergies (eggs; cow's milk and milk products; nuts; shellfish; fish) can make someone feel ill. Some can cause a life-threatening reaction (called anaphylaxis). Usually caused by the immune system.
The presence of these Allergens must be displayed on packaging: Celery (and celeriac), cereals containing gluten, crustaceans, eggs, fish, lupin, Milk, Molluscs, Mustard, Nuts, Peanuts, Sesame, Soybeans, Sulphur dioxide</td></tr>
<tr><td>4</td><td>Religious cultural, ethical beliefs</td><td>People choose to eat or avoid certain foods depending on their religious belief.
Kosher animals - completely split hoof and chew cud, e.g. cows, goat and sheep
Halal method – animals killed using a knife to the throat
<table>
<tr><th>Religion</th><th>Pork</th><th>Beef</th><th>Lamb</th><th>Chicken</th><th>Fish</th></tr>
<tr><td>Islam</td><td>x</td><td>Halal only</td><td>Halal only</td><td>Halal only</td><td>✓</td></tr>
<tr><td>Hinduism</td><td>x</td><td>x</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Judaism</td><td>x</td><td>Kosher only</td><td>Kosher only</td><td>Kosher only</td><td>✓</td></tr>
<tr><td>Sikhism</td><td>x</td><td>x</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Buddhism (strict)</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr>
<tr><td>Seventh-day Adventist Church</td><td>x</td><td>x</td><td>x</td><td>✓</td><td>✓</td></tr>
<tr><td>Rastafarianism</td><td>x</td><td>x</td><td>x</td><td>x</td><td>x</td></tr>
</table></td></tr>
<tr><td>5</td><td>Vegetarian and Vegans</td><td>Vegetarians don't eat meat for a range of health, environmental, ethical, religious or economic reasons. There are many different types of vegetarianism. A well-planned vegetarian diet can meet nutritional needs during all stages of life.
Meat alternatives - a food product made from vegetarian or vegan ingredients, eaten as a replacement for meat; nuts; seeds; pulses, e.g. beans, lentils; mycoprotein; soya products
<table>
<tr><th></th><th>Fruit</th><th>Veggies</th><th>dairy</th><th>eggs</th><th>Seafood</th></tr>
<tr><td>Vegetarian</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr>
<tr><td>Fruitarian</td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Vegan</td><td>✓</td><td>✓</td><td></td><td></td><td></td></tr>
<tr><td>Lacto – vegetarian</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>Ovo vegetarian</td><td>✓</td><td>✓</td><td></td><td>✓</td><td></td></tr>
<tr><td>Lacto – ovo vegetarian</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr>
<tr><td>Pescatarian</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
</table></td></tr>
</table>

Food

<table>
<tr><td>6</td><td>Food waste</td><td>Foods deteriorate when killed or harvested. Preservation techniques extend the shelf life of products: freezing, additives, processed foods (strawberries into jam), dehydration (reduces the water), pasteurisation (killing food spoilage organisms and pathogenic organisms), packaging
Common foods wasted: Bread and bread products, fruit and vegetables, starchy foods, meat, chicken, fish, milk,
Reasons for food waste: incorrect storage and packaging, buying large quantities, portion size too big; leftovers thrown away, impulse shopping/ offers, limited cooking skills</td></tr>
<tr><td rowspan="2">7</td><td>Cost and availability</td><td>Budgeting (save money). Ways to spend money wisely on food. Examples can include: eating the seasons; stocking up on food with a long shelf-life; plan meals and write a shopping list; cooking using one pot; making fake-aways rather than buying takeaways; using leftovers; replacing branded items with cheaper items; comparing prices and shop around to find the cheapest items; growing your own food.</td></tr>
<tr><td>Costing a recipe</td><td>Using a costing chart can help to calculate the cost per portion
<table>
<tr><th>Ingredient name</th><th>Quantity purchased</th><th>Cost of quantity purchased (£)</th><th>Quantity needed in recipe</th><th>Cost of ingredient used in recipe (£)</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td rowspan="4">8</td><td>Food labelling</td><td>Information is provided on food and drink packaging to help consumers choose between different products, brands and flavours.</td></tr>
<tr><td>Legally required information (Mandatory)
<table>
<tr><td colspan="3">NUTRITION
When heated according to instructions</td></tr>
<tr><td>Typical values</td><td>Per 100g</td><td>Each pack (390g**)</td></tr>
<tr><td>Energy</td><td>457kJ 109kcal</td><td>1781kJ 424kcal</td></tr>
<tr><td>Fat</td><td>3.9g</td><td>15.2g</td></tr>
<tr><td>of which saturates</td><td>1.9g</td><td>7.5g</td></tr>
<tr><td>Carbohydrate</td><td>12.1g</td><td>47.1g</td></tr>
<tr><td>of which sugars</td><td>1.6g</td><td>6.2g</td></tr>
<tr><td>Fibre</td><td>1.1g</td><td>4.2g</td></tr>
<tr><td>Protein</td><td>5.8g</td><td>22.6g</td></tr>
<tr><td>Salt</td><td>0.6g</td><td>2.2g</td></tr>
</table></td><td>· Name of food or drink.
· List of ingredients (including additives and allergens)
· Weight or volume.
· Date mark (Best-before and use-by).
· Storage and preparation conditions.
· Name and address of the manufacturer, packer or seller.
· Country of origin and place of provenance.
· Nutrition information.
 


</td></tr>
<tr><td>Voluntary in-formation</td><td>Cooking instructions, serving suggestions, price; customer guarantee; photograph or image of the food; bar code, environmental information (recycling), vegetarian, vegan, organic


</td></tr>
<tr><td>Nutrition and health claims:</td><td>These are controlled by European regulations. Claims on a food or drink should have been authorised and listed on the European register of claims and have met certain conditions.</td></tr>
<tr><td>9</td><td>Food availability and food provenance</td><td>Red Tractor
The British Lion mark



Food certification and assurance schemes guarantee defined standards of food safety or animal welfare.
Traceability – identify the movement of a food product and its ingredients through all steps in the supply chain
Sustainability-avoid damaging or wasting natural resources.
Food security - access to sufficient safe and nutritious food
Fairtrade - help producers in developing countries achieve sustainable and equitable trade</td></tr>
</table>

Year 9 French Term 1: En ville (1)

Quel temps fait-il?	*What is the weather like?*
1. Il fait beau.	*The weather is good.*
2. Il fait mauvais.	*The weather is bad.*
3. Il fait chaud.	*It's hot.*
4. Il fait froid.	*It's cold.*
5. Il y a du soleil.	*It's sunny.*
6. Il y a du vent.	*It's windy.*
7. Il neige.	*It's snowing/it snows.*
8. Il pleut.	*It's raining/it rains.*
9. En éte	*In summer*
10. En hiver	*In winter*

Où habites-tu?	*Where do you live?*
11. un village	*a village*
12. une ville	*a town*
13. une grande ville	*a city*
14. au bord de la mer	*by the sea*
15. à la campagne	*in the countryside*
16. à la montagne	*in the mountains*
17. en France	*in France*
18. en Suisse	*in Switzerland*
19. au Canada	*in Canada*
20. en Angleterre.	*in England*

'habiter'	*'to live'*
21. J'habite	*I live*
22. Tu habites	*You live*
23. Il habite	*He lives*
24. Elle habite	*She lives*
25. Nous habitons	*We live*
26. Vous habitez	*You (plural) live*
27. Ils habitent	*They (masc.) live*
28. Elles habitent	*They (fem.) live*

C'est comment?	*What is it like?*
29. C'est…	*It's…*
30. tranquille	*peaceful*
31. calme	*calm*
32. animé	*lively*
33. joli	*pretty*
34. ennuyeux	*boring*
35. nul	*rubbish*
36. bruyant	*noisy*

Qu'est-ce qu'il y a dans ta ville?	*What is there in your town?*
37. Il y a…	*There is/are…*
38. Il n'y a pas de…	*There isn't/aren't…*
39. un centre de loisirs	*a leisure centre*
40. un centre commercial	*a shopping centre*
41. un château	*a castle*
42. un marché	*a market*
43. un musée	*a museum*
44. une mosquée	*a mosque*
45. une patinoire	*an ice rink*
46. une piscine	*a swimming pool*
47. une église	*a church*
48. des magasins	*some shops*
49. des bâtiments	*some buildings*
50. des lacs	*some lakes*
51. des touristes	*some tourists*
52. des forêts	*some forests*
53. des voitures	*some cars*

Qu'est-ce qu'on peut faire dans ta région?	*What can you do in your region?*
54. On peut / On ne peut pas…	*You can / you can't…*
55. manger du fastfood / des crêpes	*eat fast food / crepes*
56. visiter des monuments / des grottes	*visit monuments / caves*
57. faire du ski / des randonnées / les magasins / du canoë-kayak	*do skiing / hiking / shopping / kayaking*
58. aller au cinéma / à la plage	*go to the cinema / beach*

Year 9 French Term 2: En ville (2)

Les directions	*Directions*
1. Pour aller au / à la / aux…?	*How do I get to the…*
2. Allez	*Go*
3. Tournez	*Turn*
4. Prenez	*Take*
5. tout droit	*straight ahead*
6. à gauche	*left*
7. à droite	*right*
8. la première rue	*the first road*
9. la deuxième rue	*the second road*
10. puis	*then*

Tu veux venir?	*Do you want to come?*
11. Je veux bien!	*I want to!*
12. Je ne veux pas.	*I don't want to.*
13. Rendez-vous à quelle heure?	*When are we meeting?*
14. aujourd'hui	*today*
15. ce matin	*this morning*
16. ce soir	*this evening*
17. ce weekend	*this weekend*
18. demain	*tomorrow*
19. à six heures	*at 6 o'clock*
20. à trois heures et demie.	*at half past 3*

Les chiffres (*Numbers*)					
un	*1*	**onze**	*11*	**vingt-et-un**	*21*
deux	*2*	**douze**	*12*	**vingt-deux**	*22*
trois	*3*	**treize**	*13*	**trente**	*30*
quatre	*4*	**quatorze**	*14*	**quarante**	*40*
cinq	*5*	**quinze**	*15*	**cinquante**	*50*
six	*6*	**seize**	*16*	**soixante**	*60*
sept	*7*	**dix-sept**	*17*	**soixante-dix**	*70*
huit	*8*	**dix-huit**	*18*	**quatre-vingt**	*80*
neuf	*9*	**dix-neuf**	*19*	**quatre-vingt-dix**	*90*
dix	*10*	**vingt**	*20*	**cent**	*100*

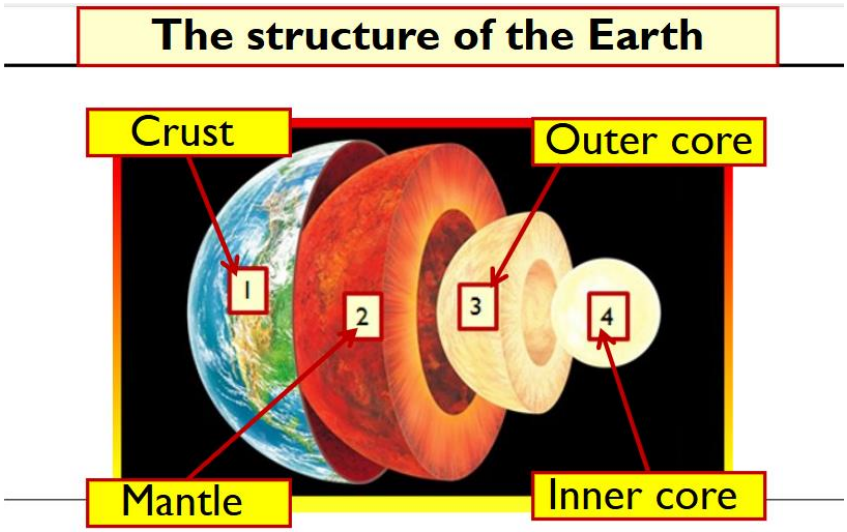
Vous désirez?	*What would you like?*
21. Je voudrais…	*I would like…*
22. un Orangina	*an Orangina*
23. un café crème	*a milky coffee*
24. un chocolat chaud	*a hot chocolate*
25. un thé au lait	*a tea with milk*
26. un jus d'orange	*an orange juice*
27. un coca (light)	*a (diet) coke*
28. un eau minérale	*mineral water*
29. un diabolo menthe	*a fizzy mint drink*
30. un croquemonsieur	*a toasted ham and cheese sandwich*
31. un sandwich au fromage	*a cheese sandwich*
32. une crêpe	*a crepe*
33. une glace à la fraise	*a strawberry ice cream*
34. des frites	*some chips*
35. C'est combien?	*How much is it?*
36. Ça fait…	*It comes to…*

Qu'est-ce que tu vas faire à Paris?	*What are you going to do in Paris?*
37. visiter la cathédrale	*visit the cathedral*
38. voir la tour Eiffel	*see the Eiffel Tower*
39. aller au musée du Louvre	*go to the Louvre museum*
40. faire une balade en bateau	*go on a boat trip*
41. acheter des souvenirs	*buy souvenirs*
42. prendre des photos	*take photos*

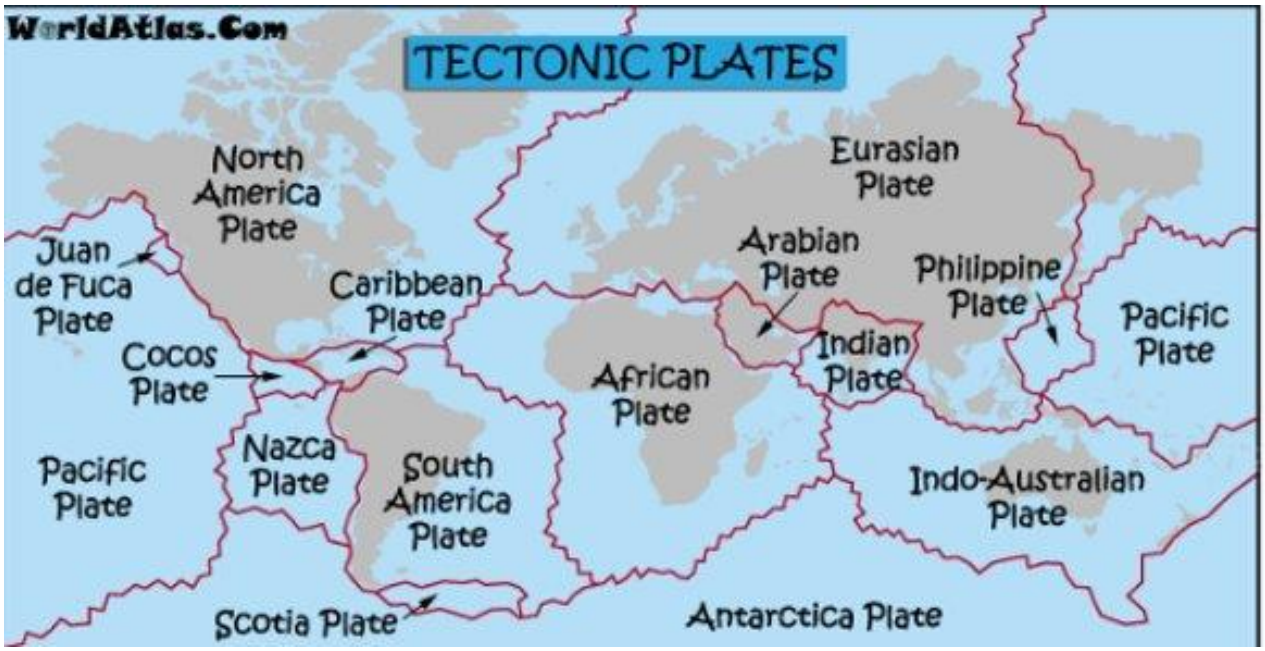
'aller'	*'to go'*
43. Je vais	*I go/am going*
44. Tu vas	*You go/are going*
45. Il va	*He goes/is going*
46. Elle va	*She goes/is going*
47. Nous allons	*We go/are going*
48. Vous allez	*You (plural) go/are going*
49. Ils vont	*They (masc.) go/are going*
50. Elles vont	*They (fem.) go/are going*

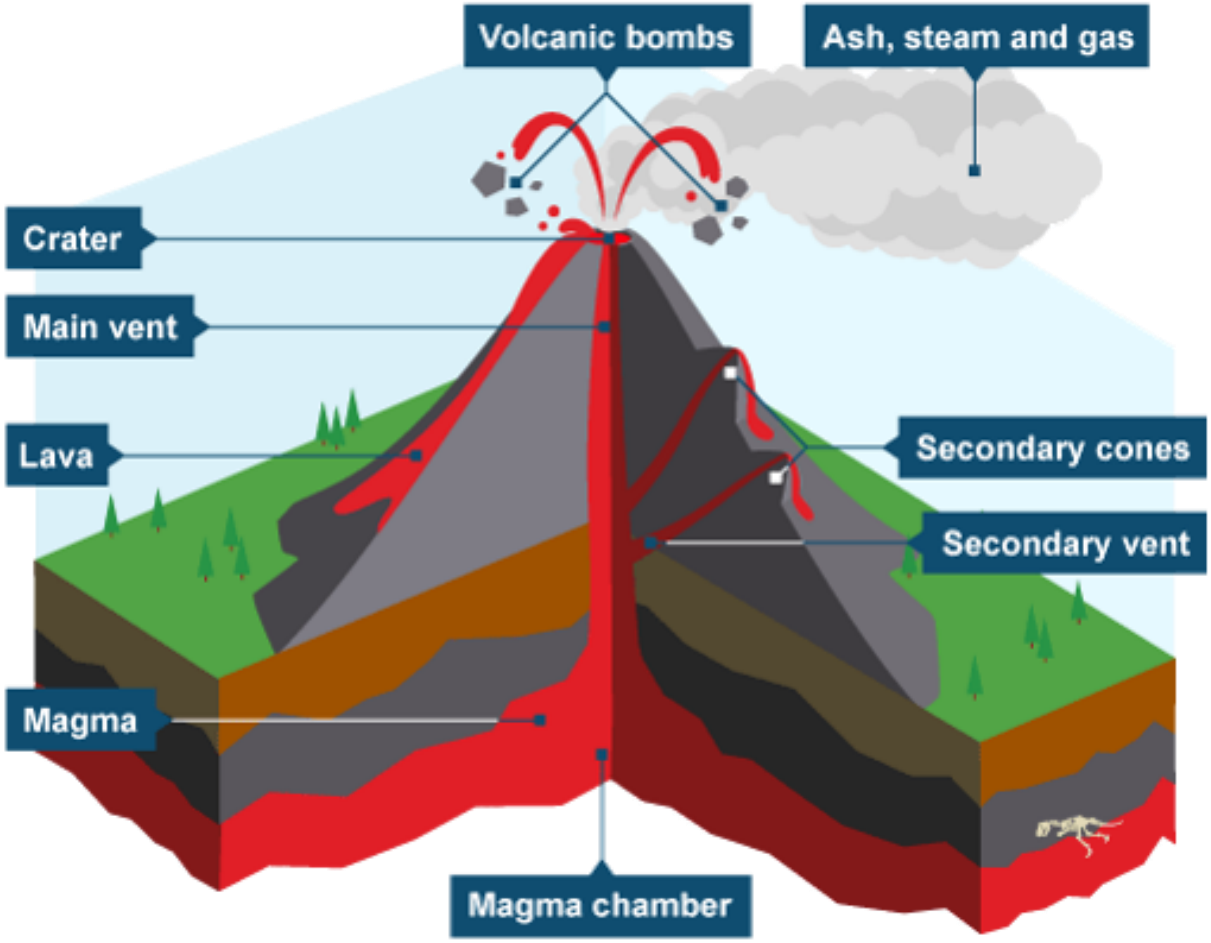
Geography

Natural hazard	A natural hazard is a natural event (e.g. volcanic eruption) that has the potential to threaten both life and property.
Disaster	When a natural hazard (e.g. earthquake) has a significant impact on peoples lives and property.
Vulnerable population	A high risk of exposure to hazards combined with an inability to cope e.g. people iving in an LIC country which frequently experiences earthquakes.
Tectonic Hazards	Hazards formed by the movement of the earth's plates.
Climatic Hazards	Hazards form by the weather.
Geomorphic Hazards	Hazards formed on the land surface or linked to rocks.
Extinct Volcano	A volcano which has not had an eruption for at least 10,000 years and is not expected to erupt again in a comparable time scale of the future.
Dormant Volcano	An active volcano that is not erupting but supposed to erupt again.
Convection Currents	Caused by the very hot material at the deepest part of the mantle rising, then cooling, sinking again and then heating, rising and repeating the cycle over and over.
Mantle	Part of the earth's crust between the core and the crust.
	There are three main types of plate boundaries that each have different impacts on the surface of the earth. There are 3 main types of plate boundary. 1.Destructive — Plates moving together. Causes: Volcanoes and Earthquakes 2.Constructive — Plates moving apart. Causes: New land 3.Conservative — Plates moving alongside each other. Causes: Earthquakes



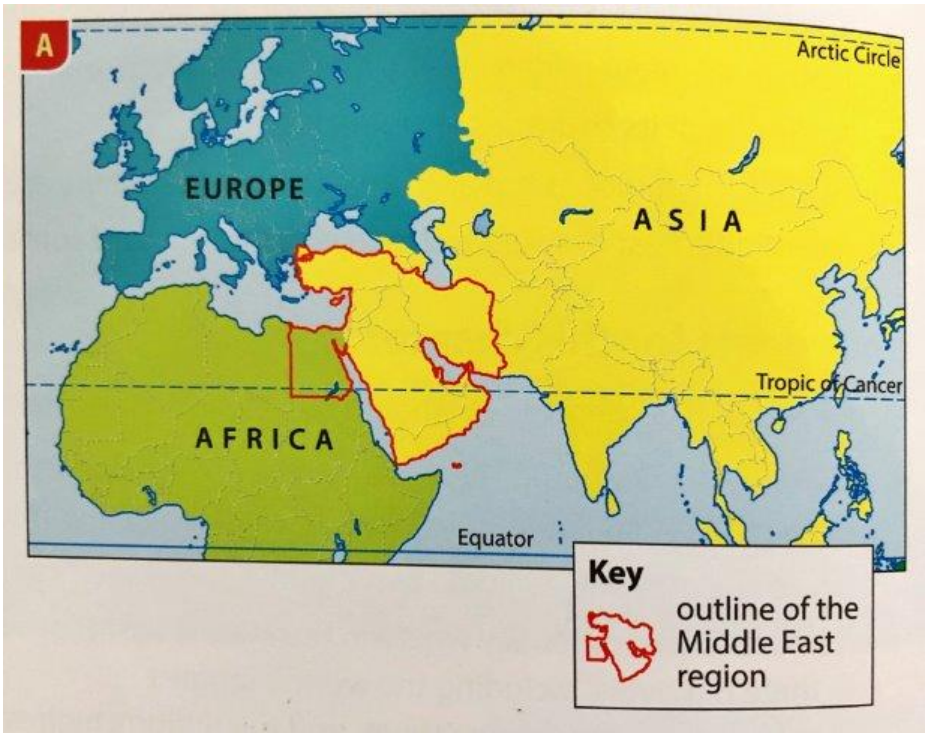
Geography

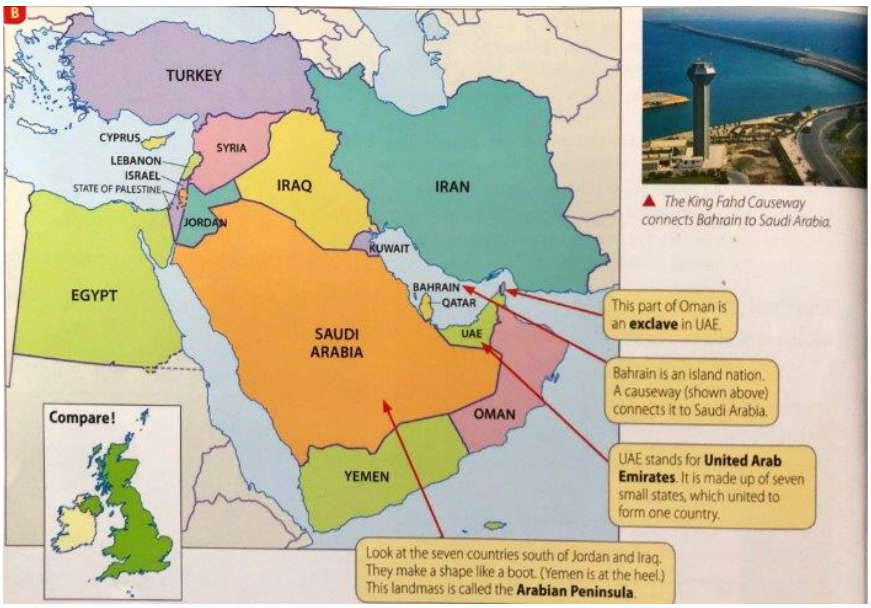

WorldAtlas.Com
TECTONIC PLATES
North America Plate
Eurasian Plate
Juan de Fuca Plate
Caribbean Plate
Arabian Plate
Philippine Plate
Pacific Plate
Cocos Plate
Indian Plate
African Plate
Nazca Plate
South America Plate
Pacific Plate
Indo-Australian Plate
Scotia Plate
Antarctica Plate


Volcanic bombs
Ash, steam and gas
Crater
Main vent
Lava
Secondary cones
Secondary vent
Magma
Magma chamber

Geography

Topography	The arrangement ofthe natural features of the land. Thisincludes the height of the land. (flatland or mountains)
Densely populated	Are areas which have large numbers of people per km2.
Sparsely populated	Areas which have small numbers of people per km2 .
Export	To send goods to another country for sale.
Economic	Relating to money and where it comes from.





Year 9 German Term 1: Meine Stadt (1)

Wie ist das Wetter?	*What is the weather like?*
1. Es ist wolkig.	*It is cloudy.*
2. Es ist neblig.	*It is foggy.*
3. Es ist heiß.	*It's hot.*
4. Es ist kalt.	*It's cold.*
5. Es ist sonnig.	*It's sunny.*
6. Es ist windig.	*It's windy.*
7. Es schneit.	*It's snowing/it snows.*
8. Es regnet.	*It's raining/it rains.*
9. Im Sommer	*In summer*
10. Im Winter	*In winter*

Wo wohnst du?	*Where do you live?*
11. in einem Dorf	*in a village*
12. in einer Stadt	*in a town*
13. in einer Großstadt.	*in a city*
14. auf dem Land	*in the countryside*
15. in die Berge	*in the mountains*
16. an die Küste	*on the coast*
17. in Deutschland	*in Germany*
18. in die Schweiz	*in Switzerland*
19. in Österreich	*in Austria*
20. in England	*in England*

'wohnen'	*'to live'*
21. Ich wohne	*I live*
22. Du wohnst	*You live*
23. Er wohnt	*He lives*
24. Sie wohnt	*She lives*
25. Wir wohnen	*We live*
26. Ihr wohnt	*You (plural) live*
27. Sie wohnen	*They live*
28. Sie wohnen	*You (formal) live*

Wie ist deine Stadt?	*What is your town like?*
29. Es ist…	*It's…*
30. ruhig	*quiet*
31. toll	*great*
32. schön	*pretty*
33. schrecklich	*terrible*
34. langweilig	*boring*
35. laut	*rubbish*
36. hektisch	*busy*

Qu'est-ce qu'il y a dans ta ville?	*What is there in your town?*
37. Es gibt…	*There is…*
38. Es gibt keinen/keine/kein…	*There isn't…*
39. einen Bahnhof	*a train station*
40. einen Imbiss	*a snack bar*
41. einen Park	*a park*
42. einen Marktplatz	*a market square*
43. eine Eisbahn	*an ice rink*
44. eine Kegelbahn	*a bowling alley*
45. eine Kirche	*a church*
46. ein Schloß	*a castle*
47. ein Schwimmbad	*a swimming pool*
48. ein Kino	*a cinema*
49. Autos	*cars*
50. Gebäude	*buildings*
51. Geschäfte	*shops*
52. Wälder	*forests*
53. Seen	*lakes*

Was kann man dort machen?	*What can you do there?*
54. Man kann…	*You can…*
55. Fastfood essen	*eat fast food*
56. den Markt besuchen	*visit the market*
57. einkaufen / ins Kino / an den Strand gehen	*go shopping / to the cinema / to the beach*
58. Kayak/Rad fahren	*go kayaking / cycling*

Year 9 German Term 2: Meine Stadt (2)

Die Wegbeschreibungen	*Directions*
1. Wie komme ich zum/zur…?	*How do I get to the…*
2. Geh…	*Go*
3. Nimm…	*Take*
4. geradeaus	*straight ahead*
5. (nach) links	*left*
6. (nach) rechts	*right*
7. die erste Straße	*the first road*
8. die zweite Straße	*the second road*
9. an der Ampel	*at the traffic lights*
10. an der Kreuzung	*at the crossroads*

Kommst du mit mir?	*Are you coming with me?*
11. Ich komme mit.	*I will come along.*
12. Ich komme nicht mit.	*I'm not coming along.*
13. Wann treffen wir uns?	*When are we meeting?*
14. Wo treffen wir uns?	*Where are we meeting?*
15. Wir treffen…	*We are meeting…*
16. heute Abend	*this evening*
17. dieses Wochenende	*this weekend*
18. Morgen	*tomorrow*
19. um sechs Uhr	*at 6 o'clock*
20. um halb vier	*at half past 3*

Les chiffres (*Numbers*)					
un	*1*	**onze**	*11*	**vingt-et-un**	*21*
deux	*2*	**douze**	*12*	**vingt-deux**	*22*
trois	*3*	**treize**	*13*	**trente**	*30*
quatre	*4*	**quatorze**	*14*	**quarante**	*40*
cinq	*5*	**quinze**	*15*	**cinquante**	*50*
six	*6*	**seize**	*16*	**soixante**	*60*
sept	*7*	**dix-sept**	*17*	**soixante-dix**	*70*
huit	*8*	**dix-huit**	*18*	**quatre-vingt**	*80*
neuf	*9*	**dix-neuf**	*19*	**quatre-vingt-dix**	*90*
dix	*10*	**vingt**	*20*	**cent**	*100*

Was möchten Sie?	*What would you like?*
21. Ich möchte einmal/zweimal/dreimal …	*I would like one/two/three…*
22. die Bratwurst	*fried sausage*
23. der Hamburger	*hamburger*
24. die Pizza	*pizza*
25. die Pommes	*chips*
26. der Salat	*salad*
27. das Eis	*ice cream*
28. die Cola	*cola*
29. das Mineralwasser	*mineral water*
30. der Tee	*tea*
31. das Fleisch	*meat*
32. der Ketchup	*ketchup*
33. die Mayo	*mayo*
34. der Senf	*mustard*
35. Was kostet das?	*How much is it?*
36. Das macht 8 Euros.	*That comes to 8 euros.*

Was wirst du in Berlin machen?	*What will you do in Berlin?*
37. Ich werde…	*I will…*
38. die Museen besuchen	*visit museums*
39. ins Kino gehen	*go to the cinema.*
40. Souvenirs kaufen	*buy souvenirs.*
41. Bratwurst essen	*eat fried sausage*
42. ein Fahrradtour machen	*go on a cycle tour*

'werden'	*'will/shall'*
43. Ich werde…	*I will…*
44. Du wirst…	*You will…*
45. Er wird…	*He will…*
46. Sie wird…	*She will…*
47. Wir werden…	*We will…*
48. Ihr werdet…	*You (plural) will…*
49. Sie werden…	*They will…*
50. Sie werden…	*You (formal) will…*

History

Key Word	Meaning
Alliance	An agreement between countries that benefits each of them
Allied forces	British troops and those of Britain's allies
Allied Powers	An alliance between a number of countries including Britain, France, Russia, Italy, and The USA (from 1917).
Arms Race	A competition between countries for the development and production of weapons
Blockade	A common tactic of war in which ships belonging to an enemy nation are prevented from reaching por, normally in order to damage the enemy's economy. Blockades were used to great effect by the British against Germany in the First World War.
Censorship	Censorship blocks something from being read, heard, or seen. If you've ever heard the sound of bleeping when someone is speaking on television, that's censorship. To "censor" is to review something and to choose to remove or hide parts of it that are considered unacceptable.
Central Powers	The Central Powers included Germany, Austria-Hungary, the Ottoman Empire, and Bulgaria.
Colony	Land settled by and under the control of people from another country
Conscientious objector	A conscientious objector is someone who refuses to fight in war for moral reasons. In WW1, conscientious objectors were made to take on medical roles and other "work of national importance" on the roads and land. Only a small number of conscientious objectors were exempted from service absolutely. Most were obliged to serve in non-combatant roles or faced courts martial.
Conscript	A person who is enlisted into the army whether they want to join or not.
Eastern Front	The Eastern Front during World War I was fought in Eastern Europe between Germany, Austria-Hungary, and Bulgaria on one side and Russia and Romania on the other side.
Empire	A large groups of states or colonies ruled over by a single head of state
Front line	The front line was the point at which the armies of each side met. This is where most of the fighting took place.
Kaiser	German word for emperor. Used to describe the head of unified Germany after 1871.
Militaristic	Prioritising the armed forces over other parts of society
Mobilise	Prepare and organise troops for active service
Munitions	Things needed for war, including shells, bullets, guns and uniforms
Nationalist	Believing strongly in your own country
No Man's Land	The area between the front lines of two enemy armies was called No Man's Land.
Pacifist	Someone who is against war and fighting for any reason.
Pals battalions	The Pals battalions were units in the British Army that grouped men who were friends and had enlisted together.
Patriotism	Love for your own country

History

Propaganda	Information used and distributed to present one side of an issue. Can mislead people by giving a biased or one sided view.
Schlieffen Plan	A strategy that Germany had for fighting a war on two fronts: one against France and one against Russia.
Stalemate	A situation where nobody in a conflict can win
The Balkans	Am area in South-East Europe that included Albania, Bosnia, Bulgaria, Herzegovina, Greece, Kosovo, Macedonia, Montenegro, Serbia and Turkey.
Treaty of Versailles	The Treaty between the Allies and Germany that ended World War I.
Trench foot	Trench foot is caused by prolonged exposure to a cold temperature that is usually above freezing and damp, sometimes unsanitary conditions. The condition ultimately causes skin and tissue breakdown which increases the risk of infection and increases associated morbidity and mortality.
Trench warfare	A type of land warfare where each side digs long lines of trenches for protection. Much of the western front during World War I was fought for years using trench warfare. A defensive military tactic used extensively by both sides, allowing soldiers some protection from enemy fire but also hindering troops from readily advancing and thus prolonging the war.
Trenches	The typical trench system in World War I consisted of a series of two, three, four, or more trench lines running parallel to each other and being at least 1 mile (1.6 km) in depth. Each trench was dug in a type of zigzag so that no enemy, standing at one end, could fire for more than a few yards down its length.
Western front	The region of fighting that took place in Western Europe between Germany and Austria-Hungary on one side and France, Britain, and (later) the United States on the other.

Maths: 9.01 Straight line graphs ……

Key words	
Gradient	the steepness of a line
Intercept	where two lines cross. The y-intercept: where the line meets the y-axis
Parallel	two lines that never meet with the same gradient
Co-ordinate	a set of values that show an exact position on a graph
Linear	linear graphs (straight line) - linear common difference by addition/subtraction Asymptote: a straight line that a graph will never meet
Reciprocal	a pair of numbers that multiply together to give
Perpendicular	two lines that meet at a right angle

Sparx codes for this topic	
M797, U741	Plotting straight lines
U669, U315	Equations of straight lines
U638, U862	Real-life graphs
U898	Additional higher content

Core knowledge

$y = mx + c$

The **coefficient** of x (the number in front of x) tells us the *gradient* of the line

$y = mx + c$

The value of **c** is the point at which the line crosses the y-axis. **Y intercept**

y and x are **coordinates**

The equation of a line can be rearranged. E.g.

$y = c + mx$

$c = y - mx$

Identify which coefficient you are identifying or comparing

Maths: 9.02 Forming & solving equations……

Key words	
Inequality	an inequality compares who values showing if one is greater than, less than or equal to another
Variable	a quantity that may change within the context of the problem
Rearrange	Change the order
Inverse operation	the operation that reverses the action
Substitute	replace a variable with a numerical value ! Solve: find a numerical value that satisfies an equation

Sparx codes for this topic	
U755	Solving equations one step
U325, U870, U599	Solving equations harder
U759, U738, U145, U337	Solving inequalities
U556	Substituting & changing the subject

Core knowledge

Rearranging Formulae (one step)

$x = y + z$

Rearrange to make y the subject

$y = x - z$

y → +z → x

y ← −z ← x

Using inverse operations or fact families will guide you through rearranging formulae

Rearranging can also be checked by substitution

Language of rearranging…

Make XXX the subject

Change the subject

Rearrange

Rearranging Formulae (two step)

In an equation (find x)

$4x - 3 = 9$

$+3 \quad +3$

$4x = 12$

$\div 4 \quad \div 4$

$x = 3$

In a formula (make x the subject)

$xy - s = a$

$+s \quad +s$

$xy = a + s$

$\div y \quad \div y$

$x = \frac{a+s}{y}$

The steps are the same for solving and rearranging

Rearranging is often needed when using $y = mx + c$

e.g. Find the gradient of the line $2y - 4x = 9$

Make y the subject first $y = \frac{4x + 9}{2}$

Gradient $= \frac{4}{2} = 2$

Maths: 9.03 Testing conjectures……

Key words	
Multiples	found by multiplying any number by positive integers
Factor	integers that multiply together to get another number
Prime	an integer with only 2 factors
HCF	highest common factor (biggest factor two or more numbers share)
LCM	lowest common multiple (the first time the times table of two or more numbers match)
Verify	the process of making sure a solution is correct
Proof	logical mathematical arguments used to show the truth of a statement
Binomial	a polynomial with two terms
Quadratic	a polynomial with four terms (often simplified to three terms)

Sparx codes for this topic	
U582	Writing algebraic proof

Core knowledge

True or False?

Conjecture

A pattern that is noticed for many cases

1, 2, 4….
The numbers in the sequence are doubling each time.

Counterexamples

This sequence isn't doubling it is adding 2 each time

Only **one** counterexample is needed to disprove a conjecture

Always, Sometimes, Never true.

Always – Every value always supports the statement

Sometimes – Examples show the statement being true and counter examples to show when it is false.

Never – No example supports the statement

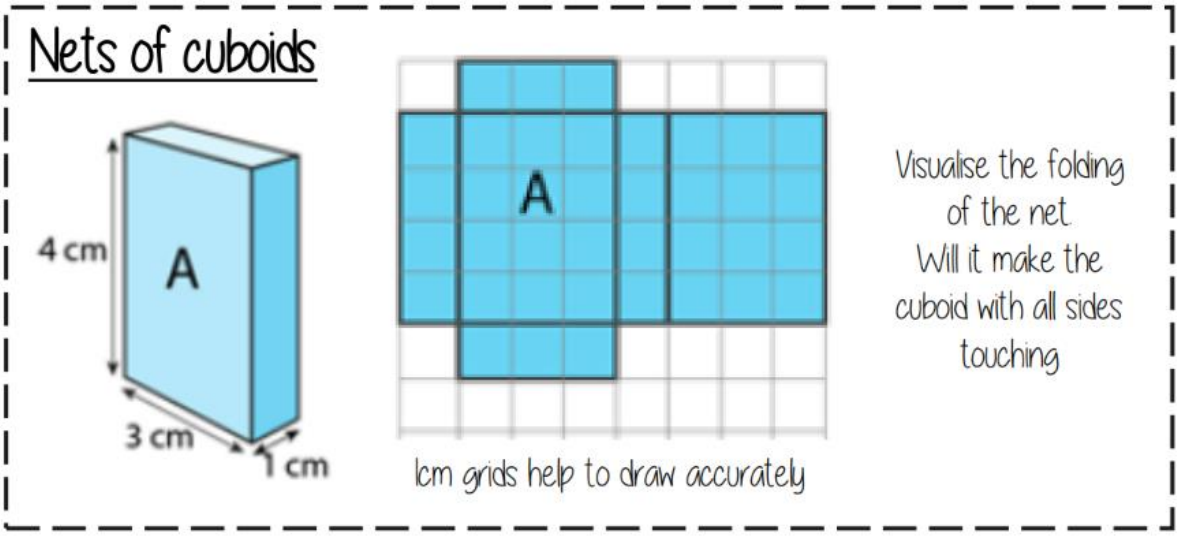
Examples to try
- 0 and 1
- Fractions
- Negative numbers

Maths: 9.04 3D Shapes……

Key words	
2D	two dimensions to the shape eg length and width
3D	three dimensions to the shape eg length, width and height
Vertex	a point where two or more line segments meet Edge a line on the boundary joining two vertex
Face	a flat surface on a solid object
Cross-section	a view inside a solid shape made by cutting through it
Plan	a drawing of something when drawn from above (sometimes birds eye view)
Perspective	a way to give illustration of a 3D shape when drawn on a flat surface

Sparx codes for this topic	
U719, U761, U743	Properties, nets & plans of 3D shapes
U929, U259, U464	Surface area
U786, U174, U915	Volume
U484, U116, U617	Additional higher content

Core knowledge



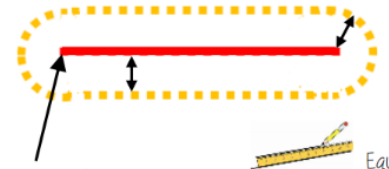
Maths: 9.05 Constructions & congruency ……

Key words	
Protractor	piece of equipment used to measure and draw angles I Locus: set of points with a common property
Equidistant	the same distance
Discorectangle	(a stadium) — a rectangle with semi circles at either end
Perpendicular	lines that meet at 90°
Arc	part of a curve
Bisector	a line that divides something into two equal parts
Congruent	the same shape and size

Sparx codes for this topic	
U257	Interpreting scale drawings
U678, U187, U787, U245, U979	Constructions
U790, U866	Congruence
U820	Higher level content

<u>Core knowledge</u> – on the next page

Locus of a distance from a straight line



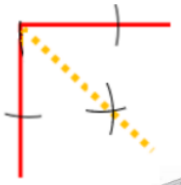
All points are equidistant (the same distance) from line

The ends of the line are fixed points

Equipment needed

The line is straight so a ruler is used for the straight lines parallel to your original line

Locus of a distance from two lines



Also an angle bisector

This cuts the angle in half

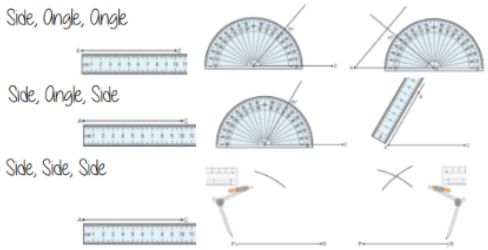
From the angle vertex draw two arcs that cut the lines forming the angle

Keep the compass the same size and use the new arcs as centres to draw intersecting arcs in the middle

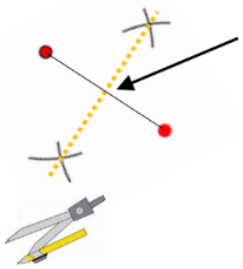
Join the vertex to the intersection

Constructing Triangles

Link to steps



Locus equidistant from two points



Also a perpendicular bisector

Because if the points are joined, this new line intersects it at a 90°

Keep the compass the same size and draw two arcs from each point

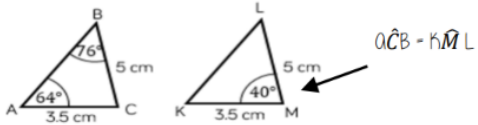
Join the intersections with a ruler.

All points on this line are equidistant from both points

Congruent figures

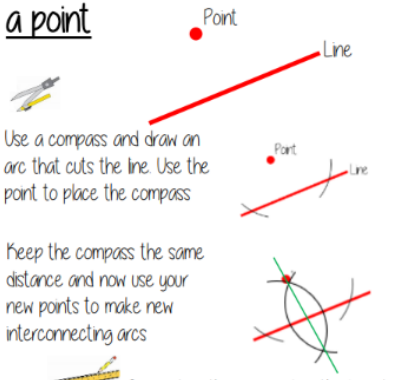
Congruent figures are identical in size and shape – they can be reflections or rotations of each other

Congruent shapes are identical – all corresponding sides and angles are the same size



Because all the angles are the same and AC=KM BC=LM triangles ABC and KLM are **congruent**

Construct a perpendicular from a point



Use a compass and draw an arc that cuts the line. Use the point to place the compass

Keep the compass the same distance and now use your new points to make new interconnecting arcs

Connecting the arcs makes the bisector

If P is a point on the line the steps are the same

Congruent triangles

Side-side-side

All three sides on the triangle are the same size

Angle-side-angle

Two angles and the side connecting them are equal in two triangles

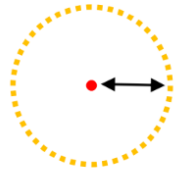
Side-angle-side

Two sides and the angle in-between them are equal in two triangles (it will also mean the third side is the same size on both shapes)

Right angle-hypotenuse-side

The triangles both have a right angle, the hypotenuse and one side are the same

Locus of a distance from a point



All points are equidistant (the same distance) from the fixed point in the middle

If the point is in the corner it can only make a quarter circle

Equipment needed

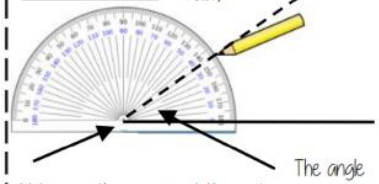
The radius is the distance from the fixed point

Draw and measure angles

R

Draw a 35° angle

Make a mark at 35° with a pencil and join to the angle point (use a ruler)



The angle

Make sure the cross is at the end of the line (where you want the angle)

Scale drawings

R

A picture of a car is drawn with a scale of 1:30

For every 1cm on my image is 30cm in real life

The car image is 10cm

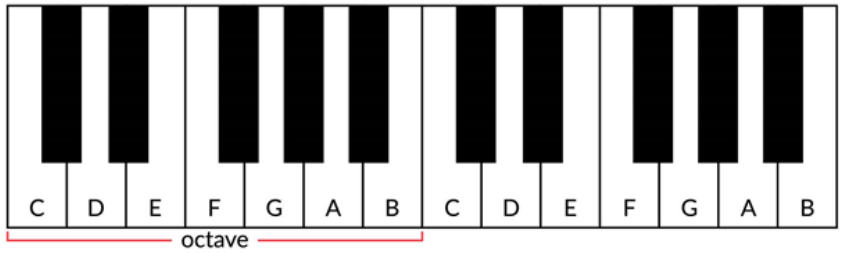
Image :	Real life
1cm :	30cm
10cm :	300cm

(×10 between 1cm and 10cm; ×10 between 30cm and 300cm)

Keyboard Skills

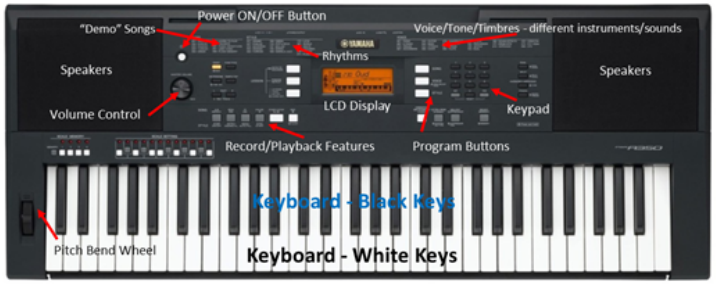
Exploring Treble Clef Reading and Notation

A. Layout of a Keyboard/Piano



A piano or keyboard is laid out with **WHITE KEYS** and Black Keys (see section G). C is to the left of the two Black Keys and the notes continue to G then they go back to A again. Notes with the same letter name/pitch are said to be an **OCTAVE** apart. **MIDDLE C** is normally in the centre of a piano keyboard.

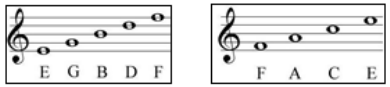
D. Keyboard Functions



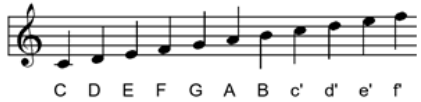
B. Treble Clef & Treble Clef Notation

A **STAVE** or **STAFF** is the name given to the five lines where musical notes are written. The position of notes on the stave or staff shows their **PITCH** (how high or low a note is). The **TREBLE CLEF** is a symbol used to show high-pitched notes on the stave and is *usually* used for the right hand on a piano or keyboard to play the **MELODY** and also used by high pitched instruments such as the flute and violin. The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

Every Green Bus Drives Fast. Notes in the **SPACES** spell **"FACE"**



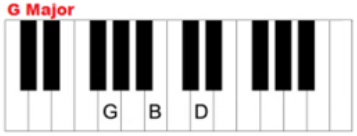
Notes from **MIDDLE C** going up in pitch (all of the white notes) are called a **SCALE**.



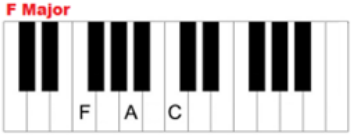
C. Keyboard Chords

C Major

G Major



F Major



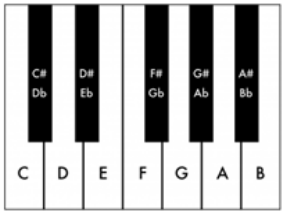
A Minor

Play one – Miss one – play one – miss one – play one

E. Left Hand/Right Hand (1-5)

F. Black Keys and Sharps and Flats

There are five different black notes or keys on a piano or keyboard. They occur in groups of two and three right up the keyboard in different pitches. Each one can be a **SHARP** or a **FLAT**. The # symbol means a **SHARP** which raises the pitch by a semitone *(e.g. C# is higher in pitch (to the right) than C)*. The *b* symbol means a **FLAT** which lowers the pitch by a semitone *(e.g. Bb is lower in pitch (to the left) than B)*. Each black key has 2 names – C# is the same as D*b* – there's just two different ways of looking at it! Remember, black notes or keys that are to the **R**IGHT of a white note are called SHA**R**PS and black notes to the **L**EFT of a white note are called F**L**ATS.



Personal Development

Year 9 Knowledge Organiser – Careers & Economics	
Skill	An ability to do an activity or job well
Attribute	A quality or characteristic that something or someone has
Career	An occupation undertaken for a significant period of a person's life and with opportunities for progress
Enterprise	An organisation, especially a business
Goal	The object of a person's ambition or effort
Ambitious	Having or showing a strong desire and determined to succeed
Communication	The imparting or exchanging of information by speaking, writing or using some other medium
Analyse	Research something carefully in order to form a judgement
Consumer	Someone who buys goods or services. We are all consumers in some way or form
Employee	Someone who works for a person or business
Employer	A person or business who employs people
Income	Money we earn or receive from working for a wage or salary or from investing in assets e.g. money in a bank, in stocks and shares, in property
Loan	Money borrowed, usually from a bank or building society
Pension	Income received by retired people either from the Government as benefit or from their former employer, to which they will have contributed during their working lives by paying tax or by making payments into a pension fund
Manufacturer	A person or business that makes a product
Tax	Contributions from individuals, consumers and businesses to fund Government policies and services such as schools, hospitals, defence, the Civil Service and other Government spending
Wages	Money paid to an employee for working
Self-employed	When someone is in business on their own account, providing goods or services either as an individual sole trader or in partnership with other individuals
Risk	A situation that could cause harm or loss

WADHAM KS3 PE KNOWLEDGE ORGANISER: Football

Skills and Techniques:

Passing / receiving: Play the ball to your team using different types of passes and then control the ball with different parts of your body.

Dribbling / moving with the ball: You can use different parts of your foot to dribble with the ball.

Shooting & Attacking play: You can take aim at the goal, you can cross the ball towards the attackers or you can play a through ball forward to the attackers.

Heading: This can be attacking to score a goal or defending to clear the ball away from the goal.

Defensive play: You can tackle, jockey, close down and mark a player.

Rules:

- A game consists of two 45-minute halves.
- The game is started with a centre kick, from the centre spot. The opposition can then come into the centre circle.
- One referee officiates the game with the help of two assistant referees.
- Players are not allowed to use their hands or arms to control the ball unless they are the goalkeeper.
- Players are prevented from 'goal hanging' by the off-side rule.
- If a team kicks the ball off the pitch, the opposition will receive a throw in or a corner

Positions:

11 players on a team (9 in year 7)

Goalkeeper
Right Back
Left Back
Centre Backs (2)
Centre Midfield (2)
Right Wing
Left Wing
Forwards/Striker (2)

Scoring System:

A player can shoot from anywhere to score a goal.

The ball must completely cross the goal line to count.

The team with the most goals at the end of the game wins.

Tactics:

Changing formations depending on the opposition/ score/ time remaining

Key Words:

Penalty
6-yard box
18-yard box
Indirect Free kick
Top bins
Corner
Pass Back
Kick off
Corner

Key Words:

Jockey
Dribble
Laces
Throw in
Keepy ups
Toe taps
Happy feet
Cruyff turn
Off-side

WADHAM KS3 PE KNOWLEDGE ORGANISER: NETBALL

Skills and Techniques:

Chest pass: Most accurate pass. Hands form W shape behind ball. Step forward into pass, keep elbows close to body. Push through with ball.

Shoulder Pass: Used to cover bigger distances. Place throwing hand behind ball, move opposite foot in front of body. Fully extend arm when passing, following through with pass.

Bounce Pass: Used when space is restricted. Standing with one foot forward. Push ball into floor.

Overhead Pass: Used for distance or height. Place the ball over your head, hands in the W position. Push through the ball and step forward.

Shooting: Ball on fingertips, use non-throwing hand to steady ball. Bend knees and elbows, liftingball up to net.

Rules:

- Matches last for 1 hour and are split into 15-minute quarters.
- The game is started by one 'centre' stepping into the centre circle and then passing the ball.
- Two umpires officiate the game.
- Players are not allowed to travel (run) with the ball
- Players must remain within their designated zones
- A defending player must defend from at least 1m away from the opposition player with the ball.
- It is a non-contact sport
- A player can only hold the ball for 3 seconds

Positions:

7 players on a team

GK - Goalkeeper
GD - Goal Defence
WD - Wing Defence
C - Centre
WA - Wing Attack
GA - Goal Attack
GS - Goal Shooter

Scoring System:

To score a goal, a player must shoot within the goal area (D) and the ball must fall through the opposition's goal ring.

The team with the most points at the end of the game wins.

Tactics:

Quick Passing

Dodging and changing speed to receive ball.

Key Words:

Chest Pass
Bounce Pass
Shoulder Pass
Overhead Pass
Centre Pass
Defensive Third
Centre Third
Attacking Third
Goal
Goal Area

Key Words:

Pivot
Footwork
Contact
Held ball
Obstruction
Intercept
Marking
Penalty

WADHAM KS3 PE KNOWLEDGE ORGANISER: Hockey

Skills and Techniques:

Dribbling: Allows you to move the ball around the pitch without losing possession. Keep the ball close to your stick at all times. 'Sit on the toilet'. When running, keep the ball in front of you and at the 1 o'clock position

Don't look down when running with the ball. Keep your head up.

Passing: Push pass - stand side onto the ball. Bend your back leg and keep your front leg straight, with your foot pointing towards where you want the ball to go. With a slight bend in your arms, place your stick on the ball and push it forwards, transferring your weight from your back foot to your front foot.

Tackling: Keep your stick on the ground.

Block tackle – put your stick flat on the ground with your body in a lunge position.

Rules:

- A game consists of two 30 minute halves.
- The game is started with a centre pass/push back from the centre of the pitch.
- Two umpires officiate the game.
- You can only use the flat side of the stick to control the ball.
- You cannot use your feet or hands to control the ball unless you are the goalkeepers
- Players can 'self-pass' from free hit and pass ins. The opposition need to be 5m away from where it is taken
- Only 1 defender can tackle the player with the ball at a time.

Positions:

11 players on a team

CF - centre forward
RF - right forward
LF - left forward
CM - centre midfield
RM - right midfield
LM - left midfield
SW - sweeper
CB - centre back
RB - right back
LB - left back
GK- goalkeeper

Scoring System:

Players can only shoot within the D.

The ball must completely cross the goal line to count.

The team with the most goals at the end of the game wins.

Tactics:

Changing formations depending on the opposition/ score/ time remaining.

Pass to your team mates 'stick side'.

Key Words:

Penalty flick
16 yard hit out
Self-pass
Short corner
Long corner
PPE gum shield / shin pads
Centre pass

Key Words:

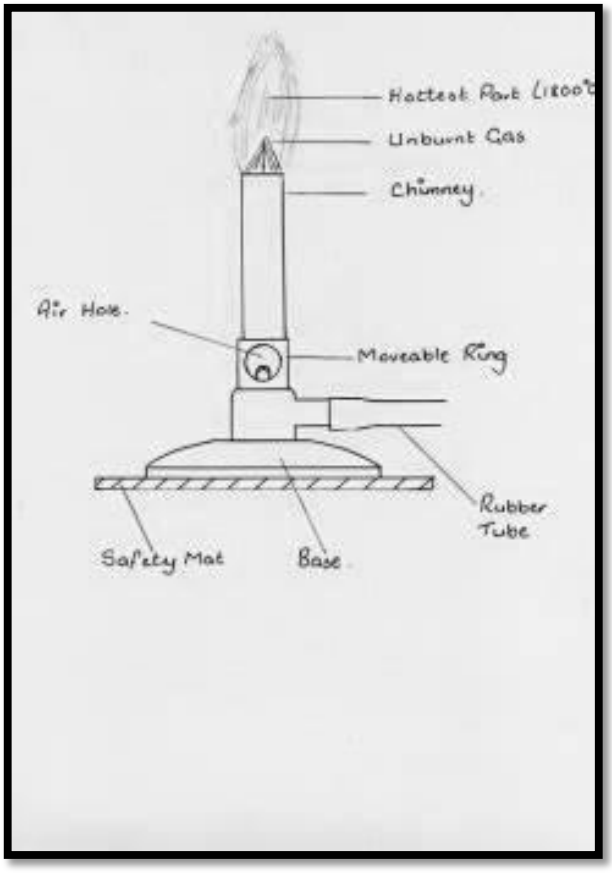
Indian dribbling
Dribbling
Push pass
Hockey stick
Block tackle
Reverse stick
Jab tackle

Science

Science Safety – Lab safety rules and how to use a Bunsen Burner

Lab rules for students

- Do not enter the lab without permission
- Dress for practical work – tie long hair back, tuck in anything that is trailing, roll up sleeves.
- Follow instructions from your teacher or other adults.
- Make sure your working area is safe – stools, bags and coats should be tucked in, out of the way.
- Never run in the lab
- Don't eat or drink
- Do not taste or sniff chemicals
- Never leave an unattended Bunsen burner on a blue flame
- Check that electrical equipment is safe
- Know what to do in case of accidents



A **species** is a group of organisms that are able to reproduce to give offspring that are also able to reproduce. Members of the same species have very similar **characteristics** (features). However, there is **variation** in these characteristics.

All tigers have stripes but there is variation in the stripes between each tiger.

Environmental variation

Some characteristics vary due to **environmental factors** in an organism's surroundings (its **environment**). There are living environmental factors (other organisms) and **physical** (non-living) **environmental factors**, such as the amount of sunlight. Variation caused by environmental factors is **environmental variation**.

All the organisms and physical environmental factors in an area form an **ecosystem**.

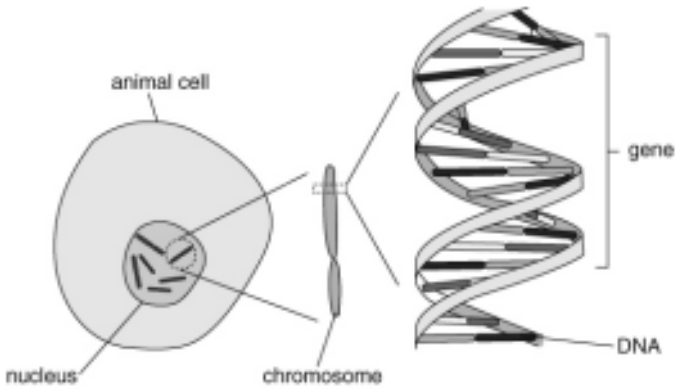
Inherited variation

Offspring **inherit** characteristics from their parents and these characteristics can vary (e.g. brown eyes and blue eyes). This is **inherited variation**.

Chromosomes, genes and DNA

An organism's characteristics are controlled by **genetic information** contained in a code in **DNA**. James Watson and Francis Crick discovered the structure of DNA by making use of the data of other scientists, such as Rosalind Franklin and Maurice Wilkins.

Each **chromosome** contains a long molecule of DNA. Certain sections of that DNA molecule contain the genetic information and are called **genes**.

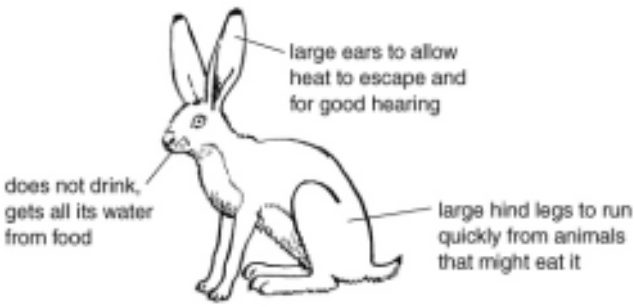


In humans there are 23 different types of chromosome. Most cells have two copies of each type. Gametes, however, only have one copy of each type of chromosome. When two gametes fuse during **fertilisation**, they form a zygote that contains the chromosomes from both gametes.

For some characteristics, scientists can work out the **probability** that a child will inherit that characteristic. Probabilities are shown as percentages, decimals or fractions.

Adaptation

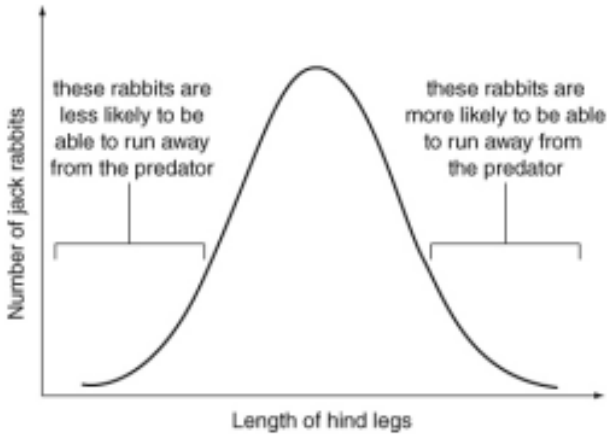
Animals and plants are **adapted** to where they live; they have characteristics that allow them to survive in that habitat.



Jack rabbits are adapted to living in a desert habitat.

Natural selection

All characteristics vary slightly amongst the members of a species. We can often draw a bell curve (**normal distribution**) to show variation in a characteristic.



If conditions in a habitat change, then variation in a characteristic may help some members of a species to survive better than others. Imagine a new predator moves into the area in which jack rabbits live. By chance, some jack rabbits will have slightly longer hind legs that allow them to run faster. These are the jack rabbits that are more likely to survive and reproduce. So, the next generation of jack rabbits will have slightly more rabbits with longer hind legs.

This process is known as **natural selection**. Charles Darwin and Alfred Russel Wallace both came up with the idea that it is natural selection happening over and over again, over a long period of time, that causes **evolution**.

Endangerment and extinction

Changes in an **ecosystem** can cause species to become **endangered** or **extinct**. This is usually due to:

- changes in physical environmental factors
- competition from other organisms
- disease
- human activities (e.g. hunting, clearing habitats, using poisons).

We can try to stop this happening and preserve **biodiversity** (the number of species) by:

- protecting areas and setting up nature reserves
- setting up breeding programmes in zoos
- banning the hunting of some animals or the collecting of wild plants
- setting up **gene banks** (to store parts of organisms, such as seeds and gametes).

We should preserve biodiversity because:

- organisms depend on one another (they are **interdependent**)
- we won't be able to make use of organisms if they become **extinct**
- more biodiverse areas recover better from natural disasters.

Science

Ceramics

Porcelain is used for cable supports on electricity pylons as it does not conduct electricity.

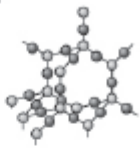
e.g. porcelain, china, pottery, glass and silicon carbide

Larger crystals form when molten ceramics are cooled slowly.

The strong bonds and rigid structure help explain the properties of ceramics.

Ceramics are generally high m.pt. solids, strong, hard, brittle, durable, non-conductors of heat and electricity and unreactive.

Structure



Ceramics often have a lattice structure with billions of atoms held together by strong bonds in a rigid grid-like pattern.

China is used for tableware, as it is strong and a heat insulator.

A range of hard, durable, non metallic materials, which are generally unaffected by heat, e.g. china and glass.

Polymers

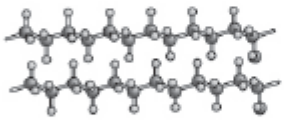
The long coiled molecules go back to their original shape when stretched, making polymers **elastic**.

Polymers are formed by joining together many small molecules called monomers.

Most synthetic polymers are made from crude oil.

e.g. poly(vinyl chloride) is used for covering electrical cables as it is flexible, strong and a non conductor of electricity.

Structure



Polymers are often long chain molecules made up of repeating groups of atoms.

Polymers are generally strong, flexible, non conductors of heat and electricity, durable and unreactive.

If cross-links are formed between chains it makes the polymer harder and less easy to melt. Vulcanisation uses sulfur to form cross-links in rubber molecules.

e.g. poly(ethene) is used for plastic bags and buckets as it is strong, flexible and durable.

Composites

e.g. in safety glass layers of glass are combined with clear polymer.

Exothermic reactions transfer energy to the surroundings so the temperature of the surroundings rises.

Endothermic reactions transfer energy from the surroundings so the temperature of the surroundings falls.

Composites are combinations of two or more different materials.

Composite materials are useful because they combine the properties of all the materials they are made from.

Structure

Many composite materials contain fibres embedded in a matrix or resin.

e.g. concrete is used for large structures because it is strong and durable.

Concrete is made by mixing cement with sand, aggregate and water.

Science

Problems with making and using materials

Burning fossil fuels provides the energy needed to make materials but is also linked to:

- acid rain from production of sulfur dioxide
- increase in carbon dioxide levels and the greenhouse effect
- soot dirtying buildings and damaging health.

Toxic substances released in waste get into food chains.

As large animals eat lots of smaller animals, toxin levels increase (biomagnification) and can reach harmful levels in humans.

Non-biodegradable polymer waste causes pollution problems and dangers to animals for years.

Solutions to these problems include …

- removal of sulfur from fuels
- reduction in the use of fossil fuels and use of more renewable energy sources
- control of hazardous waste from factories
- use of biodegradable polymers, which break down in the soil, so they disappear more quickly.

Recycling materials to use again …

- reduces our use of landfill sites
- reduces the need to burn fossil fuels
- reduces pollution from manufacturing process
- saves our resources of raw materials, e.g. metal ores for metals and wood for paper.

Recycling saves the Earth's resources.

Examples of materials that can be recycled

Metals – by separating and melting.

Glass – by separating colours and melting.

Polymers – by using recycle labels.

Paper – by removing ink and adding water to make a pulp.

Concrete – by crushing and grading.

Endothermic and exothermic reactions

Exothermic reactions transfer energy into the surroundings and so increase the temperature around them, e.g. combustion reactions. **Endothermic reactions** transfer energy from the surroundings and so decrease the temperature around them, e.g. decomposition reactions.

Peer review: how scientific discoveries are checked

Scientists carry out investigations and write a scientific paper on their findings. They send their paper to a scientific journal. An editor reads the paper. If it is interesting the editor sends it to scientists who work in same area for peer review. The scientists check that the paper has valid conclusions, that it is original and that the experiments work.

Depending on the review, the paper is recommended for publication, amendment or rejection.

Science

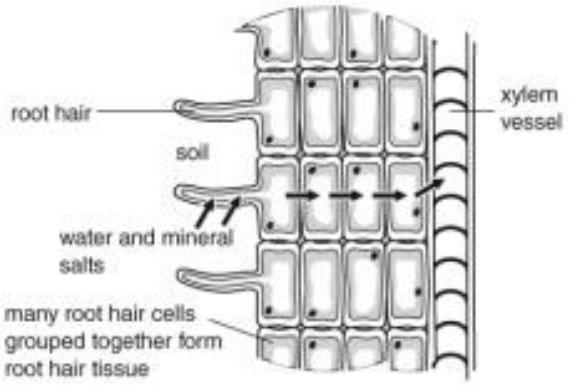
Photosynthesis

Photosynthesis is a series of **chemical reactions** that we can summarise using a **word equation**. Energy and **chlorophyll** are needed for it to happen. The energy is transferred by light (usually from the Sun) and becomes stored in glucose.

carbon dioxide + water → glucose + oxygen

Getting water

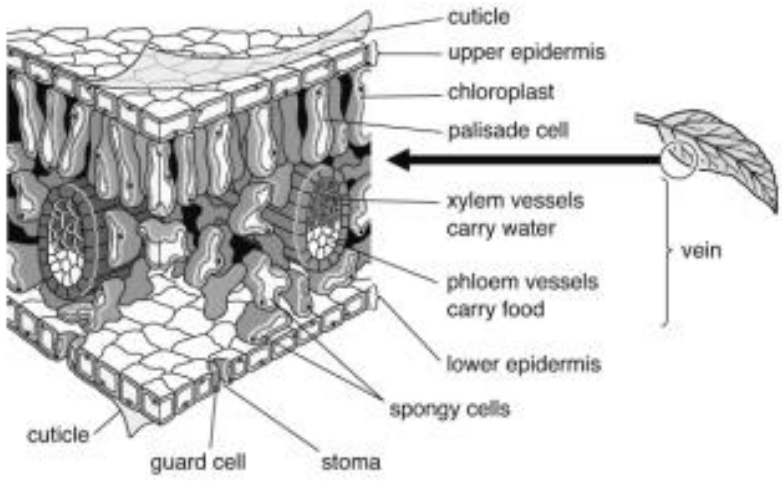
Water is taken out of the soil by the roots. Roots are **adapted** to their **function** by being branched and spread out to help them to **absorb** water from a large volume of soil. They also have **root hair cells,** which have a large surface area to help them absorb water quickly. The water flows up **xylem vessels** (made of hollow cells) to the leaf.



Water is also needed because **mineral salts** are dissolved in it. These keep plants healthy. For instance, plants need **nitrates** to make **proteins**. Water also stops plants **wilting** by filling up their cells, and it can keep their leaves cool.

Getting carbon dioxide

Air, containing carbon dioxide, **diffuses** into leaves through small holes called **stomata**. Leaves are thin so that the carbon dioxide does not need to go very far before reaching the cells that need it. Increasing the amount of carbon dioxide around a plant can often speed up photosynthesis.



Getting light

Many leaves are wide so that they have a large surface area to trap as much light as possible. They are also arranged so that they do not shade one another.

Most photosynthesis happens in the **palisade cells**, which are found near the upper surface of leaves. Palisade cells are packed with **chloroplasts**. Chloroplasts contain **chlorophyll**, a green chemical that absorbs energy transferred by light and uses it to power photosynthesis. Increasing the amount of light can often speed up photosynthesis.

Aerobic respiration

Plant cells release the energy stored in glucose using **aerobic respiration** (another series of chemical reactions):

glucose + oxygen → carbon dioxide + water

All living cells need energy and so all living cells respire. Aerobic respiration happens all the time, but photosynthesis can only happen when there is light.

Uses of glucose

Glucose is a type of sugar. It is used for three things:

- respiration to release energy
- making other substances that act as stores of energy (e.g. starch), which can be turned back into glucose for respiration when needed
- making new materials for growth, e.g. cellulose (for cell walls), lipids (e.g. for cell membranes) and proteins (e.g. for enzymes). To make proteins, mineral salts called **nitrates** are needed.

New substances made by a plant are carried around the plant in **phloem vessels**.

Farming

Modern farming methods can cause environmental problems.

What is done	Why it is done	Problems this causes
land is cleared of hedges and trees	to create more land for crops and make it easier for machinery to move around	Destroys habitats. Lack of roots can cause soil erosion.
pesticides (e.g. **herbicides**, **insecticides**) are used	to kill pests that compete with or harm the crops	Can kill useful organisms as well as pests. Damages food webs.
fertilisers are used	they contain mineral salts that help plants to grow and increase the yield	Can wash into streams and rivers and cause pollution so that the organisms in the water die.
varieties	varieties of plants are chosen that produce the highest yield	The planting of huge areas of a single variety reduces **biodiversity**.

Breeding varieties

Farmers and plant breeders may choose or 'select' a plant with certain characteristics.
This organism is then used to breed from. The offspring that have the best of these characteristics are then bred from again. This is called **selective breeding** and is how many varieties are created.

Sometimes two different varieties are bred together to try to produce offspring with characteristics from both varieties. This is called **cross-breeding**.