



# Wadham School

*A Church of England Community School*



## Knowledge Organisers Year 9 Term 3 & 4 2025-2026



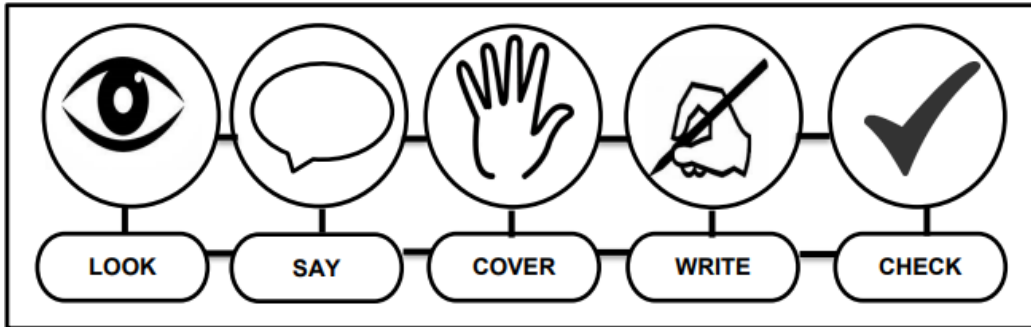
Name.....

Tutor group.....

*“Life in all its fullness” John 10:10*



# Using Your Knowledge Organiser



## Look-Say-Cover-Write-Check

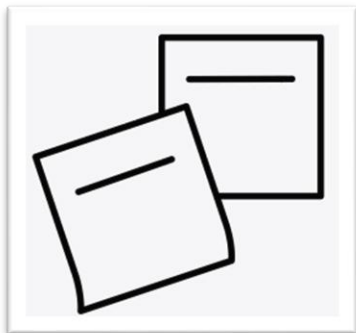
Retrieval practice using the look-say-cover-write-check technique, when done in regular small chunks, is one of the best ways you can learn relevant knowledge over time.

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

Make flash cards with the definition on one side and key word on the other.



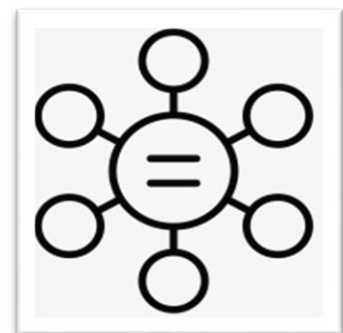
### Self Quizzing

Write quizzes with answers to test yourself in the future.



### Mind maps

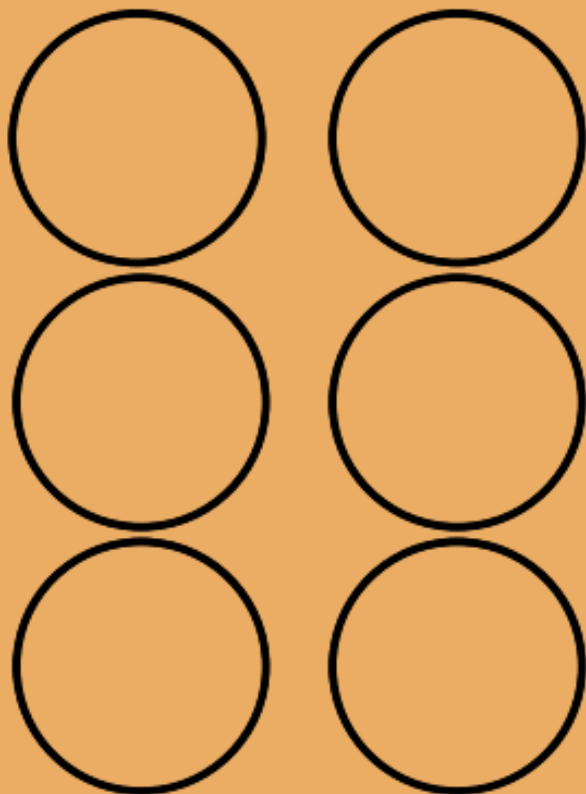
Create mind maps linking key information you need to remember.



# LIBRARY INFORMATION



## Library Reward Card



For terms 3 and 4 receive a stamp every time you read a book from the library. Prizes to be earned along the way. See posters in the library for more details.

**DON'T FORGET**  
Friday lunchtime is  
**LEGO club** in the  
library

IF YOU LOOSE A BOOK,  
DON'T PANIC! IT CAN BE  
REPLACED WITH  
ANOTHER BOOK OR  
WITH A SMALL CHARGE.

DID YOU KNOW THE LIBRARY CATALOGUE CAN BE FOUND ONLINE?  
THERE IS A LINK ON ALL SCHOOL 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 SAFE 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.

# STREET ART

## Creating Stencil Art 1

- Stencil art is one of humanity’s oldest creative forms.
- Some of our species’ first artists made stencils when they placed their hands on cave walls and blew minerals over them, coating the rock in red or black pigment and leaving behind their palmprints.
- Fast-forward some 30,000 years and stencil art techniques remain essentially unchanged.
- Using a sheet of cardboard, plastic, or metal with a pattern or letters cut out is surprisingly versatile, allowing craftspeople to colour cloth, print t-shirts, and create some fantastic street art.



### Creating a stencil design

First, you’ll need an image to work with. You can use something you’ve drawn, choose a photo or pre-existing artwork to adapt as stencil art, or combine elements of all three.

- Make sure your design can be rendered in two-tone black and white without losing too much detail.
- Typography, icons, bold, comic-style illustrations, and high-contrast photos all work well when you’re first learning how to create stencil art.
- Make it pop with bold shadows and crisp lines.

Keep in mind that your stencil cannot be too detailed.



### Shepard Fairey (b.1970)

His style has been described as bold and iconic.

His most famous artwork is the iconic ‘Hope’ poster he made for Barack Obama’s election campaign in 2008.

# STREET ART

## Creating Stencil Art 2

As you create your stencil pattern, be sure to plan for any necessary “bridges” in the artwork. You need to make sure there aren’t any lonely “islands” of blank stencil material, otherwise you may accidentally cut away important design elements.



**Cutting & Spraying Your Stencil**

You should cut out the most detailed parts of your stencil first, as your stencil will only get flimsier with each piece of paper that’s removed.

Now for the best part: spraying your stencil...

- Aim for steady movement and even coverage to avoid dripping (unless that’s an effect you’d like to try out).
- Position your nozzle about 30cm away from your stencil and spray in short strokes in a single direction, without “doubling back” over parts you’ve already coated.
- Leave to dry for at least 10 minutes.
- You may wish to add another layer of colour over the top.

Keyword	Definition
Stencil	A thin sheet of card, plastic or metal with a pattern or leaves cut out of it, used to apply a design on the surface below by the application of ink or paint.
Typography	The art of arranging type and printing from it.
Scalpel	A knife with a small, sharp blade.
Graphics	The products of graphic art, especially design or illustration.
Graffiti	Writing or drawings scribbled, scratched or sprayed on a wall or other surface in a public space.
Distress	Making a piece of furniture, object or surface appear aged.
Collage	The technique in which pieces of paper, photographs, fabrics and other materials are arranged and stick down onto a surface.

# Beliefs and World Views

## Beliefs and Worldviews – Year 9 Term 3 & 4

### Topic 2: Philosophy

1	1	Plato's Cave	Analogy used to show we can't always rely on 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	Argument stating God cannot exist due to suffering in the world
	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 God's 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

### Topic 3: Ethics

1	1	Ethics	Moral principles that guide a person's beliefs and behaviour
	2	Moral	'Right' - If an action is moral, it is the right thing to do
	3	Immoral	'Wrong' - If an action is immoral, it is the right thing to do
	4	Utilitarianism	That which brings the greatest good to the greatest number
	5	Deontological	An action is inherently right or wrong
2	6	Revelation	God telling humans his will, especially what is moral
	7	Agape	Universal love and compassion – the way of Jesus
	8	Maximillian Kolbe	Catholic monk who put Agape into action by giving up his life
3	9	Abortion	Terminating an unwanted pregnancy
	10	Pro-Life	Arguments against abortion (Rights of the child)
	11	Pro-Choice	Arguments in favour of abortion (rights of the mother)
	12	Sanctity of Life	All life is sacred (valuable) and should be protected
	13	Quality of Life	The level of health, comfort and happiness in a person's life
4	14	Euthanasia	Assisted Suicide – Ending a life due to severe pain
	15	Voluntary Euthanasia	A person choosing to end their life due to suffering
	16	Active Euthanasia	Delivering a 'treatment' designed to end life
	17	Passive Euthanasia	Withdrawal of life saving treatment e.g. switching off life support
5	18	IVF: In Vitro Fertilisation	Sperm & egg combined outside of the womb to begin pregnancy
	19	Designer Babies	IVF used to create children with certain genetic characteristics
6	20	Artificial Intelligence	Computer generated intelligence, ability to read and speak
	21	Sentience	To be self-aware and conscience, could an AI be truly alive?

# Knowledge Organiser: Spreadsheets

Data = raw text / numbers that do not yet have any meaning. Context is needed for a user to understand the data and use it.

Example: 100622

This could be: A date of birth / bank sort code / phone number

Information = data that has been processed with context to create meaning for the user.

Example:

10/06/22 is a date of birth.

10-06-22 is a bank sort code.

01709 100622 is a phone number.

Formula = used in a spreadsheet to work out things automatically.

Each formula begins with an = symbol.

= allows you to insert a function in a spreadsheet.



**+** = used for addition

**-** = used for subtraction

**\*** = used for multiplication

**/** = used for division

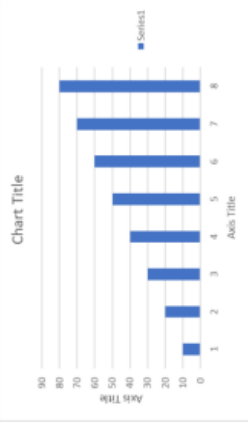


Chart Title = explains what the chart is about.

Axis Labels = helps to understand the chart.

Series = explains which data is being used.

# Computing

A cell reference uses the column (letter) first, followed by the row (number).

The cell below has a cell reference of C4.



Columns = the letters along the top of a spreadsheet. Columns are vertical and go down the spreadsheet.

Rows = the numbers down the side of a spreadsheet. Rows are horizontal and go across the spreadsheet.

Cell = each individual box on a spreadsheet.

=SUM = used to total a range of cells.

=MAX = used to find the highest value in a range of cells.

=MIN = used to find the lowest value in a range of cells.

=AVERAGE = works out the average of a range of cells.

=COUNT = counts the number of cells in a range (blank or not).

=COUNTA = counts the number of non-blank cells in a range.

=IF = uses a cell to show different things depending on a criteria.

=COUNTIF = counts how many cells in a range meet a criteria.

Conditional Formatting = changing the appearance of a cell depending on a criteria.

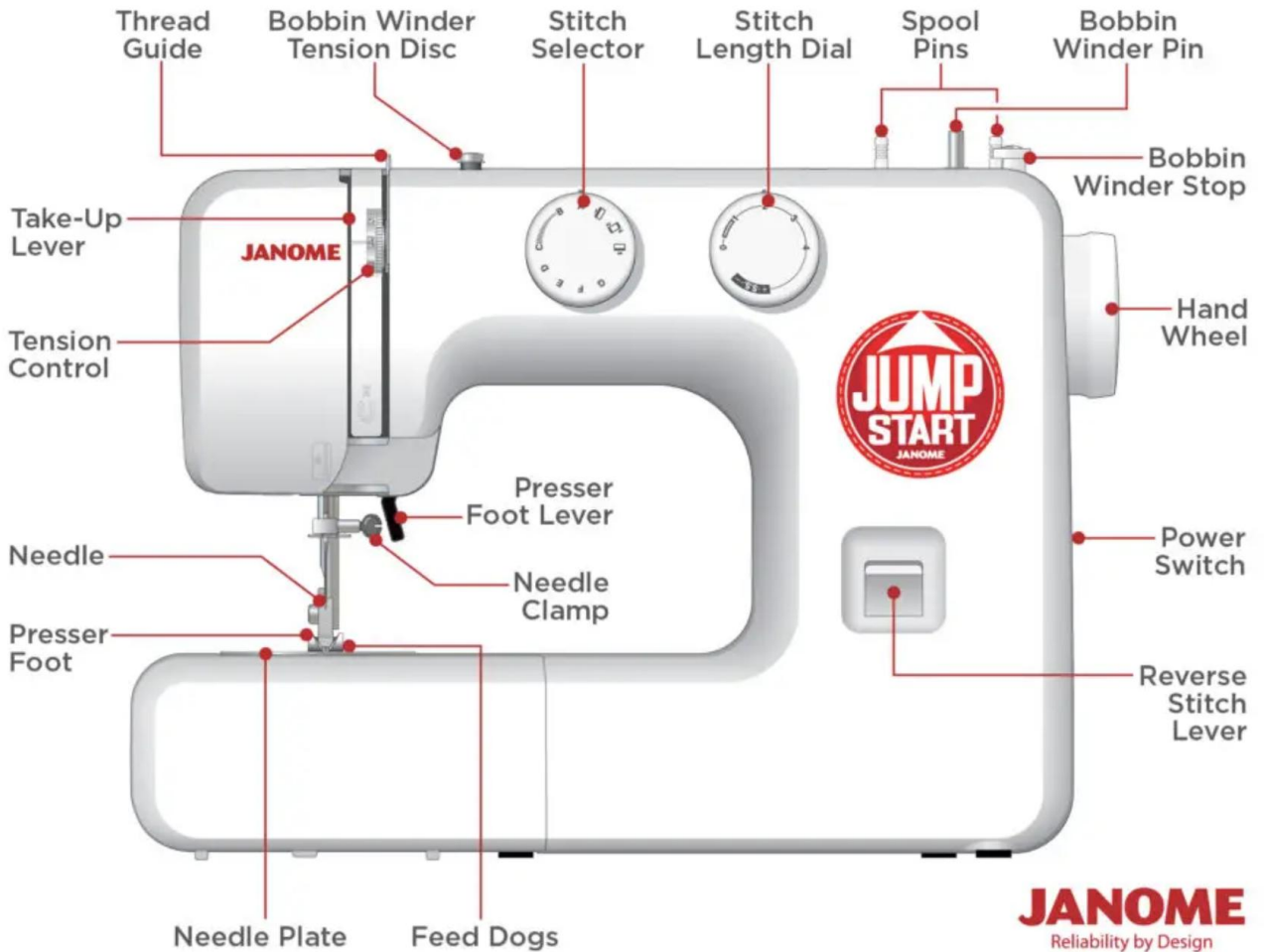
Example: if A1 is greater than 5, make it **green**. If A1 is less than 5 but greater than 0, make it **yellow**. If A1 is less than 0, make it **red**.

Primary Data = data that you have collected yourself.

Secondary Data = data that someone else has collected.

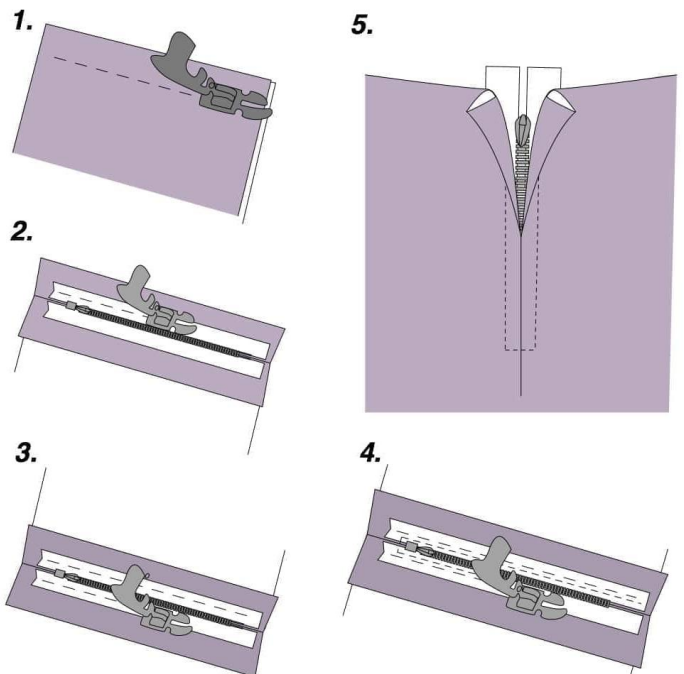
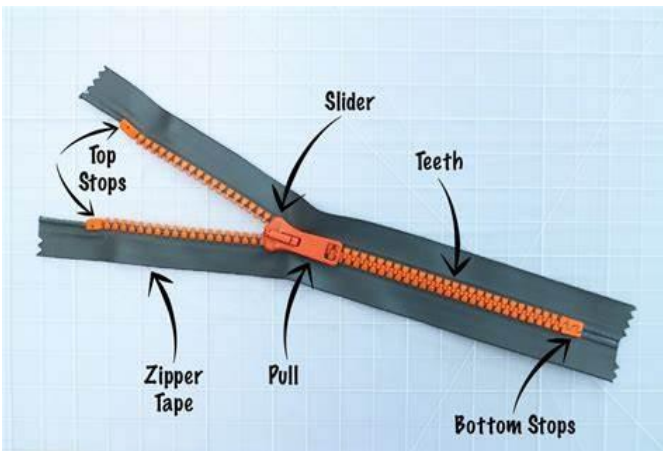


# ESSENTIAL PARTS



**JANOME**  
Reliability by Design

## Inserting a zip





# English

## Lord of the Flies

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

Key words	Definition
Dystopia	a genre of novel that shows injustice or suffering, often as a result of conflict
Civilisation	a stage of human development that is considered more organised and advanced
Savagery	acts of violent, cruel or primitive behaviour
Setting	a place where a story takes place
Microcosm	a smaller version of something much larger (the island representing human society)
Symbolism	the use of images or objects to represent ideas, i.e. the conch
Democracy	a form of government where leaders are elected by voting
Allegory	a story with a moral or message
Anarchy	a system with no rules or government

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

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

# English

## Identity Poetry


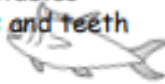



ANALYSIS	
<b>Argument</b>	<b>The writer presents [topic] to...</b>
<b>Neat evidence</b>	<b>The phrase '...' shows...</b>
<b>Additional</b>	<b>Additionally, the phrase '...' adds to...</b>
<b>Language</b>	<b>The imagery suggests...</b>
<b>Your evaluation</b>	<b>A reader may also understand...</b>
<b>Structure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

Key words	Definition
Objectification	when you reduce someone to being viewed as an object.
Dissociation	losing a sense of self.
Racial segregation	enforced separation of races.
Intersectionality	having different social identities.
Juxtaposition	putting contrasting things together.
Idolisation	worshipping something.
Discrimination	the unjust treatment of different categories of people.
Commodification	viewing everything in monetary value.
Dialect	a particular form of language which is associated with an area or social group.
Analogy	a comparison to make a point.
Prejudice	having (often negative) opinions which are not based upon fact or actual experience.
Patriarchy	a male dominated society.

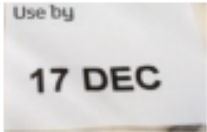




POETIC POEMS	Definition
<b>Personification</b>	Giving something human characteristics
<b>Oxymoron</b>	Contradictory phrase
<b>Enjambment</b>	Continuing a line of poetry
<b>Tone</b>	Mood or atmosphere
<b>Imagery</b>	Descriptive language
<b>Contrast</b>	Very different things put together
<b>Perspective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

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

# Food

1	Nutrients	Food and drinks contains different substances that are needed for health. These are nutrients and water	
	Macro-nutrients	Nutrients needed in large amounts to provide energy <b>Carbohydrates, protein, fats</b>	
	Micro-nutrients	Nutrients needed in the diet in very small amounts- <b>Vitamins and minerals</b>	
	Vitamins	<p><b>Fat-soluble</b> vitamins can be stored in the body:  <b>Vitamin A</b> - dim light vision, healthy skin and eyes, resistance to infection; Leafy green vegetables, Orange/ yellow vegetables  <b>Vitamin D</b> - absorbs calcium from foods to keep bones and teeth healthy: the sun, oily fish, meat, eggs</p>	 
		<p><b>Water-soluble</b> vitamins cannot be stored in the body so are required daily  <b>B vitamins: thiamine - Releases energy from food</b>  <b>B1 Thiamine:</b> energy from carbohydrate and the nervous system.  <b>B2 Riboflavin:</b> energy from protein, carbohydrate and fat. Transport and use of iron in the body  <b>B3: Niacin:</b> required for the normal function of the skin, mucous membranes and nervous system  <b>Vitamin C</b> - Keeps connective tissue healthy, Helps the body absorb iron: Oranges, blackcurrants, broccoli, red/ green lentils</p>	
Minerals	Inorganic substances such as: Calcium, sodium and iron.		
	<p><b>Calcium</b> - maintenance of bones and teeth, blood clotting, normal muscle function: milk, cheese and other dairy products  <b>Sodium (salt)</b>- regulating the amount of water and other substances in the body: Breads and rolls, Pizza, Sandwiches, cured meats, Soups, tacos.  <b>Iron</b> - formation of haemoglobin in red blood cells. Red blood cells carry oxygen around the body: meat, green leafy vegetables, pulses</p>		
2	Functions	<p><b>Aeration</b> (foam) e.g. whisking egg whites; <b>thicken sauces</b> (coagulation) e.g. egg custard; <b>Binding (coagulation)</b> e.g. fishcakes; <b>form structures</b>, e.g. gluten development in bread; <b>gel</b>, e.g. lime jelly <b>Glazing-</b> (coagulation) egg is used to give shing golden colour  <b>emulsifying - mayonnaise; Coating (coagulation)</b> - covering with breadcrumbs, fish; adding colour/flavour/moisture/nutrients.</p>	
3	Food choice	<p>People choose to eat different food for many different reasons:</p> <ul style="list-style-type: none"> <li>• <b>individual energy and nutrient needs;</b> requirements depend on age, gender, activity level, genes, body size</li> <li>• <b>Energy needs also depend on activity levels</b></li> <li>• <b>diet and health;</b> People might have their own or their family's health concerns or for medical reasons.</li> <li>• <b>religion and culture</b> - People choose to eat or avoid certain foods according to their religious beliefs</li> <li>• <b>cost of food;</b></li> <li>• <b>food availability-</b> seasonal food</li> <li>• <b>time of day and occasion;</b></li> <li>• <b>food preferences;</b> food taste, odour, appearance, shape, colour</li> <li>• <b>social and economic considerations</b> - As consumers we are influenced by those around us, location, occupation, lifestyle, education, knowledge</li> <li>• <b>Environmental and ethical considerations</b> -personal beliefs about what is morally right and wrong.</li> <li>• <b>Food provenance</b> - Where food is grown, caught or reared, and how it was produced.</li> <li>• <b>advertising and other point of sale information</b></li> </ul>	

# Food

1	Food waste	<p>Foods deteriorate when killed or harvested. Preservation techniques extend the shelf life of products: <b>freezing, additives, processed foods</b> (strawberries into jam), <b>dehydration</b> (reduces the water), <b>pasteurisation</b> (killing food spoilage organisms and pathogenic organisms), packaging</p> <p>Common foods wasted: <b>Bread and bread products, fruit and vegetables, starchy foods, meat, chicken, fish, milk,</b></p> <p><b>Reasons for food waste:</b> incorrect storage and packaging, buying large quantities, portion size too big; leftovers thrown away, impulse shopping/ offers, limited cooking skills</p>																																								
2	Cost and availability	<p><b>Budgeting (save money).</b> 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.</p>																																								
	Costing a recipe	<p>Using a costing chart can help to calculate the cost per portion</p> <table border="1" data-bbox="486 783 1219 897"> <thead> <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> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Ingredient name	Quantity purchased	Cost of quantity purchased (£)	Quantity needed in recipe	Cost of ingredient used in recipe (£)																																			
Ingredient name	Quantity purchased	Cost of quantity purchased (£)	Quantity needed in recipe	Cost of ingredient used in recipe (£)																																						
3	Food labelling	<p>Information is provided on food and drink packaging to help consumers choose between different products, brands and flavours.</p>																																								
	<p>Legally required information (Mandatory)</p> <table border="1" data-bbox="277 1156 444 1342"> <thead> <tr> <th colspan="3">NUTRITION</th> </tr> <tr> <th colspan="3">When heated according to instructions</th> </tr> <tr> <th>Typical values</th> <th>Per 100g</th> <th>Each pack (300g)*</th> </tr> </thead> <tbody> <tr> <td>Energy</td> <td>420kJ</td> <td>1260kJ</td> </tr> <tr> <td></td> <td>100kcal</td> <td>300kcal</td> </tr> <tr> <td>Fat</td> <td>3.8g</td> <td>11.4g</td> </tr> <tr> <td>of which saturates</td> <td>1.9g</td> <td>5.7g</td> </tr> <tr> <td>Carbohydrate</td> <td>12.1g</td> <td>36.3g</td> </tr> <tr> <td>of which sugars</td> <td>1.6g</td> <td>4.8g</td> </tr> <tr> <td>Fibre</td> <td>1.1g</td> <td>3.3g</td> </tr> <tr> <td>Protein</td> <td>5.8g</td> <td>17.4g</td> </tr> <tr> <td>Salt</td> <td>0.6g</td> <td>1.8g</td> </tr> </tbody> </table>	NUTRITION			When heated according to instructions			Typical values	Per 100g	Each pack (300g)*	Energy	420kJ	1260kJ		100kcal	300kcal	Fat	3.8g	11.4g	of which saturates	1.9g	5.7g	Carbohydrate	12.1g	36.3g	of which sugars	1.6g	4.8g	Fibre	1.1g	3.3g	Protein	5.8g	17.4g	Salt	0.6g	1.8g	<ul style="list-style-type: none"> <li>Name of food or drink.</li> <li>List of ingredients (including additives and allergens)</li> <li>Weight or volume.</li> <li>Date mark (Best-before and use-by).</li> <li>Storage and preparation conditions.</li> <li>Name and address of the manufacturer, packer or seller.</li> <li>Country of origin and place of provenance.</li> <li>Nutrition information.</li> </ul> <table border="1" data-bbox="853 1044 1225 1224"> <thead> <tr> <th>INGREDIENTS</th> </tr> </thead> <tbody> <tr> <td>Water, Carrots, Onions, Red Lentils (4.5%), Potatoes, Cauliflower, Leeks, Peas, Cornflower, <b>Wheat</b> flour, Cream (<b>milk</b>), Yeast Extract, Concentrated Tomato Paste, Garlic, Sugar, <b>Colony</b> Seed, Sunflower Oil, Herb and Spice, White Pepper, Parsley</td> </tr> <tr> <th>ALLERGY ADVICE</th> </tr> <tr> <td>For allergens, see ingredients in <b>bold</b></td> </tr> </tbody> </table> 	INGREDIENTS	Water, Carrots, Onions, Red Lentils (4.5%), Potatoes, Cauliflower, Leeks, Peas, Cornflower, <b>Wheat</b> flour, Cream ( <b>milk</b> ), Yeast Extract, Concentrated Tomato Paste, Garlic, Sugar, <b>Colony</b> Seed, Sunflower Oil, Herb and Spice, White Pepper, Parsley	ALLERGY ADVICE	For allergens, see ingredients in <b>bold</b>
NUTRITION																																										
When heated according to instructions																																										
Typical values	Per 100g	Each pack (300g)*																																								
Energy	420kJ	1260kJ																																								
	100kcal	300kcal																																								
Fat	3.8g	11.4g																																								
of which saturates	1.9g	5.7g																																								
Carbohydrate	12.1g	36.3g																																								
of which sugars	1.6g	4.8g																																								
Fibre	1.1g	3.3g																																								
Protein	5.8g	17.4g																																								
Salt	0.6g	1.8g																																								
INGREDIENTS																																										
Water, Carrots, Onions, Red Lentils (4.5%), Potatoes, Cauliflower, Leeks, Peas, Cornflower, <b>Wheat</b> flour, Cream ( <b>milk</b> ), Yeast Extract, Concentrated Tomato Paste, Garlic, Sugar, <b>Colony</b> Seed, Sunflower Oil, Herb and Spice, White Pepper, Parsley																																										
ALLERGY ADVICE																																										
For allergens, see ingredients in <b>bold</b>																																										
	Voluntary information	<p>Cooking instructions, serving suggestions, price; customer guarantee; photograph or image of the food; bar code, environmental information (recycling), vegetarian, vegan, organic</p>  																																								
	Nutrition and health claims:	<p>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.</p>																																								
4	Food availability and food provenance	<p><b>Food certification and assurance schemes</b> guarantee defined standards of food safety or animal welfare.</p> <p><b>Traceability</b> - identify the movement of a food product and its ingredients through all steps in the supply chain</p> <p><b>Sustainability</b>-avoid damaging or wasting natural resources.</p> <p><b>Food security</b> - access to sufficient safe and nutritious food</p> <p><b>Fairtrade</b> - help producers in developing countries achieve sustainable and equitable trade</p> <p>Red Tractor  The British Lion mark </p> <p><i>'Life in all its fullness' John 10:10</i></p>																																								



Les fêtes	Festivals
1. le premier avril	<i>April Fool's Day</i>
2. Noël	<i>Christmas</i>
3. la veille de Noël	<i>Christmas Eve</i>
4. Pâques	<i>Easter</i>
5. la Chandeleur	<i>Candlemas</i>
6. le Nouvel An	<i>New Year</i>
7. la Saint-Sylvestre	<i>New Year's Eve</i>
8. la Saint-Valentin	<i>Valentine's Day</i>
9. Aïd	<i>Eid</i>
10. mon anniversaire	<i>my birthday</i>
11. le 14 juillet	<i>Bastille Day</i>
12. manger du chocolat	<i>eating chocolate</i>
13. acheter des cadeaux	<i>buying presents</i>
14. aller chez mes cousins	<i>going to my cousins' house</i>

Je vais manger...	I am going to eat...
22. une salade niçoise	<i>a tuna salad</i>
23. une tarte flambée	<i>a pizza-like tart</i>
24. un couscous aux légumes	<i>a vegetable couscous</i>
25. une crêpe	<i>a pancake</i>
26. des moules-frites	<i>mussels and chips</i>
27. une quiche lorraine	<i>a bacon quiche</i>
28. C'est comment?	<i>What is it like?</i>
29. C'est délicieux.	<i>It's delicious.</i>
30. C'est savoureux.	<i>It's tasty.</i>
31. C'est un plat typique.	<i>It's a speciality.</i>

C'est carnaval!	It's carnival!
15. Ma fête préférée, c'est...	<i>My favourite festival is...</i>
16. le carnaval	<i>carnival</i>
17. Je retrouve mes copains.	<i>I meet my friends.</i>
18. Je porte un masque.	<i>I wear a mask.</i>
19. Je porte un déguisement.	<i>I wear a costume.</i>
19. Je regarde le parade.	<i>I watch the parade.</i>
20. Je partage des photos.	<i>I share photos.</i>
21. Je chante et je danse.	<i>I sing and I dance.</i>

Le marché de Noël	Christmas market
32. Je vais...	<i>I am going...</i>
33. visiter le marché	<i>to visit the market</i>
34. acheter un cadeau	<i>to buy a present</i>
35. admirer les maisons illuminées	<i>to admire the illuminated houses</i>
36. écouter des chorales	<i>to listen to some choirs</i>
37. manger une tarte flambée	<i>to eat a pizza-like tart</i>
38. boire un jus de pomme chaud	<i>to drink a hot apple juice</i>

Les opinions	Opinions
39. J'aime/Je n'aime pas...	<i>I like/don't like...</i>
40. J'adore/Je déteste...	<i>I love/I hate...</i>
41. Je préfère...	<i>I prefer</i>

Phonics Focus:	
silent final consonant <i>trois</i>	[ou] = /oo/ <i>écoute</i>
silent final 'e' <i>fête</i>	[em] [en] [an] = /on/ <i>serpent</i>
[on] = /on/ <i>bonbon</i>	[in] = /euhn/ <i>numéo un</i>

Vital verb: manger (to eat)	
Present:	Near future:
<i>Je mange</i>	<i>Je vais manger</i>
<i>Tu manges</i>	<i>Tu vas manger</i>
<i>Il/elle/on mange</i>	<i>Il/elle/on va manger</i>
<i>Nous mangeons</i>	<i>Nous allons manger</i>
<i>Vous mangeez</i>	<i>Vous allez manger</i>
<i>Ils/elles mangent</i>	<i>Ils/elles vont manger</i>



Je vais manger...	I am going to eat...
1. une salade niçoise	A tuna and salad salad
2. une tarte flambée	A pizza-like tarte
3. un couscous aux légumes	Vegetable couscous
4. une crêpe	A pancake
5. des moules-frites	Mussels and chips
6. une quiche lorraine	A bacon quiche
7. C'est comment?	What is it like?
8. C'est délicieux.	It's delicious.
9. C'est savoureux.	It's savoury.
10. C'est un plat typique.	It's a typical dish

Le marché de Noël	Christmas market
11. Je vais...	I am going...
12. visiter le marché	to visit the market
13. acheter un cadeau	to buy a present
14. admirer les maisons illuminées	to admire the illuminated houses
15. écouter des chorales	to listen to carols
16. manger une tarte flambée	to eat a tarte
17. boire un jus de pomme chaud	to drink hot apple juice
18. Ça va être...	It is going to be...
19. L'année prochaine	Next year
20. Le mois prochain	Next month

Les vêtements	Clothes
21. un blouson	a jacket
22. un chapeau	a hat
23. un imperméable	a raincoat
24. un manteau	a coat
25. un pantalon	trousers
26. une jupe	a skirt
27. une robe	a dress
28. un sac (à main)	a (hand)bag
29. des chaussures	shoes
30. des gants	gloves
31. des lunettes de soleil	sunglasses
32. des baskets	trainers
33. Je porte...	I wear...
34. Je vais porter...	I am going to wear...
35. J'ai porté...	I wore...

L'année dernière	Last year
36. Je suis allé(e) en France.	I went to France.
37. Je suis allé(e) à l'Église.	I went to church.
38. J'ai joué à des jeux.	I played games.
39. J'ai mangé beaucoup de choses délicieuses.	I ate lots of delicious things.
40. J'ai reçu et ouvert beaucoup de cadeaux.	I received and opened lots of presents.
41. J'ai chanté beaucoup de chansons de Noël.	I sang lots of carols.
42. J'ai décoré le sapin de Noël.	I decorated the Christmas tree.
43. C'était...	It was...

Phonics Focus:	
silent final consonant <b>trois</b>	[ui] = /we/ <b>fruits</b>
[é] = 'ay' <b>fê<u>té</u></b>	[ain] = /an/ <b>proch<u>ain</u></b>
[aine] = /ayn/ <b>proch<u>aine</u></b>	[ou] = /ooh/ <b>dou<u>ze</u></b>

Vital verb: fêter (to celebrate)		
Present:	Near future:	Past perfect:
Je fê <u>t</u> e	Je <b>vais</b> fê <u>t</u> er	J' <b>ai</b> fê <u>té</u>
Tu fê <u>t</u> es	Tu <b>vas</b> fê <u>t</u> er	Tu <b>as</b> fê <u>té</u>
Il/elle/on fê <u>t</u> e	Il/elle/on <b>va</b> fê <u>t</u> er	Il/elle/on <b>a</b> fê <u>té</u>
Nous fê <u>t</u> ons	Nous <b>allons</b> fê <u>t</u> er	Nous <b>avons</b> fê <u>té</u>
Vous fê <u>t</u> ez	Vous <b>allez</b> fê <u>t</u> er	Vous <b>avez</b> fê <u>té</u>
Ils/elles fê <u>t</u> ent	Ils/elles <b>vont</b> fê <u>t</u> er	Ils/elles <b>ont</b> fê <u>té</u>

# Geography

Knowledge Organiser Year 9  
Topic: MIDDLE EAST



The Middle East is very diverse when it comes to religions. Three of the world's major religions, Islam, Judaism and Christianity, originated there. The conflicts between these groups over land, resources and people are the cause of huge conflicts.

The Middle East has 5% of the world's population but only 1% of its water, conflicts over basic resources can be a source of underlying tension in a region characterised by ethnic and religious diversity.

**The physical Geography of a place can have a major impact on conflict.**

- Inside bend of a river meander or the top of a hill, which could be easily defended in the event of an enemy attack.
- Desert landscapes provide little cover and the lack of landmarks makes navigation difficult. Can present some advantages. For example, the flat terrain means that the pace of advance is fast and the lack of cover favours coalition forces who possess weapons with a greater range than the insurgents.
- Marsh land - the land is unstable and it is difficult to set up a base or equipment
- Mountainous regions are also notoriously difficult environments in which to engage in conflict as temperatures are low and conditions harsh.

## Vocabulary Key terms and definitions

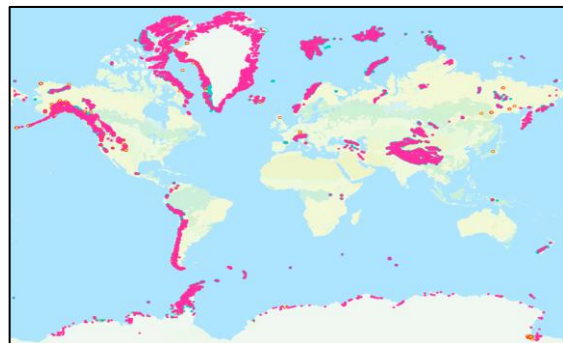
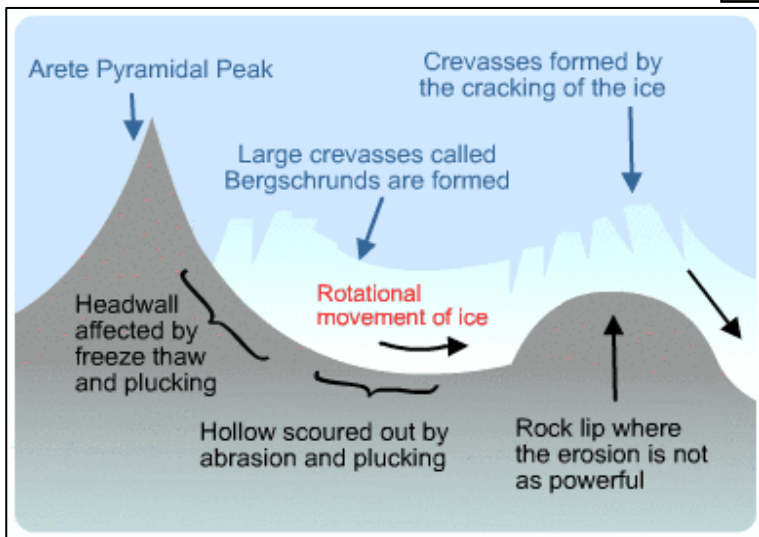
<b>Biome</b>	A major regional group of distinctive plant and animal communities best adapted to the region's physical natural environment, latitude, altitude and terrain factor.
<b>Development</b>	Use of resources, natural and human, to achieve higher standards of living
<b>GDP</b>	Gross Domestic Product – the total value of all goods and services produced in a country
<b>Middle East</b>	A geographical and cultural region located primarily in western Asia, but also in parts of northern Africa and south eastern Europe.
<b>Peninsula</b>	A long piece of land that sticks out from a larger area of land into the sea or a lake.
<b>Plateau</b>	An area of highland, usually consisting of relatively flat terrain.
<b>Steppe</b>	A large area of flat unforested grassland.

Key Term	Definition
Abrasion	The scraping away of the valley walls and floor as glaciers drag sediment.
Plucking	The process where the base of glacier freezes to the valley and pulls away rock.
Rotational Slip	The vertical rotation of ice inside a corrie as ice gathers and gravity takes over.
Freeze Thaw	When water freezes inside the cracks of exposed valley sides, breaking away sharp fragments of rock.
Glacial retreat	When glaciers melt and appear to move up the valley as temperatures rise.
Erosional	A feature formed when a glacier breaks away rock.
Depositional	A feature formed when a glacier deposits glacial

A glacier is a slowly moving river of ice that is formed in areas that are extremely cold and experience lots of snow. They move because of gravity and they erode the land as they move. To be classed as a glacier they must be over 164 feet thick.

### How are glaciers born?

### Global Distribution of glaciers.



**Glacial periods**  
Times when the earth was colder.  
When we have ice ages!

**Inter-glacial periods**  
Times when the earth was warmer, most of the ice melts!

About 150,000 years ago the earth was beginning to warm up. 140,000 years ago tropical life would live in Britain and it was about 6°C. About 40,000 years later (100,000 years ago) the ice age began. Throughout the ice age glaciers flowed through valleys and polar bears were in Britain. Until 10,000 years ago the ice age ended and the climate began to warm, polar life left and glaciers melted away. Today we are left with our new landscape, but pollution and climate change is increasing the world's temperature at an unnatural rate!



Feste	Celebrations
1. Karneval	<i>carnival</i>
2. Weihnachten	<i>Christmas</i>
3. Heiligabend	<i>Christmas Eve</i>
4. Ostern	<i>Easter</i>
5. Fastnacht	<i>Mardi gras</i>
6. Neujahr	<i>New Year</i>
7. Silvester	<i>New Year's Eve</i>
8. Valentinstag	<i>Valentine's Day</i>
9. Eid	<i>Eid</i>
10. Nikolaustag	<i>6<sup>th</sup> December</i>
11. mein Geburtstag	<i>my birthday</i>
12. eine Hochzeit	<i>a wedding</i>

Essen und Trinken	Food and Drink
21. Ich werde...essen.	<i>I will eat....</i>
22. Ich werde...trinken.	<i>I will drink...</i>
23. schöne Sachen	<i>lovely things</i>
24. Gans	<i>goose</i>
25. Blaukraut	<i>red cabbage</i>
26. Kartoffeln	<i>Potatoes</i>
27. Schokolade	<i>chocolate</i>
28. Lebkuchen	<i>gingerbread</i>
29. Stollen	<i>stollen</i>
30. Fondue	<i>fondue</i>
31. Raclette	<i>melted cheese</i>
32. Bockwürstchen	<i>sausages</i>
33. Glühwein	<i>mulled wine</i>

Prost Neujahr!	Happy New Year
13. Wir machen eine Party.	<i>We have a party.</i>
14. Wir sagen 'Prost Neujahr'.	<i>We say: 'Happy New Year'.</i>
15. Wir machen ein Feuerwerk.	<i>We have fireworks.</i>
16. Wir trinken Sekt oder Limo.	<i>We drink sparkling wine or lemonade.</i>
17. Wir machen eine Wanderung.	<i>We go for a walk.</i>
18. Wir essen Linsensuppe und Schweinefleisch.	<i>We eat lentil soup and pork.</i>
19. Das ist eine Tradition.	<i>That is a tradition.</i>
20. Es bringt Glück.	<i>It brings luck.</i>

Der Weihnachtmarkt	Christmas market
34. Ich werde...	<i>I will...</i>
35. Wir werden...	<i>We will...</i>
36. den Markt besuchen.	<i>visit the market.</i>
37. Geschenke kaufen.	<i>buy presents.</i>
38. den Weihnachtsschmuck bewundern.	<i>admire the Christmas decorations.</i>
39. Weihnachtslieder singen.	<i>sing Christmas carols.</i>
40. Kastanien essen.	<i>eat chestnuts.</i>
41. Glühwein trinken.	<i>drink mulled wine.</i>

Phonics Focus:	
[eu] = /oi/ <i>Fre<u>u</u>nd</i>	[au] = /ow/ <i>H<u>au</u>s</i>
[ei] = /eye/ <i><u>E</u>is</i>	[ie] = /ee/ <i><u>Bi</u>e</i>

Vital verb: essen (to eat)	
Present	Future
<i>Ich esse</i>	<i>Ich werde...essen.</i>
<i>Du isst</i>	<i>Du wirst...essen.</i>
<i>Er/sie isst</i>	<i>Er/sie wird...essen.</i>
<i>Wir essen</i>	<i>Wir werden...essen.</i>
<i>Ihr esst</i>	<i>Ihr werdet...essen.</i>
<i>Sie/sie essen</i>	<i>Sie/sie werden...essen.</i>



Ich werde...essen.	I am going to eat...
1. Schnitzel	<i>schnitzel</i>
2. Weihnachtsganz	<i>Christmas goose</i>
3. Sauerbraten	<i>roast beef</i>
4. Kuchen	<i>cake</i>
5. Lebkuchen	<i>gingerbread</i>
6. Stollen	<i>stollen</i>
7. Wie schmeckt das?	<i>What does it taste like?</i>
8. Es ist lecker.	<i>It's delicious.</i>
9. Es ist salzig.	<i>It's salty/savoury.</i>
10. Es ist süß.	<i>It's sweet.</i>

Die Kleidung	Clothes
21. Normalerweise trage ich...	<i>Normally, I wear...</i>
22. Wenn es mein Geburtstag ist, trage ich...	<i>When it's my birthday, I wear...</i>
23. Ich werde...tragen.	<i>I will wear...</i>
24. Ich habe...getragt.	<i>I wore...</i>
25. Sportschuhe	<i>trainers</i>
26. Sandalen	<i>sandals</i>
27. ein Kleid	<i>a dress</i>
28. eine Jeanshose	<i>jeans</i>
29. eine Hose	<i>trousers</i>
30. ein Mantel	<i>a coat</i>
31. Stiefel	<i>boots</i>
32. ein Hemd	<i>a shirt</i>
33. ein Rock	<i>a skirt</i>
34. ein Anzug	<i>a suit</i>
35. ein Kapuzenpulli	<i>a hoody</i>

Der Weihnachtsmarkt	Christmas market
11. Ich werde.../Wir werden...	<i>I will.../We will...</i>
12. den Markt besuchen.	<i>visit the market</i>
13. Geschenke kaufen.	<i>buy a present</i>
14. den Weihnachtsschmuck bewundern.	<i>admire the Christmas decorations.</i>
15. Weihnachtslieder singen.	<i>Sing carols</i>
16. Kastanien essen.	<i>eat roasted chestnuts.</i>
17. Glühwein trinken.	<i>drink mulled wine.</i>
18. Es wird...sein.	<i>It is going to be...</i>
19. Nächstes Jahr	<i>Next year</i>
20. Nächsten Monat	<i>Next month</i>

Letztes Jahr	Last year
36. Ich bin nach Deutschland gefahren.	<i>I went to Germany.</i>
37. Ich bin in die Kirche gegangen.	<i>I went to church.</i>
38. Ich habe Spiele gespielt.	<i>I played games.</i>
39. Ich habe schöne Sachen gegessen.	<i>I ate lots of delicious things.</i>
40. Ich habe Geschenke bekommen und geöffnet.	<i>I received and opened lots of presents.</i>
41. Ich habe Weihnachtslieder gesungen.	<i>I sang lots of carols.</i>
42. Ich haben den Weihnachtsbaum geschmückt.	<i>I decorated the Christmas tree.</i>

Phonics Focus:	
[d] = /t/ <i>hund</i>	[w] = /v/ <i>wie</i>
[z] = 'ts' <i>Zug</i>	[ö] = /urgh/ <i>höre</i>
[ß] = /ss/ <i>groß</i>	[v] = /f/ <i>vier</i>

Vital verb: <i>feiern</i> (to celebrate)		
Present:	Near future:	Past perfect:
<i>Ich feiere</i>	<i>Ich werde...feiern.</i>	<i>Ich habe...gefeiert.</i>
<i>Du feierst</i>	<i>Du wirst...feiern.</i>	<i>Du hast...gefeiert.</i>
<i>Er/sie feiert</i>	<i>Er/sie wird...feiern.</i>	<i>Er/sie hat...gefeiert.</i>
<i>Wir feiern</i>	<i>Wir werden...feiern.</i>	<i>Wir haben...gefeiert.</i>
<i>Sie/sie feiern</i>	<i>Sie/sie werden...feiern.</i>	<i>Sie/sie haben...gefeiert.</i>

# History

## Year 9 History: Knowledge Organiser Term 3 + 4, Nazi Germany and The Holocaust

Key Words	
1. <b>Antisemitism</b>	Hostility to or prejudice against Jews.
2. <b>Aryan</b>	Germans of pure blood characterised by their blue eyes and blond hair.
3. <b>Collaborators</b>	People, organisations and governments that helped the Nazis persecute and/or murder Jews.
4. <b>Concentration camps</b>	Places where large numbers of people were kept as prisoners under armed guard.
5. <b>Death Camp</b>	Killing centres established by the Nazis in Central Europe during WW2
6. <b>Demonised</b>	Something or someone portrayed as wicked and threatening.
7. <b>Deportation</b>	Forcibly removing someone from one country to another.
8. <b>Discrimination</b>	Unfairly treating an individual or a group differently from others.
9. <b>Einsatzgruppen</b>	Nazi soldiers that carried out mass shootings in Eastern occupied countries.
10. <b>Ghettos</b>	Areas in towns/cities where Jews were separated from other people.
11. <b>Genocide</b>	The killing of, and attempted destruction of an entire group of people.
12. <b>Liberation</b>	Setting someone free.
13. <b>Partisan</b>	A member of an armed group formed to fight against an occupying force.
14. <b>Persecution/ Persecuted</b>	Being treated badly, usually because of 'race' or religion or political beliefs.
15. <b>Prejudice</b>	An unfair opinion, judgement or feeling towards someone.
16. <b>Work camps</b>	Camps in which prisoners were forced to work as slave labourers.
Timeline of Jewish persecution in Germany	
1933	The SA organised a boycott of Jewish shops and businesses. Jewish civil servants, lawyers and teachers were sacked, and Jewish doctors and dentists could not treat Aryans (pure Germans). Science lessons about race were introduced which taught that Jews were subhuman.
1934	Jewish shops were marked with a yellow star. Jews had to sit on separate seats on buses and trains. Many councils banned them from public spaces.
1935	The Nuremberg Laws stripped Jews of German citizenship, outlawed marriage and sexual relations between Jews and Germans, and removed all the civil and political rights of the Jews. These laws were to be the foundation for much of the extreme persecution which took place later.
1938	Jews were ordered to register all wealth and property. They could no longer practice as doctors or lawyers, and Jewish businessmen could not have Aryan clients. Jews were forced to change their first names: males would be known as Israel, females as Sarah. Jewish children were forbidden to go to school and universities. Kristallnacht - 9 November (The Night of Broken Glass). The SS organised attacks on Jewish homes, businesses and synagogues in retaliation for the assassination of the German ambassador to France by a Jew. During Kristallnacht, 400 synagogues and 7,500 shops were destroyed. Jews were then made to clear up the destruction on their hands and knees and pay a fine of one billion marks to the government. The remaining Jewish property was then confiscated.
1939	The Nazis, who had been encouraging Jews to emigrate from 1933 onwards, now started "forced" emigration. Göring set up the Reich Central Office for Jewish Emigration. 150,000 Jews were deported, but they had to pay a large "tax" before they could leave. In March, there were mass arrests. 30,000 Jews were sent to concentration camps.
1941	The 'Final Solution' agreed. The Nazi policy on Jews moved from expulsion to containment to commanders being ordered to systematically murder the Jews of Europe.

# Maths: 9.08 Maths and money.....

Key words	
Credit	money being placed into a bank account
Debit	money that leaves a bank account
Balance	the amount of money in a bank account
Expense	a cost/ outgoing
Deposit	an initial payment (often a way of securing an item you will later pay for)
Multiplier	a number you are multiplying by. (Multiplier more than 1 = increasing, less than 1 = decreasing)
Per Annum	each year
Currency	the type of money a country uses
Unitary	one - the cost of one

Sparx codes for this topic	
M901	Bills and Bank statements
U533	Simple Interest
U332	Compound Interest
U610	Exchange Rates
M901	Value Added Tax (VAT)
M901	Wages and Taxes
U721	Unit Pricing

### Unit Pricing

4 Oranges £1	5 cupcakes £1.20
-----------------	---------------------

$4 = £1.00 \div 2$        $5 = £1.20 \div 5$   
 $2 = £0.50$                        $1 = £0.20$   
 $1 = £0.25$                        $1 = £0.20$

Cost per Unit

Cupcakes are the best value as one item has the cheapest value

To calculate unit per cost you divide by the cost.  
  
 There is a directly proportional relationship between the cost and number of units

# Maths: 9.03/9 Mathematical reasoning...

Key words	
Multiples	found by multiplying any number by positive integers
Factor	integers that multiply together to get another number
Prime	an integer with exactly 2 factors
HCF	Highest common factor
LCM	Lowest common multiple
Parallel	two straight lines that never meet with the same gradient
Perpendicular	two straight lines that meet at $90^\circ$
Transversal	a line that crosses at least two other lines
Sum	the result of adding two or more numbers
Conjecture	a statement that might be true but is not proven
Equation	a statement that says two things are equal
Counterexample	an example that disproves a statement

Sparx codes for this topic	
M606	Angles on parallel lines
M319, M163, M818, M502, M393, M653	Solving angle problems
M276	Making conjectures with shapes
U582	Writing algebraic proof

**Solving angle problems**

Angles on a straight line  
 $180^\circ$

Link angle facts to algebra

Form an equation

$$2x + 4x = 180^\circ$$

State the reason

The sum of angles on a straight line is  $180^\circ$

Solve

$$2x + 4x = 180^\circ$$

$$6x = 180^\circ$$

$$x = 30^\circ$$

Vertically opposite angles  
Equal

Angles around a point  
 $360^\circ$

Triangles  
Sum of angles is  $180^\circ$

Isosceles have the same base angles

Interior Angles  
The angles enclosed by the polygon

(number of sides - 2) x  $180^\circ$

# Maths: 9.10 Rotation & translation .....

Key words	
Rotate	a rotation is a circular movement
Symmetry	when two or more parts are identical after a transformation
Regular	a regular shape has angles and sides of equal lengths
Invariant	a point that does not move after a transformation
Vertex	a point two edges meet
Horizontal	from side to side Vertical: from up to down

Sparx codes for this topic	
M139	Translation
M290	Reflections
M523	Rotational symmetry
M910	Rotate from a point

Rotate from a point (in a shape)

Original shape

Point of rotation

Image 90° clockwise

- 1 Trace the original shape (mark the point of rotation)
- 2 Keep the point in the same place and turn the tracing paper
- 3 Draw the new shape

Clockwise      Anti-Clockwise

Rotate from a point (outside a shape)

Image 90° anti-clockwise

Point of rotation

Original shape

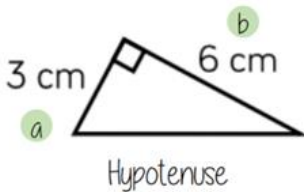
- 1 Trace the original shape (mark the point of rotation)
- 2 Keep the point in the same place and turn the tracing paper
- 3 Draw the new shape

# 9.11 Pythagoras' theorem .....

Key words	
Square number	the output of a number multiplied by itself
Square root	a value that can be multiplied by itself to give a square number
Hypotenuse	the largest side on a right-angled triangle. Always opposite the right angle
Opposite	the side opposite the angle of interest
Adjacent	the side next to the angle of interest

Sparx codes for this topic	
M677	Pythagoras in 2D
M147	Pythagoras in 3D

## Calculate the hypotenuse



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

1 Substitute in the values for a and b

$$3^2 + 6^2 = \text{hypotenuse}^2$$

$$9 + 36 = \text{hypotenuse}^2$$

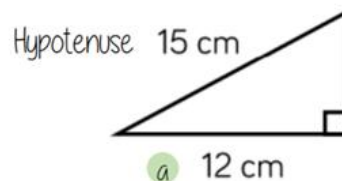
$$45 = \text{hypotenuse}^2$$

2 To find the hypotenuse square root the sum of the squares of the shorter sides

$$\sqrt{45} = \text{hypotenuse}$$

$$6.71\text{cm} = \text{hypotenuse}$$

## Calculate missing sides



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

$$12^2 + b^2 = 15^2$$

1 Substitute in the values you are given

$$144 + b^2 = 225$$

$$\begin{array}{r} -144 \qquad -144 \\ \hline \end{array}$$

Rearrange the equation by subtracting the shorter square from the hypotenuse squared

Square root to find the length of the side

$$b^2 = 111$$

$$b = \sqrt{111} = 10.54\text{ cm}$$

## What Makes a Good Song?

Exploring Popular Songs and Musical Arrangements

### A. Popular Song Structure

**SONG STRUCTURE** – How a song is made up of or divided into different sections (see below) and the order in which these sections occur. To work out the structure of a song, it's helpful to analyse the **LYRICS** and listen to a recording for the song (for instrumental sections).

**INTRO** – often shortened to 'intro', the first section of a song which sets the mood of the song and is sometimes, but not always, an instrumental section using the song's chord pattern.

**VERSES** – songs normally have several verses. Verses introduce the song's theme and have the same melody but different lyrics for each verse which helps develop the song's narrative and story. Songs made up entirely of verses are called **STROPHIC**.

**LINK** – a optional short section often used to join different parts of a song together, often instrumental, and sometimes joins verses together or appears at other points within a song.

**PRE-CHORUS** – an optional section of music that occurs before the **CHORUS** which helps the music move forward and "prepare" for what is to come.

**CHORUS** – occurs several times within a song and contains the most memorable **HOOK/RIFF**. The chorus relays the message of the song and is repeated with the same melody and lyrics each time it is heard. In popular songs, the chorus is often repeated several times towards the end of the song.

**MIDDLE 8/BRIDGE** – a section (often 8 bars in length) that provides contrasting musical material often featuring an instrumental or vocal solo using new musical material allowing the performer to display their technical skill on their instrument or voice.

**CODA/OUTRO** – The final section of a popular song which brings it to an end (Coda is Italian for "tail"!)

### B. Key Words

**LYRICS** – The words of a song, usually consisting of **VERSES** and a **CHORUS**.

**HOOK** – A 'musical hook' is usually the 'catchy bit' of the song that you will remember. It is often short and used and repeated in different places throughout the piece. Hooks can be either **MELODIC, RHYTHMIC** or **VERBAL/LYRICAL**.

**RIFF** – A repeated musical pattern often used in the introduction and instrumental breaks in a song or piece of music. Riffs can be rhythmic, melodic or lyrical, short and repeated.

**MELODY** – The main tune of the song often sung by the **LEAD SINGER**.

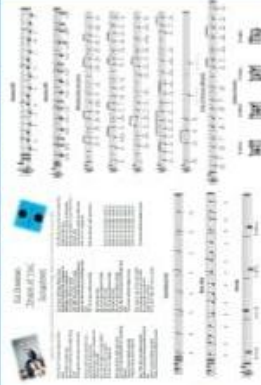
**COUNTER-MELODY** – An 'extra' melody often performed 'on top of' the main melody that 'fits' with it a **DESCANT** or **INSTRUMENTAL SOLO**.

**TEXTURE** – The layers that make up a song e.g., *Melody, Counter-Melody, Hooks/Riffs, Chords, Accompaniment, Bass Line*.

### C. Lead Sheet Notation and Arrangements

A **LEAD SHEET** is a form of musical **NOTATION** that contains only the essential elements of a popular song such as the **MELODY, LYRICS, RIFFS, CHORDS** (often as guitar chord symbols) and **BASS LINE**; it is not as developed as a **FULL SCORE ARRANGEMENT** and is open to interpretation by performers who need to use and adapt the given elements to create their own musical **ARRANGEMENT**; their "version" of an existing song.

**COVER (VERSION)** – A new performance, remake or recording by someone other than the original artist or composer of the song.



### D. Conjoint and Disjunct Melodic Motion

**CONJUNCT MELODIC MOTION** – Melodies which move mainly by step or use notes which are next to or close to one another.

**DISJUNCT MELODIC MOTION** – Melodies which move mainly by leap or use notes which are not next to or close to one another.

**MELODIC RANGE** – The distance between the lowest and highest pitched notes in a melody.



### E. Song Timbre and Sonority (Instruments that are used to Accompany Songs)



Pop Bands often feature a **DRUM KIT** and **PERCUSSION** to provide the rhythm along with **ELECTRIC GUITARS (LEAD GUITAR, RHYTHM GUITAR and BASS GUITAR)** and **KEYBOARDS**. Sometimes **ACOUSTIC INSTRUMENTS** are used such as the **PIANO** or **ACOUSTIC GUITAR**. **ORCHESTRAL INSTRUMENTS** are often found in pop songs such as the **STRINGS, SAXOPHONE, TROMBONE** and **TRUMPET**. Singers are essential to a pop song - **LEAD SINGER** – Often the "frontline" member of the band (most famous) who sings most of the melody line to the song. **BACKING SINGERS** support the lead singer providing **HARMONY** or a **COUNTER-MELODY** (a melody that is often higher in pitch and different, but still 'fits with' the main melody) and do not sing all the time but just at certain points within a pop song e.g. in the chorus.



# Personal Development

## Families, Relationships and Support

**Different Types of Families** - Families come in many forms. What matters is love, care and safety.

Nuclear family	Two parents and their child/children
Single-parent family	One parent raising children
Blended/stepfamily	Families formed after separation or new partnerships
Extended family	Wider family living together or nearby
Same-sex parents	Two mums or two dads raising children
Foster family	Children cared for temporarily by trained foster carers
Adoptive family	Children permanently placed with adoptive parents

### Parenting Styles & Responsibilities

Good parenting supports a child's physical, emotional and social needs. Responsibilities include:

- Keeping children safe
- Providing food, clothing and shelter
- Setting boundaries and routines
- Showing love, support and encouragement
- Supporting school and learning

### Positive Relationships in the Home

Healthy home relationships include:

- Respect - valuing each other's differences
- Communication - talking openly and listening
- Support - helping each other with worries or problems
- Fairness - sharing responsibilities
- Boundaries - everyone feeling safe and comfortable

Signs of *unhealthy* home relationships might include: shouting, controlling behaviour, fear or lack of support.

### Understanding Conflict

Conflict is a disagreement or clash of needs/viewpoints.

Common causes:

- Misunderstandings
- Stress and pressure
- Differences in values or opinions
- Changing relationships or family roles
- Jealousy or feeling left out
- Lack of communication

Conflict is normal - how it's managed matters.

# Personal Development

## **Conflict Resolution Skills**

Useful strategies include:

- Calm communication - using "I feel..." instead of blaming
- Listening - understanding the other person's perspective
- Compromise - finding a solution that works for both sides
- Taking time out - pausing discussions when emotions are high
- Seeking help - involving a trusted adult when conflict feels unsafe

## **Managing Relationship & Family Changes**

Families may experience:

- Separation or divorce
- New relationships or stepfamilies
- Moving home
- Illness or bereavement
- Changing responsibilities

Healthy ways to cope:

- Talk to a trusted person
- Keep routines where possible
- Give yourself time to adjust
- Use support organisations
- Express feelings safely (writing, talking, drawing, exercising)

## **Reducing Youth Homelessness**

Young people become homeless for various reasons, including family conflict, abuse, rejection or financial problems.

Prevention strategies:

- Accessing early help services
- Talking to trusted adults before problems escalate
- Mediation to solve family conflict
- Understanding your rights (local councils have a duty of care to young people in crisis)
- Staying engaged with school and services

## **Accessing Support Services**

Students can access support if home life or relationships feel difficult.

- School safeguarding team (blue lanyards)
- School counsellors
- Form tutor or Head of Year
- Early Help teams - support for families before problems become serious
- CAMHS - mental health support
- Youth services - advice on relationships, housing, safety etc.
- Local authority housing support
- Childline - 0800 1111
- The Mix - advice for under-25s
- Refuge - domestic abuse support
- Shelter - housing and homelessness guidance

# Personal Development

## Health & Wellbeing

**Physical Health** - means how well your body works. Key parts of physical health include:

- Eating a balanced diet
- Regular exercise
- Good hygiene
- Staying hydrated
- Avoiding harmful substances

Benefits: More energy, better concentration, improved mood, stronger immune system.

**Mental Health** - affects how you think, feel and copy with life. Positive mental health includes:

- Feeling able to cope with challenges
- Managing emotions in healthy ways
- Building supportive relationships
- Asking for help when needed

Common influences: social media, stress, sleep, friendships, school pressures.

## Balancing Work, Leisure, Exercise & Sleep

Work:

- Includes schoolwork, chores and responsibilities
- Avoid overload - use time management e.g. setting time limits for tasks

Leisure:

- Hobbies, sports, social time, reading, relaxation
- Helps reduce stress and build confidence

Exercise:

- Aim for 60 minutes of physical activity (even walking) daily
- Benefits: strong heart, better mood, improved sleep

Sleep:

- Aim for 8-10 hours per night
- Helps memory, focus, emotional regulation and immune health
- Avoid screens 1 hour before bed

## Making Informed Healthy Eating Choices

Use the Eatwell Guide:

- Plenty of fresh food
- Whole grains
- Lean proteins (fish, beans, eggs, chicken)
- Healthy fats (nuts, seeds, olive oil)

Reduce:

- Processed foods
- Sugary drinks
- Caffeine, especially energy drinks
- Excess salt and saturated fat

Read food labels:

- Check sugar, salt, fat and portion size

Listen to your hunger and fullness cues.

# Personal Development

## Managing Influences on Body Image

Influences include:

- Social media
- Peer comments
- Celebrities and influences
- Fashion and fitness industries

Remember:

- Photos online are often edited
- Healthy bodies come in all shapes and sizes
- Aim for health, not "perfection"

Strategies:

- Follow positive accounts
- Take breaks from social media
- Talk to someone if you're struggling

## Making Independent Health Choices

Being independent means:

- Researching information from trusted sources (NHS, teachers, doctors)
- Making decisions based on facts - not pressure
- Understanding risks and benefits

Examples:

- Choosing safer behaviours in friendships and relationships
- Deciding what to eat and how to exercise
- Managing your own appointments
- Knowing when to say no to harmful influences

## Taking Responsibility for Physical Health

General responsibility:

- Brush teeth twice a day
- Wash regularly
- Wear sun protection
- Avoid smoking, vaping, alcohol and drugs
- Attend medical check-ups

Self-examination

- A normal part of growing up and staying healthy
- Helps you notice if something changes in your body
- Examples: checking lumps, bumps or changes in skin. Being aware of changes during puberty
- If something doesn't feel right: Speak to a trusted adult, doctor or school nurse

## Accessing Support Services

- School safeguarding team (blue lanyards)
- School counsellors
- School nurses
- NHS 111 - non-emergency medical help
- Trusted adults - parents, carers, teachers
- Counselling services - wellbeing support

# Physical Education

## WADHAM KS3 PE KNOWLEDGE ORGANISER: Badminton

### Skills and Techniques:

**Ready Position:** side on, racket up and ready, on toes.

**Overhead Clear:** A defensive shot played high to the back of the opponent's court.

**Drop shot:** A shot played just over the net to draw your opponent to the net.

**Smash:** A powerful offensive/ attacking shot. The shuttle is hit at the highest point possible and travels at a steep angle to ensure the shuttle lands as close to the net as possible.

**Flick Serve:** Short serve which is played typically in doubles. Aim is to get the shuttlecock to stay low over the net and land just over the service line.

**Underarm serve:** Serve typically played in singles. The aim is to get the shuttle as high as you can towards the backline forcing your opponent to the back of the court

**Drive:** Is played from mid-court to mid-court and is a quick, flat, powerful counter-attacking shot. It can be both a backhanded and forehanded shot. When it is executed correctly, a player will force their opponent to hit an upward return.

### Rules:

\*The aim is to hit the shuttle with your racket so that it passes over the net and lands inside your opponent's half of the court.

\*When serving yours and your opponent's feet must be still

\*You serve to the diagonally opposite service box

When your score is even, your serve from the right-hand service box, when it's odd, your serve from the left hand box.

\*The service box is 'long and thin' for singles and 'short and fat' for doubles.

\*The side tramlines are not used for singles, but the back and side tramlines are all used for doubles.

\*The shuttle is in if it touches the line  
\*If you think the shuttle is going out of the court, you must let it drop to the ground to win the point.

\*You must not touch the net with your body or the racket

### Scoring System:

\*A 'rally point' system is used. This means whoever wins the rally is awarded a point (you don't have to be serving)

\* If you win the point you get to serve, you continue to serve until you lose a point

\*Games are played to 21 points, although they can be reduced (always to an odd number i.e. 11).

\*A game will continue until a player/pair wins by 'two clear points' (i.e. 21-19, not 21-10). This means the final scores may be higher than 21 (i.e. 25-23)

**Tactics** Every shot, you must try to 'place' the shuttle, not just return it. Hit the shuttle into space.

Play the shuttle to your opponent's backhand side as this tends to be weaker shot for most players.

Disguise your shots (pretend to smash- then play a drop shot

**Tactics Singles** Return to the centre of the court (centre position) after every shot to give you the best chance of reaching your opponent's return shots.

**Tactics Doubles** Partners can choose whether to play 'sides' or 'front and back' or a combination of the two.

### Key Words

Court  
Racket  
Shuttlecock  
Net  
Serve

### Key Words

Centre Position  
Rally  
Smash  
Clear  
Drive

### Key Words

Let  
Double Hit  
Fault  
Drop Shot

# Physical Education

## WADHAM KS3 PE KNOWLEDGE ORGANISER: Basketball

### Skills and Techniques:

**Dribbling** Used to keep possession of the ball and travel around the court. The ball should be kept close to the body at all times (under control). Use your finger tips to 'push' the ball into the floor. Keep your eyes up.

**Shooting** Focus eyes on the target. Point feet towards 11 o'clock, elbow under the ball. Use your knees to generate power, Roll the ball off the fingertips to create back spin. 'Hand in the cookie jar' follow through.

**Passing** Used to move the ball up the court quickly. Another way for the team to maintain possession. Can be used to find a better scoring or dribbling opportunity. There are four types; chest, bounce, shoulder and javelin.

### Rules:

- A game consists of four, 10-minute quarters.
- There are 2 or 3 referees.
- The game is started with a tip-off. The referee throws the ball in the air. Opposing players must try and win the ball by hitting it back to their teammates.
- The ball can move up the court by passing or dribbling.
- A player can only use one hand at a time to dribble the ball. A player can no longer dribble when they put two hands on the ball.

### Tactics:

Defending tactics- Full court and half court press

Attacking tactics - rebounding and manipulating the speed of play.

### Positions:

5 players in a team

**Point guard** directs play going forward.

**Shooting guard** is the main shooter in the team but it is usually from long distance.

**Small forward** is normally the tallest player, shooting is a part of their game.

**Centre** will look to score from close to the basket and also block shots and deal with rebounds.

**Power Forward** specialises on the rebounds and defence.

### Scoring System:

#### Inside three-pt line

Baskets scored within the 3-point lines are worth two points

**Outside the three-pt line.** These baskets will be rewarded with 3 points.

**Free throw line** A free throw is worth one point. It is an unchallenged shot at the basket. This is awarded after a technical foul, or a personal foul on a player in the act of shooting.

### Key Words:

- Chest pass
- Bounce pass
- Overhead pass
- Javelin pass
- Dribbling
- Triple threat
- Double dribble

### Key Words:

- Basket
- Backboard
- Key
- Free throw
- Lay-up
- Tip-off
- Travelling
- Hand in the cookie jar

# Physical Education

## 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

# Physical Education

## 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, lifting ball 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

# Science – 9F

## Physical changes and chemical reactions

Physical changes	Chemical reactions
Do not make new substances.	Always make one or more new substances.
Are often easy to reverse.	Are usually difficult to reverse.
The substances may change state or just be mixed together.	The new substances have different properties from the original substances.
Examples include: melting, boiling, condensing, freezing.	Examples include: combustion, neutralisation, thermal decomposition.

## Gas pressure

Gas pressure is caused by the force of the particles hitting the walls of the container.

Change that increases pressure	Reason
increase the temperature	the particles move faster and so hit the walls of the container with more force and more often
increase the number of particles in the container	the particles are closer together and hit the walls of the container more often
decrease the volume of the container	the particles are closer together and hit the walls of the container more often

## The reactivity series

This is a list of metals in order of reactivity, with the most reactive at the top.

The metals that react with water produce a metal hydroxide and hydrogen.

The metals that react with dilute acids produce a salt and hydrogen.

Most metals react with oxygen from the air to form metal oxides. This is an **oxidation** reaction.

### Rusting of iron

Steel is an alloy containing iron mixed with small amounts of carbon and sometimes other metals. Iron and steel need air and water to rust. Salt makes them rust more quickly than usual.

Rusting can be prevented by:

- a physical barrier to stop the air and water being in contact with the iron
- sacrificial protection, in which blocks of a more reactive metal, such as zinc or magnesium, are attached to the iron. They then corrode instead of the iron.

Stainless steel is an alloy of iron containing chromium and it does not rust.

Metal	Reaction with oxygen in air	Reaction with cold water	Reaction with dilute acid
potassium	☄	☄	☄
sodium	☄	✓✓✓	☄
lithium	☄	✓✓	✓✓✓
calcium	☄	✓✓	✓✓✓
magnesium	☄	✓	✓✓
aluminium	✓✓✓	•••	✓✓
zinc	✓✓	•••	✓✓
iron	✓✓	•••	✓
tin	✓	•••	✓
lead	✓	•••	✓
copper	✓	X	X
mercury	•••	X	X
silver	•••	X	X
gold	X	X	X
platinum	X	X	X

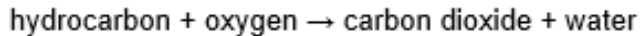


Key		
☄ explosive	☄ can catch fire	✓✓✓ reacts very quickly
✓✓ reacts quickly	✓ reacts	••• slow or partial reaction
X no reaction		

# Science – 9F

## Hydrocarbons

These substances contain hydrogen and carbon only. They burn in a plentiful supply of air to form carbon dioxide and water:



The test for oxygen is that it relights a glowing splint.

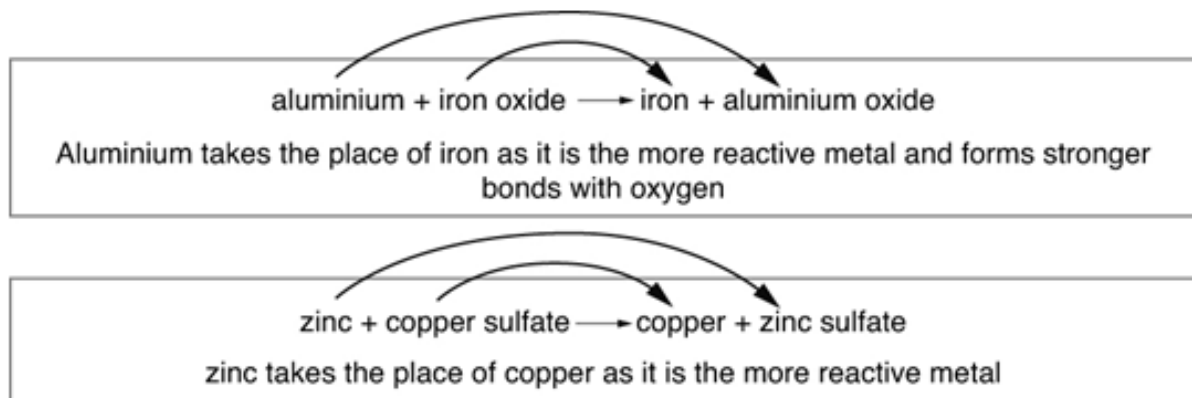
An input of energy from a flame or spark is needed to start the combustion reaction by breaking some bonds in the reactants. Explosive mixtures contain an **oxidising agent** to provide extra oxygen for the reaction.

## Energy changes

- Exothermic reactions transfer energy from the reactants to the surroundings. The temperature of the surroundings increases.
- Endothermic reactions use energy transferred from the surroundings to the reactants. The temperature of the surroundings decreases.

## Displacement reactions

In a **displacement reaction** a more reactive metal takes the place of a less reactive metal in a compound.



## Extracting metals

- Most metals occur as compounds in ores in the Earth's crust. Only a few, such as silver and gold, occur as the metallic element.
- The metals high in the reactivity series are difficult to chemically extract from their ores and their isolation has happened relatively recently.
- The metals lower in the reactivity series are easier to extract from their ores and they have been available to use as the pure elements for much longer.
- Metals from zinc downwards in the reactivity series can be extracted from their ores by heating with carbon.
- Metals above zinc in the reactivity series need electrolysis to extract them from their ores.
- Oxidation is the gain of oxygen. **Reduction** is the loss of oxygen.

## Percentage loss or gain

This is the  $\frac{\text{actual change}}{\text{original amount}} \times 100$

# Science - 9J

## Force fields and electromagnets

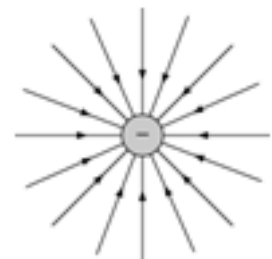
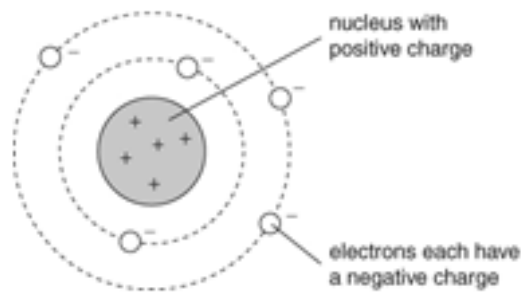
### Static electricity

An atom consists of a central **nucleus** with small particles called **electrons** moving around it. An atom normally has no overall **charge** because it has the same number of positive and negative charges.

When you rub two materials together, electrons may be transferred from one material to the other. If the objects are insulating materials, the object that gains electrons has a negative charge of **static electricity**. The object that loses electrons has a positive charge.

A positively charged object will attract a negatively charged object. Two objects with the same charge (both positive or both negative) will repel each other.

The space around a charged object where it will attract or repel other charged objects is its **electric field**. The arrows on the diagram show the direction a positive charge would move.



### Resistance

The **resistance** of a component is a way of saying how easy or difficult it is for an electric current to flow through it. The size of a current depends on the resistance of the circuit and on the voltage that is 'pushing' the current:

- the higher the voltage, the higher the current (if the resistance stays the same)
- the higher the resistance, the lower the current (if the voltage stays the same).

All metals conduct electricity, but some metals are better conductors than others. The resistance of a wire depends on:

- the material from which it is made
- its length (longer wires have higher resistances)
- its thickness (thicker wires have lower resistances).

### Calculating resistance

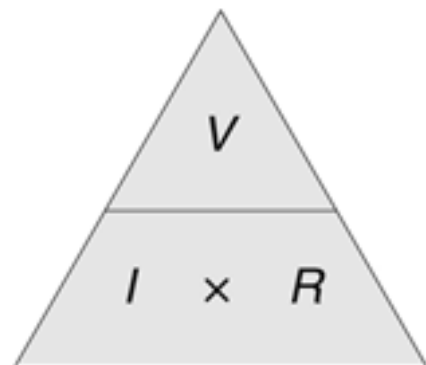
The units for measuring resistance are **ohms**, and the symbol is the Greek letter omega ( $\Omega$ ).

Voltage, resistance and current are related by this formula:

$$\text{voltage} = \text{current} \times \text{resistance}$$

To calculate a resistance, you need to measure the current in amps and the voltage in volts.

$$\text{resistance} = \frac{\text{voltage}}{\text{current}}$$



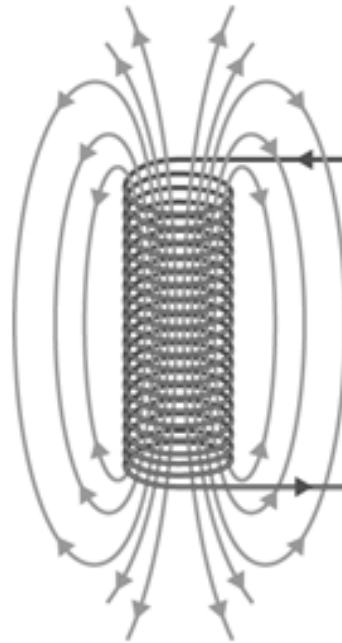
# Science - 9J

## Electromagnets

A bar magnet is a **permanent magnet**, because it is always magnetic. A wire with electricity flowing through it has a **magnetic field** around it. An **electromagnet** is a coil of wire with an electric current flowing through it. It is only magnetic while the current is flowing. The shape of the magnetic field of an electromagnet is **similar** to the magnetic field of a bar magnet.

You can make an electromagnet stronger by:

- increasing the number of coils of wire
- increasing the size of the current (by increasing the voltage)
- using an iron core.



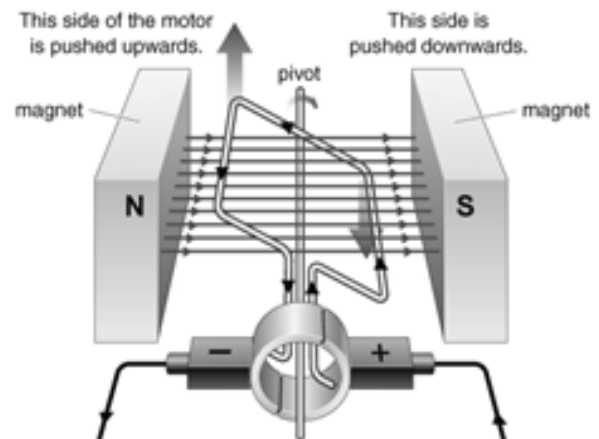
## Motors

If a wire carrying a current crosses a magnetic field, the wire will experience a force. This is the **motor effect**.

An electric motor consists of a coil of wire in a magnetic field. When there is a current in the coil, there is a force on each side of the coil that makes it turn.

The speed of the motor (or the force it provides) can be increased by:

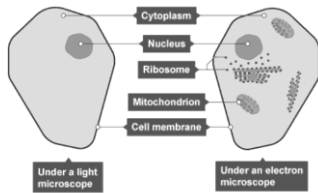
- increasing the size of the current
- increasing the strength of the magnetic field
- increasing the number of turns of wire on the coil.



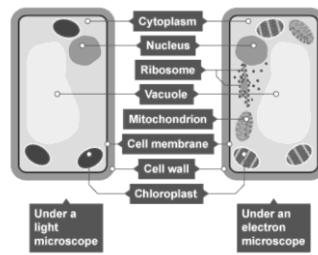
# Key concepts in biology – Cells and microscopy

## Cells

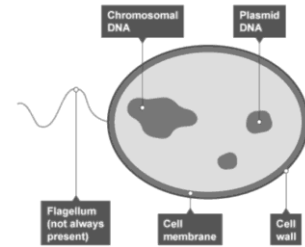
You need to know about animal, plant and bacterial cells.



Animal



plant



bacteria

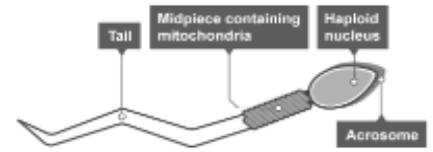
Structure	Job / Function	Found in
<b>Chloroplast</b>	Absorbs light energy for photosynthesis; contains chlorophyll and enzymes needed.	Plants
<b>Cell Wall</b>	Provides structure and protection; plant walls made of cellulose.	Plants, Bacteria
<b>Permanent Vacuole</b>	Filled with cell sap to keep cell turgid (swollen).	Plants
<b>Cytoplasm</b>	Jelly-like material where chemical reactions occur; contains organelles.	Plants, Animals, Bacteria
<b>Nucleus</b>	Contains genetic material (DNA) and controls cell activities.	Plants, Animals
<b>Cell Membrane</b>	Controls movement of substances in and out of the cell (selectively permeable).	Plants, Animals, Bacteria
<b>Mitochondria</b>	Site of respiration; releases energy and contains enzymes for respiration.	Plants, Animals
<b>Ribosomes</b>	Site of protein synthesis.	Plants, Animals, Bacteria
<b>Chromosomal DNA</b>	Main DNA in bacteria; loose in cytoplasm (not in a nucleus).	Bacteria
<b>Plasmid DNA</b>	Small circular DNA in bacteria; can transfer between cells for variation.	Bacteria
<b>Flagella</b>	Tail-like structure for movement; rotates or whips to propel bacterium.	Bacteria

# Key concepts in biology – Cells and microscopy

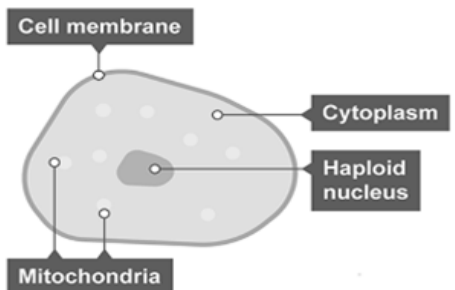
## Specialised cells

Cell Type	Adaptations
<b>Sperm Cell</b>	<ul style="list-style-type: none"> <li>- Tail (flagellum) for swimming toward egg</li> <li>- Many mitochondria for energy</li> <li>- Streamlined shape for fast movement</li> <li>- Acrosome with enzymes to penetrate egg</li> <li>- Haploid nucleus for correct chromosome number</li> </ul>
<b>Egg Cell</b>	<ul style="list-style-type: none"> <li>- Large size with nutrient-rich cytoplasm</li> <li>- Provides energy for embryo development</li> <li>- Haploid nucleus for fertilization</li> <li>- Outer membrane changes after fertilization to block other sperm</li> </ul>
<b>Ciliated Epithelial Cell</b>	<ul style="list-style-type: none"> <li>- Cilia beat in waves to move substances (e.g., mucus or egg)</li> <li>- Thin mucus layer traps dust and pathogens</li> <li>- Specialized shape for efficient movement</li> </ul>

Sperm



Egg cell



Ciliated epithelial cell

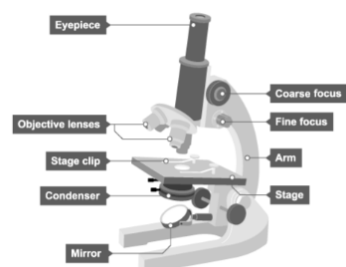


## Microscopes

	Light Microscope	Electron Microscope
<b>Source</b>	Visible light	Beam of electrons
<b>Magnification</b>	Up to <b>×1,500</b>	Up to <b>×500,000</b> or more
<b>Resolution</b>	About <b>0.2 μm</b>	About <b>0.0002 μm (0.2 nm)</b>
<b>Detail Visible</b>	Cells and large organelles	Ultrastructure (ribosomes, membranes, viruses)
<b>Specimen State</b>	Can view <b>living specimens</b>	Specimens must be <b>dead</b> (vacuum and staining)

How to prepare a slide using a light microscope (core practical)

1. Choose and collect a small cell sample.
2. Place sample on a slide with water or stain.
3. Add coverslip carefully to keep specimen flat.
4. Observe under microscope, starting with low magnification.
5. Draw and label what you see.

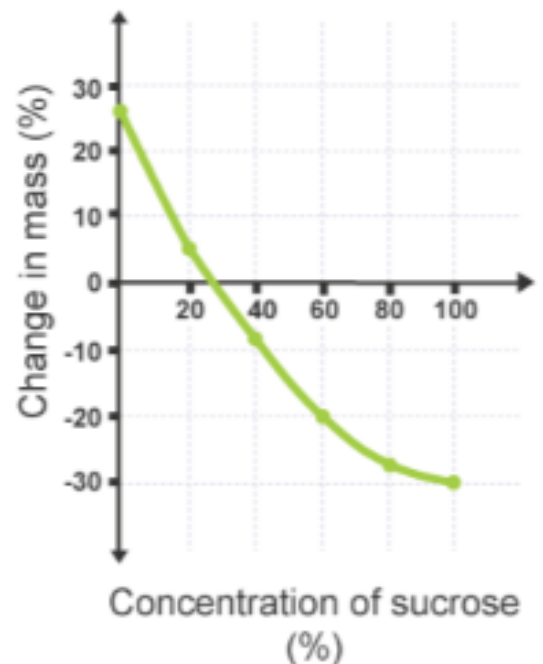


## Key concepts in biology – transporting substances

Feature	Diffusion	Osmosis	Active Transport
<b>What moves</b>	Particles (e.g., gases, solutes)	Water molecules	Particles (e.g., ions, glucose)
<b>Direction</b>	High concentration → Low concentration	High water concentration → Low water concentration	Low concentration → High concentration
<b>Requires energy?</b>	No (passive process)	No (passive process)	Yes (uses energy from respiration)
<b>Membrane needed?</b>	Not always	Yes (partially permeable membrane)	Yes (cell membrane with carrier proteins)
<b>Example</b>	Oxygen diffusing into cells	Water entering plant root cells	Mineral ions absorbed by plant roots

## Osmosis core practical

1. Label tubes with sucrose concentrations.
2. Cut similar-sized potato pieces.
3. Blot dry, measure initial mass.
4. Place each potato in its solution and cover.
5. After 15+ minutes, remove, blot dry, and measure final mass.

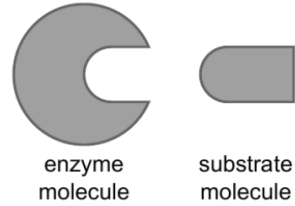


# Key concepts in biology – enzymes

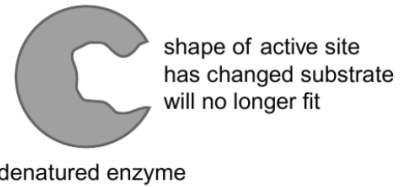
## How do enzymes work?

- Enzymes are proteins that act as biological catalysts, speeding up chemical reactions without being changed.
- They have a specific 3D shape with an active site where the substrate fits.
- Lock and Key Hypothesis: The active site's shape matches the substrate, making enzymes highly specific.
- Enzymes can break down molecules or join smaller molecules together.
- Denaturing: Extreme pH or high temperature changes the enzyme's shape, so the substrate no longer fits, stopping the reaction.

## normal conditions



## extreme conditions

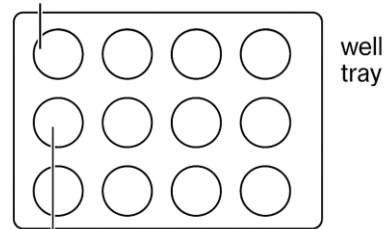


**D** Changes in an enzyme's environment can change the shape of the active site.

## Enzyme core practical

- Heat water bath to **40°C** and keep temperature constant.
- Add iodine drops to a well tray.
- Measure **2 cm<sup>3</sup> amylase** and **1 cm<sup>3</sup> pH solution** into a tube.
- Add **2 cm<sup>3</sup> starch**, mix, and place tube in water bath.
- Every 20 seconds, test mixture with iodine until color stops changing.
- Repeat with different pH solutions.

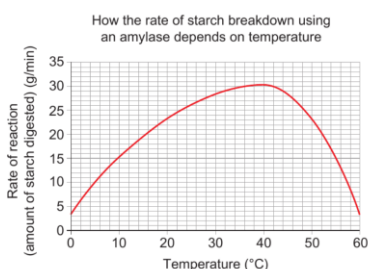
A blue/black colour indicates the presence of starch.



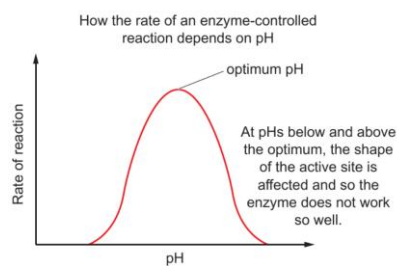
A yellow/orange colour that no longer changes indicates that the reaction is complete.

**B** iodine solution is used to indicate the presence of starch

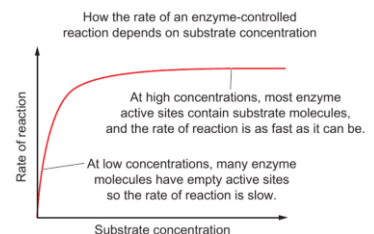
The rate of an enzyme-controlled reaction depends on the temperature, pH and substrate concentration.



**B** the data in graph A shown as a rate of reaction graph



**D** the effect of pH on the rate of an enzyme-controlled reaction



**E** the effect of substrate concentration on the rate of an enzyme-controlled reaction



# Academic Vocabulary



<b>Sequencing</b>	<b>Comparing</b>
First (ly) Second (ly) Third (ly) Subsequently Finally In conclusion	Similarly Likewise Like In the same way Equally Akin to
<b>Contrasting</b>	<b>Qualifying</b>
Alternatively Conversely On the other hand In contrast Instead Besides	However Although But Except Notwithstanding Nonetheless
<b>Supporting</b>	<b>Emphasising</b>
Moreover Furthermore Also Additionally	Significantly Indeed Notably Significantly
<b>Exemplification</b>	<b>Time</b>
For example Such as Illustrated by For instance	Meanwhile Since Before After

# Oracy @ Wadham School

## Projection



Project your voice so all that should hear can hear

## Body Language



Use of gesture and position

## Good Talk



If you disagree, use respectful language

## Listen



Show you are actively listening

## Eye Contact



Eye contact shows Belonging

### SAYING OR STATING AN IDEA

I think ...  
I strongly believe ...  
It is my opinion that...

### CLARIFYING OR CHECKING

Please could you clarify that?  
Please could you explain what you mean?

### SEEING THINGS FROM A DIFFERENT PERSPECTIVE OR VIEWPOINT

What if ...  
Some people think ...

### SUPPORTING OR AGREEING

I agree ...  
I agree with Sarah because ...

### CHALLENGING OR DISAGREEING

I have a different idea ...  
I disagree ...  
I would like to challenge something that Samia said ...  
I would like to respectfully challenge ...

### EXPANDING OR BUILDING ON

Adding to what Zack said ...  
Building on what Ella said ...  
I have been listening carefully, and I would like to add a new point ...

### PARAPHRASING OR REWORDING

I think Mo is saying that ...  
In other words, Matt is saying ...

### THINKING ALOUD OR SHARING PARTIAL THINKING

Why is it that ...?  
I am wondering if ...  
I'm not certain but ...  
I'm not completely sure but what I'm thinking is ...

### JUSTIFYING OR GIVING REASONS

Because ...  
If ... then ...  
I know ... because ...

### ASKING FOR THINKING TIME OR HELP

I'm not sure yet. Please can I have some time to think?  
I'm a bit confused about ...  
Please can I talk to a partner?  
I'm stuck because ...  
Please could you speak a bit louder?  
Please could you repeat the question?

### PASSING ON THE DIALOGUE

Ali, what do you think?  
Ben, what do you think about what I said?  
Jo, do you agree or disagree?

### CONCLUDING OR END WORDS

My final thoughts are ...  
There are lots of powerful arguments, but my own opinions is ...  
For me, the strongest argument is ...



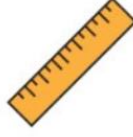
# The Learning Eight



Pen  
(Blue or Black)



Ruler



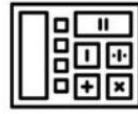
Pencil



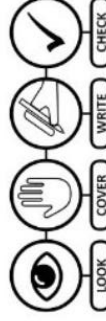
Purple Pen



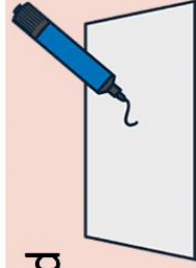
Calculator



Knowledge Organiser



Mini-Whiteboard



Whiteboard Pen

