Year 8
Knowledge Organisers and Self-Quizzing Pack

Summer Term

Name: ...........................................

Form: ............................................
What are Knowledge Organisers?

Knowledge Organisers are revision materials containing the key information that you need to know, in order to be successful in your assessments. They are designed in a way to help you store key bits of information together and help you to visualise the layout of the page, which in turn helps you to memorise the information better. Knowledge organisers are a summary of everything you have learned in your lessons.

How to use Knowledge Organisers?

Like all study, learning content takes time and purposeful focus. Your knowledge organisers are where you will find all of the key knowledge to help you answer the self-quizzing questions. They need to be regularly reviewed to help store the knowledge in your memory, and access it during your assessments. To use the Knowledge Organisers well, you should:

- Spend time (approximately 15mins) reading one topic within one subject of the knowledge organiser.
- You might want to rewrite some key notes, write on flashcards or draw mind maps to help you pull out key information.
- You might want to read your knowledge organisers aloud (this help some people to remember more easily)
- You might want to read one section, cover up that section, and then test yourself. You can then check to see how much you have remembered.
- Regularly re-read and review (even when you think you know it!)
What is self-quizzing?

Research about study tells us that one of the most effective techniques for revision is to self-test. We know that this is what the most successful students do!

When most students think about tests, they don’t particularly like the idea. They associate testing with long, difficult exams sat in a classroom or in the exam hall. However, self-testing for revision should not be like this at all. It should be relatively quick and simple, and it isn’t a big deal if you get a question wrong.

How to self-quiz?

To self-quiz effectively you will need the following:

1. Knowledge organisers (all in this pack) and any other revision materials you may have/use
2. List of topics on the exam
3. Self-quiz questions
4. A blue/black pen and a red pen
5. Your revision book

You will spend some time revising a particular subject and topic. You will then complete the self-quizzing questions related to that topic. It is essential that you self-mark (in red) your answers and write the correct answer in. You should then redo your incorrect questions.

You will complete all of your self-quizzing in your self-quizzing book, which is brought into school every day and is regularly monitored by your Form Tutor.

Ensure that you complete all subjects and all topics – not just the subjects you enjoy the most of find easiest!

Practice makes perfect!
# Animal Farm: Knowledge Organiser

## Chapter Breakdown

1. The animals gather to listen to old Major. He gives them a vision of a life without man.
2. The animals rebel and overthrow Jones. The commandments are written.
3. The animals' first harvest is a success. The pigs keep the milk and apples to themselves.
4. The Battle of the Cowshed: Jones attempts to reclaim the farm.
5. Snowball and Napoleon debate the windmill. Napoleon uses dogs to chase Snowball from the farm. Napoleon makes himself leader.
6. Work begins on the windmill. The pigs move into the farmhouse. Winds destroy the windmill.
7. Work on the windmill starts again. Napoleon demands eggs from the hens. Napoleon slaughters animals at the show trials.
8. Napoleon betrays Mr. Pilkington and sells timber to Mr. Frederick. Frederick pays with counterfeit money. Frederick attacks the farm. The animals suffer losses in the Battle of the Windmill. The windmill is destroyed.
9. Boxer is sold to the knacker’s yard.
10. The pigs are leaders on the farm. They start walking on two legs and carrying whips. There is no difference between the pigs and the humans they sought to overthrow at the start of the novel.

## The Seven Commandments

1. Whatever goes upon two legs is an enemy.
2. Whatever goes upon four legs, or has wings, is a friend.
3. No animal shall wear clothes.
4. No animal shall sleep in a bed.
5. No animal shall drink alcohol.
6. No animal shall kill any other animal.
7. All animals are equal.

## Characters

**Napoleon**
- 'a large, rather fierce-looking Berkshire boar, the only Berkshire on the farm, not much of a talker, but with a reputation for getting his own way.'

**Snowball**
- 'a more vivacious pig than Napoleon, quicker in speech and more inventive, but was not considered to have the same depth of character.'

**Squealer**
- 'with very round cheeks, twinkling eyes, nimble movements, and a shrill voice. He was a brilliant talker, and when he was arguing some difficult point he had a way of skipping from side to side and whisking his tail which was somehow very persuasive. The others said of Squealer that he could turn black into white.'

**Boxer**
- 'an enormous beast, nearly eighteen hands high, and as strong as any two ordinary horses put together... in fact he was not of first-rate intelligence, but he was universally respected for his steadiness of character and tremendous powers of work.'

## Key Words

- **allegory** – A story with two meanings. It has a literal meaning, which is what actually happens in the story. But it also has a deeper meaning. The deeper meaning is often a moral. It teaches you a lesson about life.

- **tyrant** – Someone who has total power and uses it in a cruel and unfair way. A tyranny is a situation in which a leader or government has too much power and uses that power in a cruel and unfair way.

- **rebellion** – A rebellion is a situation in which people fight against those who are in charge of them.

- **harvest** – The time when crops are cut and collected from fields.

- **corrupt** – When people use their power in a dishonest way order to make life better for themselves.

- **propaganda** – Information that is meant to make people think a certain way. The information may not be true.

- **cult of personality** – A cult of personality is where a leader convinces people to worship him or her, and treat them like a god.

- **treacherous** – If you betray someone who trusts you, you could be described as treacherous.

## Biographical Information

1. 'Animal Farm' was written in 1945.
2. It was written by George Orwell.
3. Orwell was born in 1903.
4. 'Animal Farm' was influenced by the events of World War II.
5. Orwell wanted to write about the cruel leaders of Europe during World War II.
6. 'Animal Farm' is an allegory for the events of the Russian Revolution.
**Year 8 – Decimals and Ratio**

**Ratio**
- Is the relationship between two or more quantities.
- It is written in the form $a : b$.
- Compares one part to another part.
- The ratio of red to blue is 4 : 5.
- The ratio of blue to red is 5 : 4.
- Sentence structure is important!
- Simplifying Ratios
  - $12 : 8 \div 2 = 6 : 4 \div 2 = 3 : 2$
  - Divide all numbers by the same value.
- The ratio of boys to girls in a Geography class is 15 : 5.
- What fraction of the class is girls?
  - $\frac{5 \text{ girls}}{20 \text{ total parts}} = \frac{1}{4}$

**Sharing in a given ratio**
- Find total number of parts.
- Find value of one part.
- Multiply by original ratio.
- Share $40$ in the ratio $3 : 5$.
  - $3 + 5 = 8$
  - $40 \div 8 = 5$
  - Each part of the ratio is worth $5$.
- Divide amount by number of parts.
- Multiply by original ratio.
- $3 : 5 \times 5 = 15 \div 25$
- Mark and John have sweets in the ratio $3 : 4$, if Mark has 27 sweets.
  - How many does John have?
  - $27 \div 3 = 9 \text{ sweets per part}$
  - $4 \times 9 = 36 \text{ (John’s sweets)}$  

**Direct Proportion**
- As one value increases, the other increases at the same rate.
- Three coffees cost £7.50, how much would five coffees cost?
  - Find the value of one coffee then multiply by quantity needed.
  - £7.50 ÷ 3 = £2.50 per coffee
  - £2.50 × 5 = £12.50

**Inverse Proportion**
- As one value increases, the other decreases at the same rate.
- It takes 3 men 4 days to build a wall. How long would it take 2 men?
  - Find the time taken by one man then divide by quantity stated.
  - $3 \text{ men} \times 4 \text{ days} = 12 \text{ days}$
  - $12 \text{ days} \div 2 \text{ men} = 6 \text{ days}$
Year 8 – Stats, graphs and charts

**Mean**
- Mean = \( \frac{\text{Total of all values}}{\text{number of values}} \)
- Mean = \( \frac{3, 3, 4, 5, 5, 8, 9, 15}{8} = 6.5 \)

**Median**
- Median = Middle value (Numbers written in order)
- Median = 5

**Mode**
- Mode = Most common value/item

**Range**
- Range = Largest - Smallest
- Range = 15 - 3 = 12

**Bar Charts**
- Hours Worked per Week
- Hours Worked: 0, 10, 20, 30, 40
- Bar labels: Barry, Mary, Naseem, Ellie
- Ellie = 40 hours

**Pie Charts**
- Nationality: Spanish, British, French, German
- Total Guests: 72
- Spanish = 30, 150°
- British = 24, 120°
- French = 10, 50°
- German = 8, 40°
- Find degrees per value (360°/total)
- 1 Guest = \( \frac{360°}{72} = 5° \)

**Scatter Graphs**
- Labour Party Electoral Performance
- Seats won vs. Vote (%)
- Linear relationship: Seats won = \( \text{Vote (%)} \times 232 \)

Ezytown FC have scored an average of 3.8 goals per game in their last 15 matches. How many goals have they scored?
- 3.8 \times 15 = 57 goals

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<th>Cars</th>
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<tr>
<td>Sum</td>
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</table>
Year 8 - Straight line graphs

A set of values that indicate the position of a point.
They normally occur in pairs in the form \((x, y)\).

\((x, y)\)
- Direction along the \(x\)-axis
- Direction up/down the \(y\)-axis
- Along the corridor
- Up, Down the stairs

Start from a central point \((0,0)\) - Origin

Reading the coordinates will lead you to the exact position.
- \((7, -4)\) → Seven units right, Four units down
- \((-2, 6)\) → Two units left, Six units up
- \((-5, -2)\) → Five units left, Two units down

Direct Proportion
- As one value increases, the other increases at the same rate
- Three Coffees cost £7.50,
  How much would five Coffees cost?
- Find the value of one coffee then multiply by quantity needed
  \(£7.50 ÷ 3 = £2.50 \text{ per coffee}\)
  \(£2.50 \times 5 = £12.50\)

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- As one value increases, the other decreases at the same rate
- It takes 3 men 4 days to build a wall.
  How long would it take 2 men?
- Find the time taken by one man then divide by quantity stated
  \(3 \text{ men} \times 4 \text{ days} = 12 \text{ days}\)
  \(12 \text{ days} ÷ 2 \text{ men} = 6 \text{ days}\)

Plotting coordinates

Vertical lines \(\rightarrow x = ?\)

Horizontal lines \(\rightarrow y = ?\)

\(y = mx + c\)
- Gradient
- \(y\) intercept

Gradient is the ‘steepness’ of the line

Calculated by
- \(\frac{\text{Change in } y}{\text{Change in } x}\) or \(\frac{\text{Rise up}}{\text{Run along}}\)

All straight line graphs follow the same rule

\(y = mx + c\)
**Measuring Development**

Development measures how economically, socially, culturally or technologically advanced a country is. It suggests: advancement, evolution, expansion, growth, improvement, increase, maturity, progress, changes for the better.

**Development Indicators**

- **GNI**: Gross National Income (Money earned by residents of a country including money earned abroad).
- **HDI**: Human Development Index. Calculated using life expectancy, education, and per capita income.
- **Infant mortality**: The average number of deaths of infants under 1 year of age, per 1000 live births, per year.
- **Literacy rate**: The % of adults that read and write acceptably.
- **GDP**: Gross Domestic Product - The total amount of money generated by a country from good and services.

**Classifying the World’s Development**

- An **HIC** has an GNI per capita of over $12,000.
- A **NEE** has an economy that is rapidly progressing.
- A **LIC** has a GNI per capita of below $800.
- North of Brandt line – mostly **HICs**
- South of Brandt line – mostly **LICs**

In the 1980’s, Dr Brandt classified the world into the rich north and the poor south. He drew this line called the Brandt Line or the North-South Divide. However, over time countries in the south began to develop e.g. Singapore and China, and the line became outdated. Also, the idea of simply **HICs and LICs** is too simplistic – what about Newly Emerging Economies (NEEs) e.g. China, India, Brazil?

**Factors Causing Uneven Development**

- **Physical Environment**
  - Areas without fertile land, natural resources, water and energy suffer.
  - Natural hazards (droughts, hurricanes, flooding) make little progress with development e.g. Haiti.
  - Landlocked countries are mostly in Africa – without access to the sea, countries cannot benefit from coastal trade.
- **Health**
  - Diseases can make people too weak to work or go to school.
  - 80% of all developing world disease is water-related. 2 million die a year.
  - LICs are unable to invest in good quality healthcare

**Trade**

- **Trade blocs** favour member states.
- Primary products sold by LICs are sold for cheap prices that can fluctuate. HICs make more expensive products so earn more.
- Poor infrastructure or conflict means some people cannot sell their goods at all.
- HICs exploit LICs with low wages and cheap manufacturing costs, and processes products (which adds value) in the HIC, meaning the poor country does not gain much profit, and the HIC does.

- **History**
  - Colonialism: Many countries in Asia, South America and Africa have spent a lot of time and money on civil wars and political struggles for power since being made separate from European superpowers.
  - During the period of Colonialism, many LICs in Africa were subjected to the slave trade and were exploited of their natural resource (e.g. gold, oil, minerals).
  - Many LICs haven’t had time to develop fully, since gaining their independence.

**Factors that effect population structure**

- High birth rates – wide base
- Low birth rates – narrow base
- Long life expectancy – wide top
- Short life expectancy – narrow top

**Solutions to Uneven Development**

- **TNC investment**: Transnational corporations can choose to invest money into LICs to increase their profits, for example developing infrastructure E.G. water, roads, electricity.
- **Fair Trade**: Ensuring that the worker in LICs get a fair wage for the work they do
- **Aid**: When a country or NGO donates resources to another country to help develop it or improve peoples lives. E.g Oxfam – money, medicine, food.
- **Microfinance loans**: Providing loans to help people set up a business to help themselves, without extremely high interest rates.

**Y8 – Unit 3**

**Population and Development**

**Key terms**

- **Standard of living** refers to the economic level of a person’s daily life. **Quality of life** is a social measure of well being.
### Benefits

- People are living longer and enjoying longer fuller, healthier lives.
- Older people could be given the choice to work longer, if they wanted to.
- Older people could then use the benefit of their experience and knowledge to fully benefit society.
- Younger retired people contribute lots to the economy. They have reasonable amounts of money and lots of leisure time hence are good consumers.
- Many retired people do voluntary work in schools and for charities that is essential work but done for free.
- Many retired grandparents are now fulfilling child care roles for their grandchildren as the cost of child care rises. This vital role unifies the extended family and allows parents to work and contribute to the economy.

### Issues

- The increasing number of very old people has put a strain on healthcare services and social care services.
- Health care is in ever increasing demand in the UK and it is proven that the elderly visit their doctor more often and have more home visits. They also occupy hospital beds for longer. The government of a country has to find money to pay for this care.
- Many countries face a pensions crisis whereby there is not enough money to cover the increasing pension demands of a population. In the UK the wages of the current generation pay the pensions of today’s OAPs, but with decreasing numbers of young and working age and increasing numbers of elderly it will become more and more expensive to pay for this. This may cause the government to continue to increase the pension age.
- Maintaining a dignified quality of life for our elderly is also a big moral issue.
- The government and local councils may have to spend additional money ensuring that there are enough services available to allow people to have a good quality of life in their later life, e.g. leisure facilities, appropriate housing for older people.
- Less people of working age means a lower number of workers so the economy shrinks and the tax base of the country also shrinks.

### Exam Top Tips:

**BUG the Question:** Box the command word, underline key parts of the question, glance back over question! (Read every question twice!)

**Use data!!** From tables, graphs, maps, pictures, figures!! Always use as much information as available!!

**Describe:** Say what you can see! Describe trends, patterns, and anomalies?

**Explain:** Give reasons why and details! Phrases such as “This means that...” “As a result...” “This causes...”

**Evaluate:** Give two sides of arguments, pros and cons, advantages or disadvantages, then conclusion linking back to question.

### Additional Revision

BBC Bitesize – Geography – Development / Population
www.coolegeography.co.uk

BBC Documentary – “Ageing and Caring” https://www.bbc.co.uk/programmes/p011f6mg
Les domiciles
J’habite dans ...
une grande maison
une petite maison
un grand appartement
un petit appartement
une grande ville
une petite ville
un grand village
un petit village
Je voudrais habiter ...
à la campagne
à la montagne
au bord de la mer
dans un vieux château
dans une vieille chaumière
dans une ferme

Homes
I live in...
a big house
a small house
a big flat
a small flat
a big town
a small town
a big village
a small village
I’d like to live ...
in the country
in the mountains
at the seaside
in an old castle
in an old cottage
on a farm

Les prépositions
dans
devant
derrière
sous
sur

Prepositions
in
in front of
behind
under(neath)
on

Les meubles
le bureau
le canapé
le lit
le frigo
l’armoire (f)
la chaise
la machine à laver
le lavabo
la douche
la fenêtre
la table
la télé-satellite

Furniture
desk
settee/sofa
bed
fridge
wardrobe
chair
washing machine
wash basin
shower
window
table
satellite TV

Les pièces
Chez moi, il y a ...
(six) pièces
le salon
le jardin
la cuisine
la salle à manger
la salle de bains
ma chambre
la chambre de (mes parents/
ma soeur/mon frère)
Il n’y a pas de (jardin).

Rooms
In my home, there is/there are ...
(six) rooms
the living room
the garden
the kitchen
the dining room
the bathroom
my bedroom
(my parents’/my sister’s/my brother’s)
bedroom
There isn’t a (garden).

Le petit déjeuner
Pour le petit déjeuner, je prends ...
For breakfast, I have ...
du beurre
butter
du café
coffee
du chocolat chaud
hot chocolate
du jus d’orange
orange juice
du lait
milk
du pain
bread
du thé
tea
de la confiture
jam
des céréales
cereal
une tarte
a slice of bread and butter
Je ne mange rien.
I don’t eat anything.
Le dîner

D'habitude, on mange ...
- du poisson
- du poulet
- de la pizza
- de la viande
- des fruits
- des pâtes
- des plats à emporter
Comme dessert, je prends ...
- du yaourt
- une mousse au chocolat
- de la glace (à la fraise)
Je suis végétarien(ne).
Le soir, on mange à (six heures).

Les provisions

il faut acheter ...
- un litre de lait
- un paquet de farine (quatre) tranches de jambon
- un kilo de bananes
- 500 grammes de pommes
- 250 grammes de fraises
- une tablette de chocolat
- une bombe de crème Chantilly
- six œufs

Evening meal

Usuelle, we eat ...
- fish
- chicken
- pizza
- meat
- fruit
- pasta
- takeaway food
For dessert, I have ...
- yoghurt
- a chocolate mousse
- (strawberry) ice-cream
I'm a vegetarian.
in the evening, we eat at (six o'clock).

Les rêves et les ambitions

Dreams and ambitions

J'aime gagner.
Je dois gagner.
Je peux gagner.
Je veux gagner.
Je voudrais gagner.
Je vais gagner.
le gagnant/la gagnante
un jour
content(e)

I like winning.
I must win.
I can win.
I want to win.
I'd like to win.
I'm going to win.
the winner
one day
happy

Les mots essentiels

Food shopping

l/we/you need to buy ...
- a litre of milk
- a packet of flour
- (four) slices of ham
- a kilo of bananas
- 500 grams of apples
- 250 grams of strawberries
- a bar of chocolate
- a spray can of whipped cream
- six eggs

déjà
si
si
Tu as raison.
Tu as tort.
D'accord?
plus
moins
À mon avis, ...
Pour moi, ...

High-frequency words

already
if
yes (when contradicting someone)
You're right.
You're wrong.
OK?
more
less
In my opinion, ...
For me, ...
Module 5 – Quel Talent

Le concours de talents
Mon/Notre talent, c'est ...
- chanter
- danser
- être pom-pom girl
- faire de la magie
- jouer du piano/violon
- jouer de la guitare (électrique)
- Je veux être ...
- chanteur/chanteuse
- danseur/danseuse
- guitariste
- musicien/musicienne
- Je veux gagner le concours. J'ai déjà gagné un concours.
- un candidat/une candidate célèbre
- une célébrité
- une vedette
- participer (au concours)

The talent contest
My/Our talent is ...
- singing
dancing
being a cheerleader
doing magic
playing the piano/violin
playing the (electric) guitar
I want to be ...
- a singer
- a dancer
- a guitar player
- a musician
- a magician
I want to win the contest.
I've already won a contest.
- a contestant
- famous
- a celebrity
- a (TV/film/music) star
to take part (in the contest)

Se préparer pour le concours
Je/Tu dois ...
- remplir la fiche d'inscription
participer au concours
- faire un clip vidéo
répéter tous les jours
aller à l'audition
avoir confiance en moi/toi
Je/Tu peux .../On peut ...
répéter chez moi/toi
faire du babysitting
Je ne peux pas.
Si, tu peux!

Getting ready for the contest
I/You must ...
- fill in the application form
take part in the contest
make a video clip
rehearse every day
go to the audition
be confident
I/You can .../We can ...
rehearse at my/your place
babysit
I can't.
Yes, you can!

Donner des instructions et conseils
Chante plus fort!
Enlève ton blouson!
Éteins ton portable!
Fais plus d'efforts!
Jette ta chewing-gum!
Regarde la caméra!
Souris!
Réveille-toi!
Ne fais pas ça!
N'oublie pas ta casquette!
Change ton attitude!

Qui est le meilleur?
Je pense que ...
Il/Elle est ...
le/la plus ...
le/la moins ...
ambitieux/ambitieuse
arrogant(e)
beau/belle
modeste
passionné(e)
professionnel(le)
sûr de lui/sûre d'elle
travaillleur/travailleuse
le meilleur/la meilleure
Il/Elle a ...
le plus de talent
la plus belle voix
Il/Elle a chanté faux/juste.

Giving instructions and advice
Sing louder!
Take off your jacket!
Switch off your mobile phone!
Make more of an effort!
Throw away your chewing gum!
Look at the camera!
Smile!
Wake up!
Don't do that!
Don't forget your cap!
Change your attitude!

Who's the best?
I think that ...
He/She is ...
the most ...
the least ...
ambitious
arrogant
good-looking
modest
passionate
professional
confident
hard-working
the best
He/She has ...
the most talent
the nicest voice
He/She sang off key/in tune.
Key Vocabulary:

Amrit – sugar that is mixed into water using a sword; it is drunk at the Amrit ceremony

Amrit ceremony – ceremony to become part of the Sikh Khalsa

Caste – a series of social classes that determine someone’s job and status in society

The Five K’s – five articles of faith worn by the Khalsa: kesh (uncut hair), kangha (wooden comb), kara (a steel bracelet), kachheri (special cotton underwear) and kirpan (a short sword)

Granthi – people who read from, and look after, the Guru Granth Sahib; Sikhs do not have religious leaders or priests and anyone can read from the Guru Granth Sahib

Gurdwara – the Sikh place of worship; literally means ‘doorway to the Guru’

Gurmukhi – a language created by the Gurus and used to write the Guru Granth Sahib

Guru – a religious teacher or guide who leads a follower from spiritual ignorance

Guru Granth Sahib – the Sikh holy book

Initiated – made a member of a particular group through a special ceremony

Khalsa – the community of Sikhs founded by the tenth Guru, Gobind Singh

Langar – ‘free kitchen’; a communal eating area found in every Sikh place of worship

Monotheistic – someone who believes in only one God

Mool Matra – the first hymn written by Guru Nanak; it summarises Sikh beliefs about God

Naam Japna – repeating the name of God over and over as an act of worship

Panj Pyaré – ‘the blessed ones’; the first five men who volunteered to join the Khalsa

Waheguru – the most common name used by Sikhs to describe God meaning ‘wonderful Lord/Guru’

Year 8 Sikhism: Summer Term

Atma – the soul

Gurmukh – someone who puts God and the teachings of the Gurus at the centre of their life

Karma – the force that influences people’s future rebirths

Maya – the temporary and illusory nature of the world

Mukti – union with Waheguru; to escape the world of illusion and the cycle of life, death and rebirth

Sewa – selfless service to others

Key Facts:

- When Nanak was 30 he received a revelation in which he understood that although there are many different religions here is only one God. God loves people equally, whatever religion they follow.

- The story of the miracle of milk and blood emphasises one of Guru Nanak’s important teachings – that of working hard and honestly.

- The last of the human Gurus was Gobind Singh, who established the Khalsa, a brotherhood of Sikhs established to protect their people from persecution.

- Before he died, Gobind Singh said the collection of Sikh holy scriptures, the Guru Granth Sahib, would be the eleventh and final – eternal – Guru.

- The Guru Granth Sahib is a collection of scriptures collected over 150 years that is highly revered by Sikhs, who look to it for guidance and leadership.

- The Mool Mantra is a text that describes Sikh beliefs about God, including that he is the creator, immortal, without fear or hate, and beyond birth and death.

- A key similarity between Hinduism, Buddhism and Sikhism is that they all believe in the cycle of birth, death and rebirth. They believe how you are reborn is affected by your karma you build up during your life.

- A key difference between the three religions is they have different beliefs about the aim of leaving the cycle.
### Keywords and Definitions

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>The part of the race where the athlete keeps low and has short powerful strides.</td>
</tr>
<tr>
<td>Maximal</td>
<td>The largest amount possible.</td>
</tr>
<tr>
<td>Pace</td>
<td>The speed at which someone moves.</td>
</tr>
<tr>
<td>Power</td>
<td>The speed at which strength can be used.</td>
</tr>
<tr>
<td>Angle</td>
<td>The direction something is released at.</td>
</tr>
<tr>
<td>Stride</td>
<td>The length of step.</td>
</tr>
<tr>
<td>Relay</td>
<td>To send something from one person to another.</td>
</tr>
<tr>
<td>Performance</td>
<td>The way in which an activity is completed.</td>
</tr>
</tbody>
</table>

### Throwing

- **Javelin technique**
  - Grip the javelin in the middle.
  - Turn sideways and extend arm backwards.
  - The javelin tip should be next to your cheek.
  - To throw, bring arm forwards so javelin moves in a straight line.
  - Lean back and rotate chest.
  - Release at 45 degree angle.

- **Shot put technique**
  - Hold shot in fingers against your neck ‘clean palm, dirty neck’.
  - Face backwards.
  - Align toe, knee and chin, and have a high elbow.
  - Rotate, opening out chest, releasing at 45 degrees.

### Sprinting technique

- The sprint start:
  - ‘On your marks’ – set feet with lead leg in front.
  - ‘Set’ – move forward with weight on shoulders raising hips.
  - ‘Go’ – push out off lead leg driving legs and arms forward.

- Keep head down and body at 45 degree angle.

- Sprint technique:
  - Running on toes and lifting knees high.
  - Use of ‘drive’ when getting out of the blocks.

- A straight arm action.

- Stand tall after ‘drive’ phase.

### Middle distance and long distance

Middle distances such as 800m and 1500m and long distance e.g. 500m and 100m usually focus on pacing. Pacing is where you don't set off too fast in order to have enough energy to finish the race strongly.

### Athletics

#### Jumping

- **Long jump technique**
  - Mark out your run up to stop your stuttering.
  - Jump of lead leg [strongest leg].
  - Use arms to project body forward.
  - Stretch legs as if jumping over a box.
  - Push forwards on landing.

- **High jump technique**
  - The Fosbury Flop is the most effective way to complete the high jump.
  - Approach on a curve.
  - Take off outside leg, driving the other leg as high as you can.
  - Rotate in the air to land on your back with feet facing the ceiling.
### Cricket

#### High catch/low catch

The technique for the two catches is the same except the height of the ball changes the position of your hands:

- **Track the ball**
- **Use two hands (for high catch thumbs touching); for low catch little fingers touching)**
- **Cushion the ball**
- **Communicate to others what you will do next**

#### Bowling

**Grip** — two fingers either side of the seam with thumb on the bottom

**The coil** — front arm pulled back, ball next to chin, body leans back

**The release** — arm brushes the ear, look over shoulder, keep upright, keep arm straight, release ball above head, follow through towards target

- **Front foot drive**
  - **Grip** — axe grip
  - **Stance** — side on, feet shoulder width apart, bat raised to waist height
  - **Footwork** — step towards the ball
  - **Stroke** — hit in straight line, high front elbow, follow through straight and up to head height

- **Back foot drive**
  - **Grip** — axe grip
  - **Stance** — side on, feet shoulder width apart, bat raised to waist height
  - **Footwork** — step back towards the wickets
  - **Stroke** — hit in straight line, high front elbow, follow through straight and up to head height

- **Forward defensive**
  - **Grip** — axe grip
  - **Stance** — side on, feet shoulder width apart, bat raised to waist height
  - **Footwork** — step towards the ball, larger step than front foot drive
  - **Stroke** — high front elbow, bring bat through in straight line, block the ball and hold stance, no follow through
Study Point 1 – Algorithms

You use code to tell a computer what to do.

Before you write code you need an algorithm.

An algorithm is a list of rules to follow in order to solve a problem.

Algorithms need to have their steps in the right order.

Think about an algorithm for getting dressed in the morning. What if you put on your coat before your jumper? Your jumper would be on top of your coat and that would be silly!

When you write an algorithm the order of the instructions is very important. If we get it in the wrong order, then the code might not work as we need it to.

We use flowcharts to show the algorithm in a way that is easy to understand.

Pseudocode is another example of an algorithm.

Study Point 2 – Sequencing and flowchart symbols

Control and sequencing is used in all areas of computing including robotics and video games.

We build flowcharts and algorithms to form the basis of all software programs.

Control and sequencing technology is used to:

- operate systems, e.g. traffic lights
- control actions, e.g. a robot’s movement
- create video games
- control manufacturing devices, e.g. laser cutters

Computers follow instructions or sequences programmed into them.

A flowchart can be used to help design a sequence.

Video games are a good example of programmes that are based on complex sequencing. Depending on what the player decides, the game changes. The more complex the sequencing and programming, the more choices the player has.
Study Point 3 - Pseudocode

Most programs are developed using programming languages. These languages have specific syntax that must be used so that the program will run properly. Pseudocode is not a programming language; it is a simple way of describing a set of instructions that does not have to use specific syntax.

Pseudocode often uses specific words that are common in programming.

- **INPUT** – indicates a user will be inputting something
- **OUTPUT** – indicates that an output will appear on the screen
- **WHILE** – a loop (iteration) that has a condition at the beginning
- **FOR** – a counting loop (iteration)
- **REPEAT – UNTIL** – a loop (iteration) that has a condition at the end
- **IF – THEN – ELSE** – a decision (selection) in which a choice is made

Pseudocode can be used to plan out programs.

Pseudocode is another example of an algorithm.
Study Point 4 - Flowcharts

A flowchart shows the order in which a series of events is to be carried out.

These are commonly used to program objects with instructions that control what the object will do.

An example of a simple flowchart this one, showing how to control an automatic vehicle barrier at a car park. The control system specifications are as follows:

1. A sensor detects an approaching vehicle.
2. Pin 1 checks if there is input from the sensor. If yes...
3. Output 0 lifts the barrier.
4. A second sensor detects the vehicle moving away from the barrier.
5. Pin 2 checks if there is input from the sensor. If yes...
6. Output 2 lowers the barrier

Study Point 5 – Complex Flowcharts

Using system flowchart ideas

This system flowchart is a diagram for a ‘cruise control’ for a car. The cruise control keeps the car at a steady speed that has been set by the driver.

The flowchart shows what the outcome is if the car is going too fast or too slow. The system is designed to add fuel, or take it away and so keep the car’s speed constant. The output (the car’s new speed) is then fed back into the system via the speed sensor.

Other examples of uses for system diagrams include:

- aircraft control
- central heating
- automatic washing machines
- booking systems for airlines
Study Point 6 – Data Packets

Data transmitted over the Internet is broken down into smaller chunks or packets to be sent.

The destination and sender’s addresses are added.

Each packet is numbered, sent separately, then put in the right order again at the other end.

---

Study Point 7 – Network Topologies

There are different ways of setting up a LAN, each with different benefits in terms of network speed and cost. Two of the main topologies include bus and star.

Bus Network

In a bus network all the workstations, servers and printers are joined to one cable – ‘the bus’. At each end of the cable a terminator is fitted to stop signals reflecting back down the bus.

- **Advantages:**
  - The simplest and cheapest to install and extend
  - Failure of one node does not affect the rest of the bus network

- **Disadvantages:**
  - If the main bus cable fails then the whole network will fail
  - Performance of the network slows down rapidly with more nodes or heavy network traffic
Star Network

In a star network, each device on the network has its own cable that connects to a switch or hub. This is the most popular way of setting up a LAN. You may find a star network in a small network of five or six computers where speed is a priority.

- **Advantages:**
  - Fastest performance
  - Easy to install and to expand with extra nodes
  - A failure in the minor cables will only affect one node

- **Disadvantages:**
  - Uses the most cable which makes it more expensive
  - An extra hub or switch further increases the cost
**Y8 Assessment**

## Empire and Slavery

### Key Words

- **Empire** – A group of countries controlled by one sovereign country.
- **Colony** – A country or area of land which is controlled and exploited by another country.
- **Middle Passage** – The journey slaves were taken on from Africa to the Americas.
- **Auction** – A method where slaves were sold to the highest bidder.
- **Racism** – Discrimination or prejudice against someone because of their race.
- **Abolition** – Ending something and making it illegal.
- **Emancipation** – Making someone free and releasing them from slavery.

### Selling Slaves

Slaves were generally sold in two different ways:

- An auction where the slaves would be put on display and inspected by their potential buyers. There would then be an auction where people would bid on the slaves and whoever bids the highest bought the slave.
- The second was a ‘grab and go’ where a buyer would make an immediate offer on a slave and haggle with the slaver.

Families would often be split up and slave owners would often try and ensure their slaves had no link to their old lives.

### Life as a Slave

A slave could be forced to perform any task but the majority of slaves worked on large farms called **plantations**.

Crops such as tobacco, sugar and cotton were in high demand in Europe and made slave owners huge amounts of money.

Life on a plantation was very hard, slaves would work as much as 20 hours a day. Many slaves died from being overwork or illness or injury from their job.

### Abolitionists

The Abolitionist movement was dedicated to ending slavery as they saw it as cruel to fellow humans.

Many abolitionists were Christians who felt that the cruelty of slavery went against the teachings of the Bible. They used petitions, leaflets and speeches to try and spread awareness amongst people of the cruelty of slavery.

Many people would have no idea of the truth of slavery as many of the people behind the slave trade argued that it was good for the ‘inferior’ Africans to be ‘looked after’ by Europeans.

Eventually Slavery was abolished throughout the British Empire in 1833.

### Countries in the British Empire

Canada, Australia, New Zealand, Tonga, Fiji, Western Samoa, India, Burma, Papua New Guinea, Malaya, Sarawak, Brunei, Oman, Iraq, Egypt, Libya, Sudan, Kenya, Uganda, Northern and Southern Rhodesia, Tanganyika, Zanzibar, Mauritius, the Maldives, South Africa, Swaziland, Nigeria, Gold Coast, and Sierra Leone

The largest empire there has ever been. It stretched across 6 Continents and contained around 300 million people.

### The British Empire

**The Empire where the sun never sets**

The British Empire was the largest empire that the world has ever seen. It stretched across the world and included countries such as Australia, New Zealand, India and large parts of Africa and the Caribbean.

The Empire allowed Britain to exploit the resources of these colonies and their people. It made Britain the most powerful and richest country in the world but came at a huge human cost to the people and cultures of these countries.
The Triangle Trade was how Slaves were bought and shipped to America. European traders would take manufactured goods from Europe and trade them in Africa for slaves. These slaves would be shipped across the Middle Passage to the Americas to work on plantations.

Slavery and Punishments

Slaves were seen purely as property and had no rights. Due to this, slave owners could treat their slaves very poorly and often used harsh punishments to attempt to control them. Slaves were regularly whipped and beaten. Female slaves regularly suffered from rape and sexual assault. There were no laws to protect slaves from any kind of mistreatment.

Slaves were punished particularly harshly for attempting to run away to set an example to other slaves. Slaves might be branded, whipped or even have limbs chopped off. Slaves could also be forced to wear painful metal masks or chains to restrict their movements.

Inference - “What does this suggest?”

Inference is about identifying information from a source that it does not just tell you. You have to be a detective and look for clues to find hidden meaning in the source.

You can use the source to suggest information about the topic based on the clues it shows you.

Remember - When you’re inferring you are a detective. Look for clues in the text to find that hidden meaning. Keep asking what does this show?

We can infer from this that the Vikings traded in slaves and only young, strong workers would have any value.

The Vikings attacked the monastery at Lindisfarne in 783. They killed the old monks and enslaved the young monks and took everything they could make of gold.

An inference is how we go beyond simply reading what a source says and begin to pull out clues and suggestions from the source.

Being a historian is like being a detective. Sources are our clues and we can reach a conclusion from how we read these clues.

You can use inferences in your writing to add more detailed analysis and get a lot of detail out of a single source. Always look for further questions that you can ask and what further clues you can pull from the source.

Always make sure you are linking your inferences to the question you are answering and that your inference is supported by evidence.

Writing like a historian

Use PEE: Construct your paragraphs with a point to start your argument, evidence to support your point, an explanation to say how your evidence supports you point and then link back to the question.

Using Sources: Think about COP. Content – what is the source. Origin – where is the source from and Purpose – why was the source made

Explain: Give reasons why and details! Phrases such as “This means that…” “As a result…” “This causes....”

Evaluate: Give two sides of arguments, pros and cons, advantages or disadvantages, then conclusion linking back to question.
**Left Hand Technique**

- Pinch your nose. Your thumb must be opposite your finger. It's the same on guitar; thumb opposite finger.
- If your note sounds buzzy or muted press down harder with your finger and 'squeeze' the neck by pushing against your thumb.
- Use one finger per fret.
- Keep your fingernails short.

**Chord Boxes**

- A chord is more than two notes played together. Chord boxes are instructions on how to play each chord.

**Notes of the open strings**

- Low E is the lowest in pitch NOT height.
- Eddie was quite fat (thick string near your head), then he ate dynamite and became thin (thin string near the floor).

**Tab**

- Tab is short for tablature and is a way of writing down guitar music.
- It's often used to help you to play melodies (tunes).

**Year 8**

**Band Musicianship**

**Guitar**

**Rhythm**

- A rhythm is a pattern of sound, often repeated.

**Fret**

- The metal lines on the neck UNDER the strings.

**Strings**

- How high or low a note is. Guitars become higher as you go up the neck to the sound hole.

**Pick or plectrum**

- How loudly or quietly you play

**Dynamics**

- Melodies

- A sequence of notes played one after another

**Pitch**
Band Musicianship

Drum Kit

Stick Grip

Ensure you hold the drum stick between your thumb and index finger. The other fingers wrap around to support this grip.

Keywords

Tempo
Tempo is the speed of music. It is measured in BPM (beats per minute).

Dynamics
Dynamics are the volume of the music. Dynamic range makes music more interesting.

Pitch
The bigger the drum or cymbal, the lower the pitch will be. Small cymbals are high pitched.

Skin
The skins are the resonant part of the drum. You have batter heads (the skin that you hit) and resonant heads (the skin at the bottom of the drum).

Fill
A fill is a short rhythm played at the end of a phrase to transition into the next section of music.

Drum Rudiments

The drum rudiments are basic patterns that form the foundation of drumming. It is important to practice drum rudiments regularly.

<table>
<thead>
<tr>
<th>Single Stroke Roll</th>
<th>R L R L</th>
<th>Caterpillar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Stroke Roll</td>
<td>R R L L</td>
<td>Mommy Daddy</td>
</tr>
<tr>
<td>Single Paradiddle</td>
<td>R L R R L R L</td>
<td>Paradiddle Paradiddle</td>
</tr>
</tbody>
</table>

Year 8

Drum Notation

American

<table>
<thead>
<tr>
<th>Quarter Note</th>
<th>Eighth Note</th>
<th>Sixteenth Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
<td>Eighth</td>
<td>Sixteenth</td>
</tr>
</tbody>
</table>

British

<table>
<thead>
<tr>
<th>Quarter Note</th>
<th>Eighth Note</th>
<th>Sixteenth Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semiquaver</td>
<td>Quaver</td>
<td>Minim</td>
</tr>
</tbody>
</table>

Kick | Snare | Rim Click | Tom 1 | Tom 2 | Floor Tom

Hi-Hat | Open HH | Ride | Ride Bell | Crash | HH Foot
Microphone Technique
- For quiet singing - bring microphone close to your mouth
- For loud singing - move microphone away from your mouth
- NEVER point microphone at amp or speaker (this causes dangerous feedback noise)
- Choose between using a mic stand or a handheld mic

Harmony
2 or more notes sung at the same time by 2 or more singers, creating a chord

Voice Types
- Soprano: Highest female voice
- Alto: Lowest female voice
- Tenor: Highest male voice
- Bass: Lowest male voice

Year 8
Band Musicianship
Singing

Performance
Think about –
1. Your body language...open your arms, lift your head and make eye contact to appear confident onstage
2. The emotion of the song...is it quiet, sad, energetic, powerful, bold etc. How can you get the emotion across using your body and voice?
3. Interaction with your band, the singer is often leading the performance. Use eye contact & other non-verbal signals to communicate with your band during the performance.
4. Your professionalism during the performance. Be focused and ready to perform. Remember to enter and leave the stage in a professional manner, your audience will be watching!

Melody
The main tune sung either by one vocalist or multiple vocalists in unison

Dynamics
- How loud or quiet you sing
- Pitch
  - How high or low you sing
- Tempo
  - How fast or slow you sing
**Hand Positioning and using the Correct Fingers**

Wrist up and Curved Fingers

A piano keyboard is made up of only twelve tones that repeat as you move up the keyboard.

**Scales and Chords**

- A **Scale** is a series of notes starting and ending on the same note name.
- A **Chord** is built using a **Triad** – 3 notes played together – based on the 1st, 3rd, and 5th degree of the scale.
- A **Chord** is 2 or more notes played together.
- A **Happy sounding chord** is a **Major Chord**.
- A **Sad sounding chord** is a **Minor Chord**.
- A **Triad** is the 3 notes of a chord – built up using the 1st, 3rd, and 5th notes of the scale.
- An **Octave** is a series of 8 notes.
- The **Treble Clef** shows to play with the Right Hand.
- The **Bass Clef** shows to play with the Left Hand.

**Notes on the Stave**

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

**Year 8**

**Band Musicianship**

**Keyboards**
**Biology study**

**Nutrients:** Substances that your body needs to survive and stay healthy.

The 7 nutrients are:
1. **Carbohydrates** (provide energy)
2. **Lipids** (fats and oils which provide energy)
3. **Proteins** (used for growth and repair)
4. **Vitamins** (keep you healthy)
5. **Minerals** (keep you healthy)
6. **Fibre** (provides bulk to food to keep it moving through the gut)
7. **Water** (needed in all cells and body fluids).

**Malnourishment** is when people are underweight or overweight because they have eaten the wrong types of food or the wrong amounts of food.

**Starvation:** Is where people do not eat enough food for their energy demands.

**Obese:** This is where people become extremely overweight because they eat too much or too many fatty foods.

**Deficiency:** This is where a person does not have enough of a certain vitamin or mineral.

**Rickets:** A condition where a person has weak bones due to vitamin D deficiency.

**Night blindness:** A condition where a person finds it difficult to see in dim light due to a lack of vitamin A deficiency.

**Digestive system:** A group of organs that work together that break down food.

**Digestion:** The process by which large molecules are broken down into small molecules of nutrients which can pass into the blood.

**Movement of food through the digestive system:**

- **Mouth** (1)
- **Gullet** (2)
- **Stomach** (3)
- **Small intestine** (4)
- **Large intestine** (5)
- **Rectum** (6)

**Villi:** Foldings of the small intestine.
Enzymes

Enzymes: Special proteins that break down large molecules into smaller molecules joined together. They are biological catalysts because they speed up digestion without being used up.

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Nutrient broken down by enzyme</th>
<th>Product after digestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbohydrase</td>
<td>carbohydrates</td>
<td>sugar</td>
</tr>
<tr>
<td>Protease</td>
<td>protein</td>
<td>amino acids</td>
</tr>
<tr>
<td>Lipase</td>
<td>lipid</td>
<td>fatty acids and glycerol</td>
</tr>
</tbody>
</table>

Drugs

Drugs: Chemical substances that change the way the body works.

**Medicinal drugs:** Are used as medicines to treat conditions and are prescribed by doctors. Examples: paracetamol, antibiotics

**Recreational drugs:** are drugs that people take for enjoyment, to help them relax or to help them stay awake. They are not prescribed by doctors. Some are legal and some are illegal.

Examples of legal recreation drugs: heroin, cocaine, ecstasy.
Examples of illegal recreation drugs: alcohol, tobacco

**Drug addiction:** This is when a person becomes used to taking a drug and can only feel normal when the drug is taken.

**Withdrawal symptoms:** the symptoms which a person has when they stop taking a drug that they are addicted to.

Alcohol

**Ethanol:** the addictive drug in alcohol.
**Alcoholics:** people who are addicted to alcohol

**Units of alcohol:** Is the maximum daily amount of alcohol recommended by the government for males and females.

**Effect of alcohol on behaviour**
- Loss of muscle control making it difficult to walk and balance.
- Slurred speech
- Blurred vision
- Unconsciousness
- Death

Alcohol causes:
- stomach ulcers,
- heart disease,
- brain damage
- liver damage (cirrhosis)
- Damage to the unborn baby.

Smoking

<table>
<thead>
<tr>
<th>Chemical in smoke</th>
<th>Harmful effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>tar</td>
<td>contains chemicals that cause cancer</td>
</tr>
<tr>
<td>nicotine</td>
<td>Addictive and makes the heart beat faster</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>Reduces the amount of oxygen that the blood can carry</td>
</tr>
</tbody>
</table>

Smoking causes:
- Heart disease
- Lung disease (emphysema)
- Respiratory infections
**Year 8 Chemistry – Separating Techniques**

**Key Terms**

<table>
<thead>
<tr>
<th>Key Terms</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>A substance made up of different elements or compounds that are not chemically bonded to each other</td>
</tr>
<tr>
<td>Solute</td>
<td>The substance that dissolves into the solvent</td>
</tr>
<tr>
<td>Solvent</td>
<td>The liquid that the solute dissolves into</td>
</tr>
<tr>
<td>Solution</td>
<td>The solute dissolved in the solvent</td>
</tr>
<tr>
<td>Solubility</td>
<td>How easily a substance dissolves</td>
</tr>
<tr>
<td>Soluble</td>
<td>The substance dissolves into a solvent</td>
</tr>
<tr>
<td>Insoluble</td>
<td>The substance does not dissolve into a solvent</td>
</tr>
</tbody>
</table>

**MIXTURES**

A mixture contains different elements or compounds that are not chemically joined to each other. There are three types of mixture:

1. A mixture of elements:

2. A mixture of compounds:

3. A mixture of elements and compounds:

- Mixtures contain more than one substance, so they are impure.
- Mixtures can be easily separated because the substances are not bonded together.

**SOLUTIONS**

- A solution is made up of a liquid in which a substance is dissolved.
- The liquid part of the solution is called the solvent e.g. water.
- The substance that has dissolved into the solvent is called the solute e.g. salt.
- When the solute dissolves into the solvent, a solution is made e.g. salt water.
- Salt is described as soluble, because it dissolves into the solvent.
- A substance that will not dissolve into a solvent is described as insoluble e.g. sand.
# Year 8 Chemistry – Separating Techniques

**KPI 7.1**: Classify substances as pure and impure and describe techniques to separate mixtures.

## Distillation
- This is good for separating a mixture of liquids, e.g. ethanol and water.
- Different liquids have different boiling points, e.g. ethanol has a lower boiling point than water.
- Distillation separates liquids according to their boiling points:
  1. The mixture of liquids is heated in the round flask.
  2. The liquid with the lower boiling point (ethanol in this example) will evaporate first, turning into a gas.
  3. It passes through the condensing tube which is surrounded by cold water, so the gas condenses back into liquid form.
  4. It drips into the beaker.
  5. The liquid with the higher boiling point (water in this example) is left in the round flask because it is not hot enough yet to evaporate.

![Distillation Diagram](image)

## Key Terms and Definitions

<table>
<thead>
<tr>
<th>Key Terms</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Distillation</td>
<td>A method for separating the parts of a liquid solution according to their boiling point.</td>
</tr>
<tr>
<td>Chromatography</td>
<td>A method for separating mixtures of compounds according to their solubilities in a solvent.</td>
</tr>
</tbody>
</table>

## Chromatography
- Chromatography is used to separate the compounds in a mixture according to how soluble they are in a solvent.
- It uses chromatography paper dipped in the solvent as follows:
  1. A spot of the mixture, for example felt tip, is placed near the bottom of the paper.
  2. The paper is dipped in the solvent e.g. water, so that the spot is just above the water level. If the spot goes in the water, it will run.
  3. The compounds that are most soluble travel with the solvent up the paper.
  4. The compounds are insoluble will stay in the same place.
  5. In this way, the compounds are separated according to their solubility in the solvent.

![Chromatography Diagram](image)
Year 8 Chemistry – Separating Techniques

KPI 7.1: Classify substances as pure and impure and describe techniques to separate mixtures.

Dissolving
• During dissolving, the solvent particles surround the solute particles and move them away so they are spread out in the solvent.
• This is how a solution is made.

<table>
<thead>
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<tbody>
<tr>
<td>Dissolving</td>
<td>When solvent particles surround solute particles so they are spread out</td>
</tr>
<tr>
<td>Saturated Solution</td>
<td>A solution in which no more solute can dissolve</td>
</tr>
<tr>
<td>Evaporation</td>
<td>A method for separating a dissolved substance from the liquid</td>
</tr>
<tr>
<td>Filtration</td>
<td>A method for separating an insoluble solid from a liquid</td>
</tr>
</tbody>
</table>

Evaporation
• If you have a solution in which a solute is dissolved, for example salt water, the water can be evaporated to leave you with pure salt.
• This is done by using a Bunsen Burner to heat the solution inside an evaporating basin.

Saturated solutions
• When no more solute can dissolve in a solvent, we say the solution is saturated.
• However, more solute will be able to dissolve if the solvent is heated. This is because solubility increases with a higher temperature.
• This happens because the solvent particles are moving slightly faster, as they have more energy. This means there is more space for solute particles to fit in.
• Mass is always conserved. For example if 5 grams of solute are dissolved in 100 grams of solvent, the mass of the solution will be 100 + 5 = 105 grams.

Filtration
• This is a good method of separation for when an insoluble solid is mixed with water e.g. sand and water.
• The mixture is poured through folded filter paper inside a funnel.
• The insoluble solid is trapped in the filter paper and the liquid passes through into the beaker.
Year 8 Chemistry – Metal Reactions

**Metals and Non-Metals**
- Metals are found on the left hand side of the Periodic Table, the majority of elements are metals.
- When metals react, they lose an electrons to form positive ions.
- Non metals gain electrons to form a negative charge.

- Metals can be divided into main group metals that are found in group 1, 2, or 3.
- Transition metals are found between groups 2 and 3. Transition metals can form different positive ions.

**Reactivity of Metals with Water**
- Some metals will react with water for example sodium, lithium, potassium and calcium.
- Magnesium will react with steam.
- Metals below magnesium do not react with water.
- When a metal reacts with water it produces a metal hydroxide and hydrogen gas.
- The word and symbol equation for this reaction is: Lithium + Water → Lithium Hydroxide + Hydrogen
  \[ 2Li + 2\text{H}_2\text{O} \rightarrow 2\text{LiOH} + \text{H}_2 \]

**Reactivity of Metals with Acid**
- More metals metals will react with acid than water.
- When a metal reacts with acid, a salt and hydrogen gas are made.
- Metals below lead do not react with common acids.
- The word equation for this reaction is: Lithium + Hydrochloric acid → Lithium Chloride + Hydrogen
  \[ 2\text{Li} + 2\text{HCl} \rightarrow 2\text{LiCl} + \text{H}_2 \]

**Reactivity Summary**
- The reactivity series shows the metals in order of reactivity. You should learn the following table off by heart.

### Key Terms
- **Metal**: An element that forms a positive ion.
- **Non Metal**: An element which forms a negative ion.
- **Reactivity Series**: A table which ranks metals on relative reactivity.
The reaction of metals with oxygen
Metals react with oxygen to make **metal oxides**. For example magnesium reacts with oxygen to make **magnesium oxide**. This can also be written as a word equation:

\[
\text{Mg} + \text{O}_2 \rightarrow \text{MgO}
\]

In this reaction the bonds between the magnesium atoms and the oxygen atoms are broken. Bonds are then formed between the magnesium and the oxygen atoms. We call these chemical reactions **oxidation reactions**, as the magnesium has gained an oxygen.

<table>
<thead>
<tr>
<th>Key terms</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Oxide</td>
<td>A compound where a metal is bonded to an oxygen.</td>
</tr>
<tr>
<td>Oxidation</td>
<td>A reaction where one of the reactants forms a bond with an oxygen atom</td>
</tr>
<tr>
<td>Decomposition</td>
<td>A reaction where one substance breaks down into 2 or more substances</td>
</tr>
</tbody>
</table>

**Practical: Reactivity of Metals**

**Method**
1. Half fill 4 test tubes with dilute hydrochloric acid.
2. Add a 1cm strip of copper to one test tube. Record your observations.
3. Repeat with lead, iron and magnesium.

**Results:**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Safety**
Dilute hydrochloric acid is an irritant. Wear goggles and avoid contact with skin.
Year 8 Chemistry – Metal Reactions

Displacement reaction of metals
• A more reactive metal will displace a less reactive metal from its compound.
• This is because a more reactive metal is more stable as an ion.
• For example iron will displace copper from its compounds as it is more reactive.
  \[
  \text{Copper Sulphate} + \text{Iron} \rightarrow \text{Iron Sulphate} + \text{Copper}
  \]

Extraction of metals
• Pure metals are required for a wide variety of uses.
• Most metals are found in compounds in the Earth’s crust. We call these compounds ores.
• Gold and platinum do not require extraction as they are so unreactive. They are found as native metals.

Extraction of very reactive metals
• Some metals can not be extracted using carbon because they are more reactive than carbon.
• Electrolysis is used to extract these metals.
• For electrolysis to happen the compound has to be molten, so that the ions can move. This means the process requires a lot of energy and is expensive.
• The positive metal ions are then attracted to the negative electrode.

Key Terms
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Metals</td>
<td>A metal which does not need to be extracted from its compound</td>
</tr>
<tr>
<td>Reduction</td>
<td>When an atom when an atom loses an oxygen atom</td>
</tr>
<tr>
<td>Electrolysis</td>
<td>The breaking down of a substance using electricity</td>
</tr>
<tr>
<td>Ore</td>
<td>A metal ore is a compound found in rock, dug out of the ground, that contains enough metal that it is economical to extract it.</td>
</tr>
</tbody>
</table>

Extraction using carbon
• Carbon is found between zinc and aluminium in the reactivity series.
• Carbon can displace elements that are below it from their compounds. This means they can be used to extract some metals from their ores.
• Carbon can be used to extract metals from zinc downwards.
• Example: Lead Oxide + Carbon \[ \text{PbO}_2 + \text{C} \rightarrow \text{Pb} + \text{CO}_2 \]
• This reaction is an example of a reduction reaction as the lead has lost oxygen.
• This reaction requires high temperatures and can therefore be expensive.

Metal extraction summary

<table>
<thead>
<tr>
<th>Metal</th>
<th>Extraction method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium</td>
<td>Extracted from their ores by electrolysis</td>
</tr>
<tr>
<td>Sodium</td>
<td>Extracted from their ores by electrolysis</td>
</tr>
<tr>
<td>Aluminium</td>
<td>Extracted from their ores by electrolysis</td>
</tr>
<tr>
<td>Carbon</td>
<td>Extracted from their ores by reduction by carbon</td>
</tr>
<tr>
<td>Zinc</td>
<td>Extracted from their ores by reduction by carbon</td>
</tr>
<tr>
<td>Iron</td>
<td>Extracted from their ores by reduction by carbon</td>
</tr>
<tr>
<td>Copper</td>
<td>Extracted from their ores by reduction by carbon</td>
</tr>
<tr>
<td>Silver</td>
<td>No extraction necessary – found pure in the ground.</td>
</tr>
<tr>
<td>Gold</td>
<td>No extraction necessary – found pure in the ground.</td>
</tr>
</tbody>
</table>
Ceramics

Ceramics are compounds that include metal silicates, metal oxides, metal carbides and metal nitrides.

Examples of ceramics are brick and pottery.

Properties of ceramics:
- hard
- brittle
- high melting points
- strong
- electrical insulators
- do not react with water, acids or alkalis

Ceramics can be used for:
- building
- electrical power-line insulators
- jet engine turbine blades
- plates, bowls and mugs

Polymers

A polymer is a substance made of very long molecules. Each molecule has identical groups of atoms, repeating many times.

Some natural polymers are wool, cotton, starch and rubber.

Synthetic polymers do not occur naturally. Some examples of synthetic polymers are plastics like poly(ethene) and PVC.

There are two types of poly(ethene). Low density Poly(ethene) (LDPE) is flexible because the molecules slide against each other. It is used to make carrier bags.

High density poly(ethene) HDPE is stronger and harder than LDPE. It is used in artificial knee joints.

Synthetic polymers do not break down naturally in the environment. This is why disposable plastic products like carrier bags and bottles can build up in the environment and create problems for wildlife.

Composites

A composite is made of two or more different materials.

Examples of composites are fibreglass, reinforced glass, cement, concrete, carbon fibre reinforced plastic (CFRP) and medium density fibreboard (MDF).

The properties of a composite depends on the materials it is made from. By combining materials with different properties, composites can be made to suit a particular use. For example, CFRP combines the flexibility of plastic with the strength of carbon fibre.
Pressure

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>A substance with no fixed shape, a gas or a liquid</td>
</tr>
<tr>
<td>Pressure</td>
<td>The ratio of force to surface area, in N/m².</td>
</tr>
<tr>
<td>Gas pressure</td>
<td>The force exerted by air particles when they collide with a surface.</td>
</tr>
<tr>
<td>Atmospheric pressure</td>
<td>The pressure caused by the weight of the air above a surface.</td>
</tr>
<tr>
<td>Liquid pressure</td>
<td>The pressure produced by collisions of particles in liquids.</td>
</tr>
<tr>
<td>Incompressible</td>
<td>Cannot be compressed (squashed).</td>
</tr>
<tr>
<td>Upthrust</td>
<td>The upward force that a liquid or gas exerts on a body floating in it produced by the collisions of the particles in the liquid or gas.</td>
</tr>
<tr>
<td>Density</td>
<td>Amount of mass per unit volume.</td>
</tr>
</tbody>
</table>

Pressure in Gases

- **Pressure in gases** is caused by collisions between the particles and the walls of the container.
- In a smaller volume gas molecules will collide more often with the walls of the container, so the pressure will be higher.

Atmospheric pressure decreases as altitude increases. As you go up, the amount of air above you decreases, so the weight decreases. This decreases the pressure.

Pressure in Liquids

- **Pressure in liquids** increases with depth. As you go deeper, the weight above increases.
- Objects float if the upthrust is greater than gravity. Upthrust can be increased by increasing the surface area in contact with the water or decreasing the weight.

Pressure in Solids

- **Pressure in solids** is measured in Newtons per meter squared (N/m²).

\[
\text{Pressure (N/m}^2\text{)} = \frac{\text{Force (N)}}{\text{area (m}^2\text{)}}
\]

- A force spread over a large area results in a low pressure. (eg. A ski)
- A force concentrated into a small area results in a high pressure (eg. A drawing pin)
Motion

Calculating Speed

**Speed** is measured in meters per second (m/s).

\[ \text{Speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}} \]

**Example**
A cheetah travels 90 meters in 3.0 seconds. What is her speed?

\[ \text{Speed} = \frac{90 \text{ m}}{3.0 \text{ s}} = 30 \text{ m/s} \]

Relative Motion

The speed of each car relative to the road is 40 m.p.h, but the speed of each car relative to each other is 80 m.p.h.

Distance-Time Graphs

On a **distance-time graph**, the steeper the slope, the higher the speed. A distance-time graph for an **accelerating** object is a curve.

![Distance-Time Graph](image)

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>How much distance is covered in a given time</td>
</tr>
<tr>
<td>Average speed</td>
<td>The overall distance travelled divided by the overall time for a journey.</td>
</tr>
<tr>
<td>Relative motion</td>
<td>Different observers judge speeds differently if they are in motion too, so an object’s speed is relative to the observer’s speed.</td>
</tr>
<tr>
<td>Distance-time graph</td>
<td>A graph that shows how far an object moves each second.</td>
</tr>
<tr>
<td>Acceleration</td>
<td>How quickly speed increases or decreases.</td>
</tr>
<tr>
<td>Pivot</td>
<td>The point about which a lever or see-saw balances or rotates.</td>
</tr>
<tr>
<td>Moment</td>
<td>A measure of the ability of a force to rotate an object about a pivot.</td>
</tr>
</tbody>
</table>

Turning Forces

**Moment** is measured in Newton meters (Nm).

\[ \text{Moment (Nm)} = \text{force (N)} \times \text{distance from the pivot (m)} \]

The **law of moments** states that when an object is in equilibrium the sum of the clockwise moments is equal to the sum of the anticlockwise moments.

**Left:**

\[ \text{Moment} = \text{force} \times \text{distance} = 500 \text{ N} \times 1 \text{ m} = 500 \text{ Nm} \]

**Right:**

\[ \text{Moment} = \text{force} \times \text{distance} = 1000 \text{ N} \times 0.5 \text{ m} = 500 \text{ Nm} \]

The see-saw is balanced.
**Unit 6: Decimals and ratio**

1. Round each number to the nearest 100, 1000, 10,000: 2456, 5199, 12875.
2. Rearrange these numbers in ascending order: -8.12, 2.5, -5.76, 0.899, -5.7, 4.56, 2.42.
3. Round these numbers to 2 significant figures: 1269, 3400, 23456, 2.567.
4. Work out: 2.4 x 1.3.
5. 12 x 17 = 204. Work out: 1.2 x 0.17.
6. Work out: 6.3 + 0.7.
9. Share £36 in the ratio 4: 5.
10. A piece of rope 24m long is cut in the ratio 5: 3. How long is each piece of rope?

**Unit 3: Stats, graphs and charts.**

The pie chart shows the languages Year 8 chooses to learn.

1. What fraction of the students chose: German, Mandarin, Spanish.
2. There are 280 students in Year 8. What number of students chose French?

The table below shows the number of books borrowed from a library last Tuesday.

**Unit 9: Straight-line graphs**

1. How can we tell if a graph shows two quantities in direct proportion?
2. Which of these graphs show one variable in direct proportion to another?
3. Complete this table of values for the equation $y = 2x + 2$.

<table>
<thead>
<tr>
<th>$x$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y$</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. What does the gradient of a curve show?
5. How do you find the gradient of a graph?
3. What does frequency mean?
4. What was the modal number of books borrowed?
5. How many people borrowed books in that hour?
6. Work out the mean.
7. How do you find the median value in a set of data with n number of values?
8. The stem and leaf diagram shows the heights of Year 8 students: measured to the nearest centimetre.

<table>
<thead>
<tr>
<th>Height (cm)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>6, 9</td>
</tr>
<tr>
<td>15</td>
<td>1, 2, 3, 4, 5, 5, 5, 6</td>
</tr>
<tr>
<td>16</td>
<td>2, 3, 4, 5, 5, 5, 7, 9, 9</td>
</tr>
<tr>
<td>17</td>
<td>0, 2, 4</td>
</tr>
</tbody>
</table>

Key: 14 | 5 means 145 cm

Find:
- the mode
- the range
- the median.

9. What are the correlations of these scatter graphs:

10. What does a line of best fit show?

Reasoning: Find the missing values.

- a. A gradient of $\frac{1}{2}$ means $\square$ up for every 2 across.
- b. A gradient of $\frac{3}{4}$ means $\square$ up for every 4 across.
- c. A gradient of $\frac{2}{3}$ means $\square$ up for every 3 across.
- d. A gradient of $\frac{1}{3}$ means $\square$ down for every 3 across.
- e. A gradient of $\frac{3}{2}$ means $\square$ down for every 2 across.

7. These diagrams show some skateboard ramps. Find the gradient of these ramps.

8. How do you find the midpoint of a line segment?

9. Find the midpoint of line segment AB when:
   - A is (0, 2) & B is (4, 10), when A is (-3, 3) & B is (2, -4).

10. Any linear equation can be written in the form $y = mx + c$. What do m and c represent?
# Mathematics: Answers

## Unit 6: Decimals and ratio

1. Round each number to the nearest 100, 1000, 10,000, 2455, 5199, 12875.
   - 100: 3500, 5000, 13000
   - 1000: 2000, 5000, 13000
   - 10,000: 0, 10000, 10000

2. Rearrange these numbers in ascending order: -8.12, 2.5, -5.76, 0.899, -5.7, 4.56, 2.42
   - -8.12, -5.76, -5.7, 0.899, 2.42, 2.5, 4.56

3. Round these numbers to 2 significant figures:
   - 1269, 3400, 23.456, 2.567
     - 1300, 3400, 23, 2.6

4. Work out $2.4 \times 4.3$
   - $2.4 \times 4.3 = \frac{24}{10} \times \frac{43}{10} = \frac{1032}{100} = 10.32$

5. $12 \times 17 = 204$. Work out $1.2 \times 0.17$
   - $1.2 \times 0.17 = \frac{12}{10} \times \frac{17}{100} = \frac{204}{1000} = 0.204 \div 100 = 0.00204$

6. Work out $6.3 \div 0.7$
   - $6.3 \div 0.7 = \frac{63}{10} \div \frac{7}{10} = 9$

## MM: Circles

1. What is the difference between the radius and the diameter?
   - Radius: distance from centre to any point on the edge.
   - Diameter: distance from one edge of the circle to another passing through the centre.

2. What is the circumference of a circle?
   - Circumference of a circle is the distance around a circle. In other words, the perimeter of a circle.

3. What is the formula to find the circumference of a circle?
   - \( C = \pi \times \text{diameter} \) or \( C = 2\pi \times \text{radius} \)

4. Find the circumference of these circles. Leave your answers in \( \pi \):
   - \( C_a = 7\pi \) cm
   - \( C_b = 4\pi \) cm

5. Find the circumference of a circle with radius 5m.
   - \( C = 2\pi \times r = 2\times \pi \times 5 \text{m} = 10\pi \text{m} \)
7. Write each ratio in its simplest form:
11 : 33. 16 : 24 : 56
so, 11 : 33 = 1 : 3
16 : 24 : 56 = 2 : 3 : 7
8. Write each ratio in its simplest form:
40 : 28.5 25.5 : 17
40 : 28.5 = 8 : 5.7
25.5 : 17 = 3 : 2.7
9. Share £36 in the ration 4 : 5
4 + 5 = 9
36 ÷ 9 = 4
4 x 4 = 16
5 x 5 = 25
10. A piece of rope 24m long is cut in the ratio 5 : 3. How long is each piece of rope?
8 + 3 = 8
24 ÷ 8 = 3
8 x 5 = 40
8 x 3 = 24

6. Find the perimeter of this semi-circle:
\[ \text{C}_{\text{semi-circle}} = \frac{1}{2} \times \text{C} \]
\[ \frac{1}{2} \times 2 \times \pi \times 8 \text{cm} = 4\pi\text{cm} \]
7. What is the formula to find the area of a circle?
\[ \pi r^2 \]
8. Find the area of these circles:
\[ \pi r^2 \]
\[ d = 9 \text{cm}; \ r = 4.5 \text{cm} \]
\[ \text{Area} = \pi r^2 = 20.25\pi\text{cm}^2 \]
9. Find the area of a circle with a diameter of 12cm?
\[ d = 12 \text{cm}; \ r = 6 \text{cm} \]
\[ \text{Area} = \pi r^2 = 36\pi\text{cm}^2 \]
10. A circular table top has a diameter of 90cm. Work out the area of the table top.
\[ \text{Radius} = 45\text{cm} \]
\[ \text{Area} = \pi r^2 = 2025\pi\text{cm}^2 \]
Unit 3: Stats, graphs and charts.
The pie chart shows the languages Year 8 chose to learn.

Year 8 languages

French  | Mandarin  | Spanish

1. What fraction of the students chose:
   German, Mandarin, Spanish

   \[
   \frac{1}{4} \quad \frac{1}{8} \quad \frac{1}{2}
   \]

2. There are 280 students in Year 8. What number of students chose French?

   \[
   \frac{1}{8} \text{ choose French} \quad \Rightarrow \quad \frac{1}{8} \times 280 = \frac{280}{8} = 35 \text{ students}
   \]

The table below shows the number of books borrowed from a library last Tuesday.

<table>
<thead>
<tr>
<th>Number of books</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

3. What does frequency mean?

   How often a value occurs in a given sample.

Unit 9: Straight-line graphs

1. How can we tell if a graph shows two quantities in direct proportion?
   - If the plotted line passes through the origin (0,0)
   - When one value variable is zero, the other is also zero
   - When one variable doubles, so does the other

2. Which of these graphs show one variable in direct proportion to another?

3. Complete this table of values for the equation
   \[ y = 2x + 2 \]

<table>
<thead>
<tr>
<th>x</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

4. What does the gradient of a curve show?

   The gradient of a graph shows how steep the graph is.

5. How do you find the gradient of a graph?

   You can find the gradient of a graph by working out how many units the graph goes up for every one unit across.
4. What was the modal number of books borrowed? 

2

5. How many people borrowed books in that hour?

\[
\text{Sum of frequency} = \frac{7 + 10 + 8 + 6 + 1}{5} = 6.2
\]

6. Work out the mean.

\[
\text{Mean} = \frac{\text{Sum of frequency} + \text{frequency}}{5} = \frac{32}{5} = 6.4
\]

7. How do you find the median value in a set of data with \( n \) number of values?

\[
\frac{n + 1}{2}
\]

8. The stem and leaf diagram shows the heights of Year 8 students, measured to the nearest centimetre.

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>6, 9</td>
</tr>
<tr>
<td>15</td>
<td>1, 1, 2, 3, 5, 5, 6</td>
</tr>
<tr>
<td>16</td>
<td>2, 3, 4, 5, 5, 5, 7, 9, 9</td>
</tr>
<tr>
<td>17</td>
<td>0, 2, 4</td>
</tr>
</tbody>
</table>

Key: 14 | 8 means 148 cm

Find

a. the mode  

b. the range  

c. the median.

8. How do you find the midpoint of a line segment?

\[
\text{Midpoint} = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)
\]

9. Find the midpoint of line segment AB when:

A is \([0, 2]\) & B is \((4, 10)\), when A is \((-3, 8)\) & B is \((2, -4)\).

\[
\text{Midpoint} = \left( \frac{0 + 4}{2}, \frac{2 + 10}{2} \right) = \left( \frac{3 + 2}{2}, \frac{8 + (-4)}{2} \right) = \left( \frac{5}{2}, \frac{4}{2} \right) = \left( \frac{5}{2}, 2 \right)
\]
## Questions:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Who wrote <em>Animal Farm</em>?</td>
</tr>
<tr>
<td>2.</td>
<td>When was it written?</td>
</tr>
<tr>
<td>3.</td>
<td>What influenced the author of <em>Animal Farm</em>?</td>
</tr>
<tr>
<td>4.</td>
<td>What is a tyrant?</td>
</tr>
<tr>
<td>5.</td>
<td>What is an allegory?</td>
</tr>
<tr>
<td>6.</td>
<td>What is <em>Animal Farm</em> an allegory for?</td>
</tr>
<tr>
<td>7.</td>
<td>What is propaganda?</td>
</tr>
<tr>
<td>8.</td>
<td>Which two characters are the heroes of The Battle of the Cowshed?</td>
</tr>
<tr>
<td>9.</td>
<td>How does Napoleon express his disapproval of Snowball’s windmill plans?</td>
</tr>
<tr>
<td>10.</td>
<td>Which animals chant ‘Four legs good, two legs bad’?</td>
</tr>
<tr>
<td>11.</td>
<td>Which character is described as ‘not much of a talker, but with a reputation for getting his own way’?</td>
</tr>
<tr>
<td>12.</td>
<td>Which character is described as being ‘quicker in speech and more inventive’?</td>
</tr>
<tr>
<td>13.</td>
<td>Which character is described as ‘a brilliant talker’ and able to ‘turn black into white’?</td>
</tr>
<tr>
<td>14.</td>
<td>Which character is described as ‘not of first-rate intelligence’ but is ‘universally respected’?</td>
</tr>
<tr>
<td>15.</td>
<td>Which character inspires the rebellion?</td>
</tr>
<tr>
<td>16.</td>
<td>What is the name of the farm at the start of the novel?</td>
</tr>
<tr>
<td>17.</td>
<td>What is the name of the farm at the end of the novel?</td>
</tr>
<tr>
<td>18.</td>
<td>What is the name of the animals’ philosophy?</td>
</tr>
<tr>
<td>19.</td>
<td>What are Boxer’s two maxims?</td>
</tr>
<tr>
<td>20.</td>
<td>Why does Napoleon believe he is dying the morning after drinking whisky?</td>
</tr>
<tr>
<td>21.</td>
<td>What is Boxer’s ultimate fate?</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22.</td>
<td>Which animal refuses to become excited about the windmill?</td>
</tr>
<tr>
<td>23.</td>
<td>What is the reason for the windmill’s first collapse?</td>
</tr>
<tr>
<td>24.</td>
<td>Which Russian leader does Snowball most resemble?</td>
</tr>
<tr>
<td>25.</td>
<td>Which Russian leader does Napoleon most resemble?</td>
</tr>
<tr>
<td>26.</td>
<td>Who is the farmer whom the animals overthrow?</td>
</tr>
<tr>
<td>27.</td>
<td>How many commandments are there?</td>
</tr>
<tr>
<td>28.</td>
<td>What is the name of the song the animals sing at the end of meetings?</td>
</tr>
<tr>
<td>29.</td>
<td>What do the pigs paint on the side of the barn?</td>
</tr>
<tr>
<td>30.</td>
<td>What major event happens at the end of Chapter 3?</td>
</tr>
<tr>
<td>31.</td>
<td>Who chases Snowball off the farm?</td>
</tr>
<tr>
<td>32.</td>
<td>How does Squealer explain Snowball’s absence?</td>
</tr>
<tr>
<td>33.</td>
<td>Who is Mr Whymper?</td>
</tr>
<tr>
<td>34.</td>
<td>Where do the pigs move to?</td>
</tr>
<tr>
<td>35.</td>
<td>How does Napoleon get the hens to lay eggs for him to sell?</td>
</tr>
<tr>
<td>36.</td>
<td>What do the animals notice about the pigs and the humans at the end of the novel?</td>
</tr>
<tr>
<td>37.</td>
<td>What is the commandment ‘no animal shall sleep in a bed’ changed to?</td>
</tr>
<tr>
<td>38.</td>
<td>What is the commandment ‘no animal shall drink alcohol’ changed to?</td>
</tr>
<tr>
<td>39.</td>
<td>What is the commandment ‘no animal shall kill any other animal’ changed to?</td>
</tr>
<tr>
<td>40.</td>
<td>What is the commandment ‘all animals are equal’ changed to?</td>
</tr>
</tbody>
</table>
## English Self Quiz answers

<table>
<thead>
<tr>
<th>Answers:</th>
<th>12. Snowball</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. George Orwell</td>
<td>13. Squealer</td>
</tr>
<tr>
<td>2. 1945</td>
<td>14. Boxer</td>
</tr>
<tr>
<td>3. The events of World War 2</td>
<td>15. Old Major</td>
</tr>
<tr>
<td>4. Someone who has total power and uses it in a cruel and unfair way.</td>
<td>16. Manor Farm</td>
</tr>
<tr>
<td>5. A story with a literal and a deeper meaning (a moral).</td>
<td>17. Manor Farm</td>
</tr>
<tr>
<td>6. The events of the Russian Revolution</td>
<td>18. Animalism</td>
</tr>
<tr>
<td>7. Information that is meant to make people think a certain way. The information may not be true</td>
<td>19. ‘Napoleon is always right’ and ‘I must work harder’</td>
</tr>
<tr>
<td>8. Snowball and Boxer</td>
<td>20. He has a hangover</td>
</tr>
<tr>
<td>10. Sheep</td>
<td></td>
</tr>
<tr>
<td>11. Napoleon</td>
<td></td>
</tr>
</tbody>
</table>

### Answers:

<table>
<thead>
<tr>
<th>22. Benjamin</th>
<th>32. He is a traitor working with Farmer Jones</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. It is blown down in a storm</td>
<td>33. The solicitor Napoleon hires</td>
</tr>
<tr>
<td>24. Trotsky</td>
<td>34. The farmhouse</td>
</tr>
<tr>
<td>25. Stalin</td>
<td>35. He stops giving them food until nine hens die</td>
</tr>
<tr>
<td>26. Farmer Jones</td>
<td>36. It’s hard to tell them apart</td>
</tr>
<tr>
<td>27. Seven</td>
<td>37. No animal shall sleep in a bed with sheets</td>
</tr>
<tr>
<td>28. ‘Beasts of England’</td>
<td>38. No animal shall drink alcohol to excess</td>
</tr>
<tr>
<td>29. The Seven Commandments</td>
<td>39. No animals shall kill any other animals without cause</td>
</tr>
<tr>
<td>30. The pigs keep the milk and apples for themselves</td>
<td>40. All animals are equal but some are more equal than others</td>
</tr>
<tr>
<td>31. The dogs that Napoleon had raised</td>
<td></td>
</tr>
</tbody>
</table>
## Geography Self Quiz

<table>
<thead>
<tr>
<th>Topic 1:</th>
<th>Topic 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Define urbanisation</td>
<td>1. Define ‘birth rate’</td>
</tr>
<tr>
<td>2. Define development</td>
<td>2. Define ‘death rate’</td>
</tr>
<tr>
<td>3. Define ‘development gap’</td>
<td>3. Define ‘infant mortality’</td>
</tr>
<tr>
<td>5. Give one limitation of The Brandt Line</td>
<td>5. Define HDI.</td>
</tr>
<tr>
<td>6. What is the approximate current world population?</td>
<td>6. Suggest why HDI may be a more helpful indicator of a country’s development than GDP.</td>
</tr>
<tr>
<td>7. How has the world’s population changed in last 200 years?</td>
<td>7. What is the DTM?</td>
</tr>
<tr>
<td>8. Give an example of a country that is experiencing a dramatic population increase</td>
<td>8. How many stages of the DTM are there?</td>
</tr>
<tr>
<td>10. Identity 3 social indicators of development.</td>
<td>10. Describe stage 4 of the DTM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic 3:</th>
<th>Topic 4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How are the two sides of a population pyramid split?</td>
<td>1. On what continent are most LICs located?</td>
</tr>
<tr>
<td>2. What measurement is shown on the middle of a population pyramid?</td>
<td>2. Suggest two physical causes of uneven development around the world</td>
</tr>
<tr>
<td>3. What types of countries tend to have a wide base?</td>
<td>3. Describe one historical cause of uneven development</td>
</tr>
<tr>
<td>4. What does a wide base show?</td>
<td>4. Describe one economic cause of uneven development</td>
</tr>
<tr>
<td>5. What types of countries tend to have a narrow top?</td>
<td>5. Why are nations such as Norway, the Middle East experiencing great economic wealth at present?</td>
</tr>
<tr>
<td>6. What does a narrow top show?</td>
<td>6. What can be done to reduce the development gap?</td>
</tr>
<tr>
<td>7. What section of the population pyramid for HICs eg England is the largest? Why?</td>
<td>7. Define immigrant</td>
</tr>
<tr>
<td>8. How do population pyramids for HICs and LICs look different?</td>
<td>8. Define emigrant</td>
</tr>
<tr>
<td>10. What would a population pyramid with a large number of elderly people show? Give an example of a country experiencing this.</td>
<td>10. Define refugee</td>
</tr>
</tbody>
</table>
### Geography Self Quiz Answers

#### Topic 1:
1. Urbanisation is the increase in the number of people living in urban areas (towns/cities).
2. Development is a process of change to improve people lives.
3. The development gap is the difference between the world richest and poorest, including wealth, quality of life and standard of living.
4. The north-south divide between HICS and LICS around the world.
5. Outdated, does not take into account NEEs, very generalised.
6. 7.5 billion people.
7. Increased. It increased steadily until 1940+ then increased dramatically.
8. NEEs such as India and China.
9. Quality of Life is social measure of wellbeing; how happy and healthy somebody is.
10. Social – people and their lives E.g. life expectancy, literacy rate, infant mortality rate.

#### Topic 2:
1. Birth rate is the number of babies born, per 1000 of the population.
2. Death rate is the number of deaths, per 1000 of the population.
3. The average number of deaths of infants under 1 year of age, per 1000 live births, per year.
4. Gross Domestic Product - The total amount of money generated by a country from good and services.
5. Human Development Index.
6. HDI combines social and economic factors to give a more holistic view of a country’s level of development. Uses life expectancy, GNI and education levels in a country, whereas GDP only looks at the wealth of a country.
7. Demographic Transition Model – shows the changes over time in the population of a country.
8. 5 Stages. (Stage 1 – least developed, stage 5 most developed)
9. Stage 1 (Eg. Traditional rainforest tribes) – high birth rates, high death rates, population stable as both BR and DR fluctuate a lot due to high incidence of disease, famine, war etc.
10. Stage 4 (Eg France/USA) – Low birth rate, low death rate, total population high.

#### Topic 3:
1. Male and Female.
2. Age.
3. LIC.
4. High birth rates – large number of young people in the country.
5. LICs.
7. Middle aged – the largest demographic in UK are adults in late middle age, people are choosing to have fewer children, often later in life so BR relatively low, also people tend to have a long life expectancy.
8. LICs – traditional pyramid shape. Wide base, narrow top. HICs – narrower bottom, wider middle, narrow top (but still wider than LICs with more people in older age groups).
9. NEE – eg China, India – very wide bottom as very high BR, not many elderly people as healthcare systems still not at same standard as HICs, but will see this shift in time.
10. Ageing population eg Japan. Lots of older people, long life expectancy.

#### Topic 4:
1. Africa.
2. Geographical location eg being landlocked and not having access to seas. Being in an area vulnerable to natural hazards, eg earthquakes, tropical storms, flooding.
3. Colonisation – when European nations invaded and took control of many Asian/African countries and exploited their resources and people, in the slave trade.
4. North America and Europe dominant world trade and most trade is between richer countries.
5. Norway/Middle East are examples of regions with highly sought-after resources e.g. oil/gas. This makes them extremely wealthy.
6. Investment, debt reduction, aid, microfinance.
7. A person who moves into a country.
8. A person who moves out of country.
9. Migration is the movement of people.
10. A person forced to move from their country of origin, often as a result of war, or natural disasters.
### Religious Studies: Self Quiz

#### Questions:

| 1. When and where did Sikhism begin? | 1. Who was the first Guru? |
| 2. When was Nanak born? | 2. Who was the second Guru? |
| 3. What is the Janam Sakhis? | 3. Who was the third Guru? |
| 4. What is a monotheist? | 4. Who was the fourth Guru? |
| 5. What is a Guru? | 5. Who was the fifth Guru? |
| 6. What is the Mughal Empire? | 6. Who was the sixth Guru? |
| 7. What is a caste? | 7. Who was the seventh Guru? |
| 8. What does the miracle of the blood and milk teach? | 8. Who was the eighth Guru? |
| 9. When did Guru Nanak die? | 9. Who was the ninth Guru? |
| 10. Who is a disciple? | 10. Who was the tenth Guru? |

<table>
<thead>
<tr>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the Adi Granth?</td>
</tr>
<tr>
<td>2. What is the Guru Granth Sahib?</td>
</tr>
<tr>
<td>3. What is langar?</td>
</tr>
<tr>
<td>4. What is amrit?</td>
</tr>
<tr>
<td>5. What is the Khalsa?</td>
</tr>
<tr>
<td>6. Who are the Panj Pyare?</td>
</tr>
<tr>
<td>7. Who are granthi?</td>
</tr>
<tr>
<td>8. What is the Gurdwara?</td>
</tr>
<tr>
<td>9. What is Gurmukhi?</td>
</tr>
<tr>
<td>10. What is the Mool Matra?</td>
</tr>
</tbody>
</table>
### Religious Studies: Self Quiz answers

<table>
<thead>
<tr>
<th>Answers:</th>
<th>1. Sikhism began in India nearly 550 years ago.</th>
<th>1. The first Guru was Guru Nanak who was the founder of Sikhism.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Nanak was born in 1469 into a Hindu family in Punjab, India.</td>
<td>2. The second Guru was Angad who was a devoted follower of Nanak.</td>
<td></td>
</tr>
<tr>
<td>3. Janam Sakhis are stories about the childhood and life of Guru Nanak.</td>
<td>3. The third Guru was Amar Das.</td>
<td></td>
</tr>
<tr>
<td>4. A monotheist is someone who believes in only one God.</td>
<td>4. The fourth Guru was Ram Das.</td>
<td></td>
</tr>
<tr>
<td>5. A Guru is a religious teacher or guide who leads a follower from spiritual ignorance (‘gu’, ‘darkness’) into spiritual enlightenment (‘ru’, ‘light’).</td>
<td>5. The fifth Guru was Arjan who created the Adi Granth (first Sikh scriptures) and founded the Golden Temple.</td>
<td></td>
</tr>
<tr>
<td>6. The Mughal Empire are the rulers of the area that is now India and Pakistan into the sixteenth and seventeenth centuries.</td>
<td>6. The sixth Guru was Hargobind, a key military leader.</td>
<td></td>
</tr>
<tr>
<td>7. A caste is a series of social classes that determine someone’s job and status in society.</td>
<td>7. The seventh Guru was Har Rai.</td>
<td></td>
</tr>
<tr>
<td>8. The miracle of the blood and milk teaches working hard and honestly.</td>
<td>8. The eight Guru was Har Krishan.</td>
<td></td>
</tr>
<tr>
<td>9. Guru Nanak died on 22 September 1539 at the age of 70.</td>
<td>9. The ninth Guru was Tegh Bahadur, who was executed by the Mughal empire.</td>
<td></td>
</tr>
<tr>
<td>10. A disciple is a follower of a religious leader.</td>
<td>10. The tenth Guru was Gobind Singh who established the Khalsa.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Answers:</th>
<th>1. The Adi Granth is a collection of hymns and writings of the early Sikh Gurus, compiled by Guru Arjan.</th>
<th>1. Naam japna is repeating the name of God over and over as an act of worship.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. The Guru Granth Sahib is the Sikh holy book.</td>
<td>2. Waheguru is the most common name used by Sikhs to describe God meaning ‘wonderful Lord’.</td>
<td></td>
</tr>
<tr>
<td>3. Langar is a word meaning free kitchen which can be found in all Sikh places of worship.</td>
<td>3. The first K is Kesh (uncut hair).</td>
<td></td>
</tr>
<tr>
<td>4. Amrit is sugar that is mixed into water using a sword which is drunk at Amrit ceremonies.</td>
<td>4. The second K is Kangha (wooden comb).</td>
<td></td>
</tr>
<tr>
<td>5. The Khalsa is the community of Sikhs.</td>
<td>5. The third K is Kara (steel bangle).</td>
<td></td>
</tr>
<tr>
<td>6. The Panj Pyare are the ‘blessed ones’ – the first five men who volunteered to join the Khalsa.</td>
<td>6. The fourth K is Kachera (special cotton underwear).</td>
<td></td>
</tr>
<tr>
<td>7. Granthi are people who read/look after the Guru Granth Sahib.</td>
<td>7. The fifth K is Kirpan (a short sword).</td>
<td></td>
</tr>
<tr>
<td>8. The Gurdwara is the Sikh place of worship.</td>
<td>8. Sewa is selfless service to others.</td>
<td></td>
</tr>
<tr>
<td>9. Gurmukhi is a language which is used to write the Guru Granth Sahib.</td>
<td>9. The Zafarnama is a letter written by Guru Gobind Singh to the Mughal emperor.</td>
<td></td>
</tr>
<tr>
<td>10. The Mool Matra is the first hymn written by Guru Nanak.</td>
<td>10. Sikhs believe war should be a last resort only to defend the innocent or yourself.</td>
<td></td>
</tr>
</tbody>
</table>
## History Self Quiz

**Questions:**

| 1. What was the British Empire sometimes known as? | 1. What were the groups of escaped Caribbean slaves known as? |
| 2. What was the first country that England colonised? | 2. Which island became the first black-led nation in the Caribbean in 1804? |
| 3. What was the name of the first English colony? | 3. What were 3 crops that relied heavily on slave labour? |
| 4. Which colony bought England the most wealth? | 4. What methods did Abolitionists use to raise awareness of the horrors of slavery? |
| 5. What was the name of the company which started the colonisation of India through trade? | 5. Which British MP became the voice of the Abolitionist movement in Parliament? |
| 6. Which treaty led to full British control of India? | 6. Which former slave wrote a book on his life as a slave? |
| 7. Which country was captain James Cook aiming to claim in 1768? | 7. What law was passed in 1807? |
| 8. What were the two biggest new products introduced to Britain by the Empire? | 8. What law was passed in 1833? |
| 9. When did England and Scotland become unified as a single kingdom? | 9. What compensation were slaves given at the end of slavery? |
| 10. What was Australia used for by the British? | 10. What year did slavery end in the USA? |

| 1. What continent were the majority of Slaves originally from? | 1. Which royal family was in charge of Britain during the Act of Union and the start of widespread British colonisation? |
| 2. What was the name of the trade between Europe, Africa and the Americas? | 2. What disease spread through the native peoples of the Americas, killing millions? |
| 3. What was the name of the journey slaves took between Africa and the Americas? | 3. Which battle gained Britain almost complete control over India? |
| 4. How long would the journey from Africa to the Americas take? | 4. What did many slaves believe slavers were going to use them for? |
| 5. What percentage of slaves died on the Middle Passage? | 5. Who did most European slave traders buy their slaves from? |
| 6. Which two British ports were most involved in the slave trade? | 6. How many slaves were estimated to have been sold between the 16th and 19th Century? |
| 7. What two methods were used to sell Slaves when they arrived in the Americas? | 7. What would happen to any children born whose parents were slaves? |
| 8. What legal protection did slaves have from unfair treatment? | 8. What goods did Europeans trade for slaves? |
| 9. What could happen to families of slaves when they were sold? | 9. Which was the first country to abolish the Slave Trade? |
| 10. What job did the majority of slaves do? | 10. How did Britain try and enforce their ban on the slave trade? |
## History Self Quiz answers

**Answers:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Empire which the sun never set on.</td>
<td>1. Maroons</td>
</tr>
<tr>
<td>2.</td>
<td>America was the first country that England.</td>
<td>2. Haiti</td>
</tr>
<tr>
<td>3.</td>
<td>Virginia</td>
<td>3. Cotton, Tobacco and Sugar</td>
</tr>
<tr>
<td>4.</td>
<td>India bought England the most wealth.</td>
<td>4. Abolitionists used leaflets, speeches and petitions to raise awareness of slavery.</td>
</tr>
<tr>
<td>5.</td>
<td>The East India Company began the colonisation of India.</td>
<td>5. William Wilberforce</td>
</tr>
<tr>
<td>6.</td>
<td>The Treaty of Allahabad gave Britain almost complete control of India.</td>
<td>6. Olaudah Equiano</td>
</tr>
<tr>
<td>7.</td>
<td>James Cook was looking for Australia.</td>
<td>7. The Slave Trade Act</td>
</tr>
<tr>
<td>8.</td>
<td>Tobacco and sugar were the two biggest products introduced.</td>
<td>8. The Slave Abolition Act</td>
</tr>
<tr>
<td>9.</td>
<td>1807</td>
<td>9. Slaves were given no compensation once they were freed.</td>
</tr>
<tr>
<td>10.</td>
<td>Australia was used a penal colony</td>
<td>10. 1865</td>
</tr>
</tbody>
</table>

**Answers:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Most slaves came from Africa.</td>
<td>1. The Georgians.</td>
</tr>
<tr>
<td>2.</td>
<td>The trade was known as the Triangle Trade.</td>
<td>2. Smallpox</td>
</tr>
<tr>
<td>3.</td>
<td>The Middle Passage</td>
<td>3. The Battle of Plassey</td>
</tr>
<tr>
<td>4.</td>
<td>The Middle Passage took between two and three months.</td>
<td>4. Many slaves feared they were going to be eaten by the slave traders.</td>
</tr>
<tr>
<td>5.</td>
<td>Between 15-25% of slaves died on the Middle Passage.</td>
<td>5. Most slaves were bought from African tribes and nations who raided enemy tribes</td>
</tr>
<tr>
<td>7.</td>
<td>Slaves were sold at auctions or ‘grab and go’ sales.</td>
<td>7. Children born to slave parents would themselves be slaves.</td>
</tr>
<tr>
<td>8.</td>
<td>Slaves had no legal protection from abuse.</td>
<td>8. Pots, pans, firearms and alcohol.</td>
</tr>
<tr>
<td>9.</td>
<td>Families were often split up when they were sold.</td>
<td>9. Denmark was the first European country to abolish the slave trade.</td>
</tr>
<tr>
<td>10.</td>
<td>Most slaves worked on large farms called plantations.</td>
<td>10. The Royal Navy would intercept slave trades and release the slaves.</td>
</tr>
</tbody>
</table>
**French Self Quiz**

<table>
<thead>
<tr>
<th>Where I live</th>
<th>Food and Drink</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I live in a small house</td>
<td>1. For breakfast, I have coffee, bread and cereal</td>
</tr>
<tr>
<td>2. I live in a big house</td>
<td>2. I don’t eat anything</td>
</tr>
<tr>
<td>3. I live in a small town</td>
<td>3. I would like to eat cereal everyday</td>
</tr>
<tr>
<td>4. I would like to live by the seaside</td>
<td>4. Usually we eat fish and chips</td>
</tr>
<tr>
<td>5. I would like to live in the countryside</td>
<td>5. For dessert, I have a chocolate mousse</td>
</tr>
<tr>
<td>6. In my home, there are 5 rooms</td>
<td>6. In the evening, we eat at six o’clock</td>
</tr>
<tr>
<td>7. There is the garden, the living room and my bedroom</td>
<td>7. I/ we/ you need to buy</td>
</tr>
<tr>
<td>8. There isn’t a dining room</td>
<td>8. A kilo of bananas</td>
</tr>
<tr>
<td>9. There isn’t a bathroom</td>
<td>9. Ten eggs</td>
</tr>
<tr>
<td>10. There isn’t a garden</td>
<td>10. 500 grams of apples</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Talent Show 1</th>
<th>Talent Show 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My talent is dancing</td>
<td>1. Sing louder!</td>
</tr>
<tr>
<td>2. My talent is playing the guitar</td>
<td>2. Switch off your mobile phone</td>
</tr>
<tr>
<td>3. I want to be a musician</td>
<td>3. Wake up!</td>
</tr>
<tr>
<td>4. I want to win the competition</td>
<td>4. Change your attitude!</td>
</tr>
<tr>
<td>5. You must make a video clip</td>
<td>5. Look at the camera!</td>
</tr>
<tr>
<td>6. You must go to the audition</td>
<td>6. He is the most good-looking</td>
</tr>
<tr>
<td>7. You can babysit</td>
<td>7. She is the least arrogant</td>
</tr>
<tr>
<td>8. You can rehearse at my house</td>
<td>8. She has the most talent</td>
</tr>
<tr>
<td>9. I’ll help you</td>
<td>9. He has the nicest voice</td>
</tr>
<tr>
<td>10. I have to do my homework</td>
<td>10. She is the most professional</td>
</tr>
</tbody>
</table>
### French Self Quiz Answers

<table>
<thead>
<tr>
<th>Where I live</th>
<th>Food and Drink</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. J’habite dans une petite maison</td>
<td>1. Pour le petit déjeuner, je prends un café, du pain et des céréales</td>
</tr>
<tr>
<td>2. J’habite dans une grande maison</td>
<td>2. Je ne mange rien</td>
</tr>
<tr>
<td>3. J’habite dans une petite ville</td>
<td>3. Je voudrais manger des céréales tous les jours</td>
</tr>
<tr>
<td>4. Je voudrais habiter au bord de la mer</td>
<td>4. D’habitude on mange du poisson et des frites</td>
</tr>
<tr>
<td>5. Je voudrais habiter à la campagne</td>
<td>5. Pour le dessert, je prends une mousse au chocolat</td>
</tr>
<tr>
<td>6. Dans ma maison il y a cinq pièces</td>
<td>6. Le soir, on mange à six heures</td>
</tr>
<tr>
<td>7. Il y a le jardin, le salon et ma chambre</td>
<td>7. Il faut acheter</td>
</tr>
<tr>
<td>8. Il n’y a pas de salle à manger</td>
<td>8. Un kilo de bananes</td>
</tr>
<tr>
<td>9. Il n’y a pas de salle de bains</td>
<td>9. Dix œufs</td>
</tr>
<tr>
<td>10. Il n’y a pas de jardin</td>
<td>10. Cinq cents grammes de pommes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Talent Show 1</th>
<th>Talent Show 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mon talent est danser</td>
<td>1. Chante plus fort !</td>
</tr>
<tr>
<td>2. Mon talent est jouer de la guitare</td>
<td>2. Éteins ton portable !</td>
</tr>
<tr>
<td>3. Je veux être musicien(ne)</td>
<td>3. Réveille-toi !</td>
</tr>
<tr>
<td>5. Tu dois faire un clip-vidéo</td>
<td>5. Regarde ka caméra !</td>
</tr>
<tr>
<td>6. Tu dois aller à l’audition</td>
<td>6. Il est le plus beau</td>
</tr>
<tr>
<td>7. On peut faire du babysitting</td>
<td>7. Elle est la moins arrogante</td>
</tr>
<tr>
<td>8. ON peut répéter chez moi</td>
<td>8. Elle a la plus de talent</td>
</tr>
<tr>
<td><strong>10. Je dois faire mes devoir</strong></td>
<td>10. Elle est la plus professionnelle</td>
</tr>
</tbody>
</table>
# Computer Science Self Quiz

## Study Point 1 – Algorithms quiz

1. What is an algorithm?
2. Why do you need to write an algorithm?
3. What is an important feature of an algorithm?
4. Give an example of an algorithm you could write about
5. Give two ways an algorithm can be represented
6. What happens if an algorithm is in the wrong order?
7. What’s the benefit of using flowcharts?
8. What is pseudocode?

## Study Point 2 – Sequencing and flowchart symbols quiz

1. What is control and sequencing used in?
2. Why are flowcharts and algorithms built?
3. What is control and sequencing used for?
4. Give an example program that is based on complex sequencing
5. What is the implication of complex sequencing?
6. What is a start/stop terminal?
7. What is the purpose of the input/output symbol
8. What is the process of a process symbol?
9. What is the purpose of a decision symbol?
10. What is the purpose of the control arrows?
11. What is the purpose of a subroutine symbol?

## Study Point 3 – Pseudocode quiz

1. How are most programs developed?
2. Give two examples of programming languages
3. Is Pseudocode a programming language?
4. What is pseudocode?
5. List the specific words that are used in pseudocode
6. What does the term ‘INPUT’ mean?
7. What does the term ‘OUTPUT’ mean?
8. What does the term ‘WHILE’ mean?
9. What does the term ‘FOR’ mean?
10. What does ‘FOR-THEN-ELSE’ mean?

## Study Point 4 – Flowcharts quiz

1. What is a flowchart?
2. Name an example of a simple flowchart
3. What happens when sensor 1 is triggered?
4. Once the barrier is opened, how long does it stay open for?
5. What happens when sensor 2 is triggered?
6. How long does the barrier take to close?
7. How many decision symbols are there in the flowchart?
8. How many input/output symbols are there?
<table>
<thead>
<tr>
<th>Study Point 5 – Complex flowcharts quiz</th>
<th>Study Point 6 – Data Packets quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Draw the symbol used at the start and end of a flow diagram</td>
<td>1. What is a data packet?</td>
</tr>
<tr>
<td>2. Draw the symbol used to connect two parts of a flow diagram together</td>
<td>2. What is added to a data packet before it is sent</td>
</tr>
<tr>
<td>3. Draw the symbol used for a process such as a calculation</td>
<td>3. Define the term transmit</td>
</tr>
<tr>
<td>4. Draw the symbol used for inputs to, or outputs from, the flow diagram</td>
<td>4. Describe how a data packets are transmitted across a network</td>
</tr>
<tr>
<td>5. Draw the symbol used when there are two or more different paths to take based on a choice</td>
<td>5. What happens to data before it’s sent?</td>
</tr>
<tr>
<td>6. Draw the symbol used to call different flow diagrams from within the flow diagram</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study Point 7 – Network Topologies quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe the bus topology</td>
</tr>
<tr>
<td>2. Describe the star topology</td>
</tr>
<tr>
<td>3. State an advantage of using the STAR topology</td>
</tr>
<tr>
<td>4. State a disadvantage of using STAR topology</td>
</tr>
<tr>
<td>5. State an advantage of using the BUS topology</td>
</tr>
<tr>
<td>6. State a disadvantage of using BUS topology</td>
</tr>
<tr>
<td>7. Which topology is cheaper to maintain and install?</td>
</tr>
<tr>
<td>8. Which topology offers better security and bandwidth (speed)?</td>
</tr>
</tbody>
</table>
## Computer Science Self Quiz Answers

### Study Point 1 – Algorithms quiz

1. A step by step set of instructions to solve a problem
2. To tell a computer (system) what to do
3. The steps need to be in the right order
4. Tying my shoelaces, cooking scrambled eggs, packing my bag in the morning
5. Pseudocode or flowcharts
6. The code may not work
7. To show the algorithm in a way that is easy to understand
8. Another example of an algorithm

### Study Point 2 – Sequencing and flowchart symbols quiz

1. All areas of computing including videos games
2. To form the basis of all software programs
3. To operate systems, control actions, create video games, control manufacturing devices
4. Video games
5. The more choices the user has
6. Shows when the flowchart starts and ends
7. Shows when data is input or information is output
8. Used when a process has to be carried out
9. Used when a decision needs to be made (normally has a question inside)
10. Shows the direction of logic (direction the flowchart will follow)
11. A marker for another process step or series of process steps that are defined elsewhere in the flowchart

### Study Point 3 – Pseudocode quiz

1. Using programming languages
2. Scratch and Python
3. No
4. Another example of an algorithm used to plan out programs
5. Input, output, while, for repeat-until, if-then-else
6. Indicates a user will be inputting something
7. Indicates that an output will appear on the screen
8. A loop
9. A counting loop
10. A decision (selection) in which a choice is made

### Study Point 4 – Flowcharts quiz

1. Shows the order in which a series of events is to be carried out
2. Automatic vehicle barrier, traffic light
3. The barrier opens
4. 1 second
5. The barrier begins to close
6. 1 second
7. Two
8. Four
### Study Point 5 – Complex flowcharts quiz

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><img src="image1" alt="Flowchart" /></td>
</tr>
<tr>
<td>2.</td>
<td><img src="image2" alt="Flowchart" /></td>
</tr>
<tr>
<td>3.</td>
<td><img src="image3" alt="Flowchart" /></td>
</tr>
<tr>
<td>4.</td>
<td><img src="image4" alt="Flowchart" /></td>
</tr>
<tr>
<td>5.</td>
<td><img src="image5" alt="Flowchart" /></td>
</tr>
<tr>
<td>6.</td>
<td><img src="image6" alt="Flowchart" /></td>
</tr>
</tbody>
</table>

### Study Point 6 – Data Packets quiz

1. A unit of information (data)
2. The destination and sender’s addresses
3. To send
4. Packets are numbered, sent separately, then put in the right order again in the other end
5. Data transmitted over the internet is broken down into smaller chunks or pockets to be sent

### Study Point 7 – Network Topologies quiz

1. Computer nodes connected to a main cable with terminators on each side
2. Nodes connected to a central switch/hub with their own dedicated connection
3. Fast performance, easy to install and expand, failure in the minor cables will only affect one node
4. More cables make it more expensive, hub/switch increases the cost
5. Simplest and cheapest to install and extend, failure of one node does not affect the rest of the bus network
6. If the main bus cable fails then the whole network will fail, performance of the network slows down rapidly with more nodes or heavy traffic
7. Bus topology
8. Star topology
## PE Self Quiz Questions

| 1. | What are the 3 categories of running events? |
| 2. | Describe the correct sprinting technique |
| 3. | What is meant by the term pacing? |
| 4. | Describe the correct javelin technique |
| 5. | Why is it important to lean back when throwing? |
| 6. | How do you hold a shot put correctly? |
| 7. | Why do you measure out your run up for the long jump? |
| 8. | Describe why falling forwards is important |
| 9. | Describe the technique for the Fosbury flop in the high jump |
| 10. | How do you generate the most power when completing the high jump? |

| 1. | What is the difference between a high catch and a low catch? |
| 2. | Describe two ways the fielders can get a batter out |
| 3. | Describe one of the three batting strokes |
| 4. | When would you play the defensive drive? |
| 5. | Describe how a batter can score runs |
| 6. | How do you hold the ball when bowling? |
| 7. | Describe the correct bowling technique |
| 8. | Explain how the batting team might include tactics during their game |

## Answers:

**PE Self Quiz Questions**

1. Middle, long and short distance races
   The correct sprinting technique involves lead leg first, driving out of the blocks, and moving arms in a ‘pocket to socket’ movement.

2. Setting off in a long distance race so you can maintain that level of performance for the whole race

3. Draw the javelin back, tip to cheek, rotate the body and bring arm over releasing at 90 degrees

4. Lean back to gain power

5. ‘clean palm, dirty neck’

6. You measure your run up so you don’t stutter

7. Falling forward is important because you measure the long jump from the point furthest back

8. Take off outside leg, driving knee high to gain height. Rotate the body and kick feet in the air, landing on your back

9. You generate power by driving up with your arm and leg.

**Answers:**

1. A high catch comes above your eyes, and you need your thumbs together to cushion the ball. A low catch, your little fingers should be touching

2. Catch the ball without it bouncing, hit the stumps when the batter is running

3. **Grip** – axe grip

4. **Stance** – side on, feet shoulder width apart, bat raised to waist height

5. **Footwork** – step towards the ball

6. **Stroke** – hit in straight line, high front elbow, follow through straight and up to head height

7. Defensive stroke is to stop the ball hitting the stumps, rather than trying to score runs

8. Getting to the opposite stumps without the ball being returned

9. **Grip** the ball with two fingers, draw a G with your arm, release at ear

10. Hit the ball where there are no fielders, play defensive shots when you are winning to stop yourself from getting out.
## Music Self Quiz – Yr 8

### Questions:

#### Music & Composition

1. What is a chord?
2. What is the bass drum is also known as?
3. What is a rhythm?
4. What is the most common time signature in pop music?
5. In electronic music the snare is sometimes replace with which sound?
6. Name five parts of an acoustic drum kit.
7. Electric guitars plug into an ....?
8. What does PA stand for?
9. How many string does a bass guitar have?
10. In pop music, what is ‘pop’ short for?

#### Music & Composition

1. Which word is used to describe how fast or how slow a piece of music is?
2. The word ‘dynamics’ describes what in music?
3. What must you never do with a microphone (give at least 2 examples)?
4. Which word describes two or more singers singing the same notes at the same time?
5. How many strings does an electric guitar have?
6. What does the word pitch mean?
7. What does a amplifier do?
8. Which word describes two or more singers singing different notes at the same time?
9. What word is used to describe the words in a song?
10. What is a riff?

#### Questions

#### Music & Composition

1. What is a melody?
2. In most pop music how many beats are there in a bar?
3. What is a bassline?
4. Can the guitar play melodies?
5. Can the guitar pay chords?
6. Can the saxophone play chords?
7. What’s older the acoustic guitar or the drum kit?
8. What is an arpeggio?
9. What year was the first electric guitar made?
10. Learning music makes you more intelligent. True or false.

#### Music & Composition

1. Does a soprano singer sing high or low?
2. Which family of instruments do the following instruments belong to: wood block, triangle, drums, maracas, castanets
3. What is the name of the repeating, catchy part in a song?
4. Does a bass singer sing high or low?
5. What does it mean to perform solo?
6. Name the largest drum on a drum kit.
7. What does the word ‘a capella’ mean?
8. Does performing music in front of an audience build your confidence?
9. What does the word ‘melody’ mean?
10. How many strings does bass guitar have?
## Music Self Quiz answers - Yr 8

### Answers:

<table>
<thead>
<tr>
<th>Music &amp; Composition</th>
<th>Music &amp; Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Two or more notes played together</td>
<td>1. Tempo</td>
</tr>
<tr>
<td>2. The kick drum</td>
<td>2. How loud or quiet an instrument, voice or piece of music is</td>
</tr>
<tr>
<td>3. A pattern of beats or sounds</td>
<td>3. (any of the following) hit it, scream/shout into it, drop it, point it at the amplifier/speaker</td>
</tr>
<tr>
<td>4. 4/4</td>
<td>4. Unison</td>
</tr>
<tr>
<td>5. A digital clap</td>
<td>5. 6</td>
</tr>
<tr>
<td>6. Kick drum, snare, hi-hat, crash, toms,</td>
<td>6. How high or low an instrument, voice or piece of music is</td>
</tr>
<tr>
<td>7. An amplifier</td>
<td>7. Makes an instrument or voice louder</td>
</tr>
<tr>
<td>8. Public Address system</td>
<td>8. Harmony</td>
</tr>
<tr>
<td>9. 4</td>
<td>9. Lyrics</td>
</tr>
<tr>
<td>10. Popular</td>
<td>10. A repeated pattern of notes or chords</td>
</tr>
</tbody>
</table>

### Answers:

<table>
<thead>
<tr>
<th>Music &amp; Composition</th>
<th>Music &amp; Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A sequence of notes played one after another.</td>
<td>1. High</td>
</tr>
<tr>
<td>2. Four beats in a bar.</td>
<td>2. Percussion</td>
</tr>
<tr>
<td>3. The lowest pitched part of a piece.</td>
<td>3. Chorus</td>
</tr>
<tr>
<td>4. Yes</td>
<td>4. Low</td>
</tr>
<tr>
<td>5. Yes</td>
<td>5. Perform on your own</td>
</tr>
<tr>
<td>6. No</td>
<td>6. Kick drum or bass drum</td>
</tr>
<tr>
<td>7. The acoustic guitar (1799)</td>
<td>7. Singing without music</td>
</tr>
<tr>
<td>8. The notes of a chord played individually</td>
<td>8. Yes</td>
</tr>
<tr>
<td>9. 1931</td>
<td>9. A sequence of notes played one after the other</td>
</tr>
<tr>
<td>10. True. Science backs this up. It’s real. Believe!</td>
<td>10. 4</td>
</tr>
</tbody>
</table>
## Science Questions

<table>
<thead>
<tr>
<th>Physics: Motion</th>
<th>Health and Lifestyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Write a definition for the word speed.</td>
<td>1. What are nutrients?</td>
</tr>
<tr>
<td>2. State the formula for calculating speed.</td>
<td>2. Name three types of nutrients.</td>
</tr>
<tr>
<td>3. Give the unit for speed.</td>
<td>3. What is a balanced diet.</td>
</tr>
<tr>
<td>4. State the law of moments.</td>
<td>4. Which solution is used to test for starch?</td>
</tr>
<tr>
<td>5. Write a definition for the word pressure.</td>
<td>5. Which solution is used to test for lipids?</td>
</tr>
<tr>
<td>6. Write a definition for the word upthrust.</td>
<td>6. What colour will Benedict’s solution if a food contains sugar?</td>
</tr>
<tr>
<td>7. State the formula for calculating pressure.</td>
<td>7. What is malnourishment?</td>
</tr>
<tr>
<td>8. Write a definition for the word density.</td>
<td>8. What is obesity?</td>
</tr>
<tr>
<td>9. Explain why atmospheric pressure decreases with altitude.</td>
<td>9. What is digestion?</td>
</tr>
<tr>
<td>10. State the unit for pressure.</td>
<td>10. Describe the order in which food passes through the digestive system.</td>
</tr>
<tr>
<td></td>
<td>11. What are enzymes?</td>
</tr>
<tr>
<td></td>
<td>12. What is a carbohydrase?</td>
</tr>
<tr>
<td></td>
<td>13. What is a protease?</td>
</tr>
<tr>
<td></td>
<td>14. What is a recreational drug?</td>
</tr>
<tr>
<td></td>
<td>15. What is a medicinal drug?</td>
</tr>
<tr>
<td></td>
<td>16. What is addiction?</td>
</tr>
<tr>
<td></td>
<td>17. What is the name of the drug in alcohol?</td>
</tr>
<tr>
<td></td>
<td>18. State two effects of alcohol on the body?</td>
</tr>
<tr>
<td></td>
<td>19. What is tar in cigarette smoke?</td>
</tr>
<tr>
<td></td>
<td>20. What is nicotine in cigarette smoke?</td>
</tr>
</tbody>
</table>

## Answers

<table>
<thead>
<tr>
<th>Health and Lifestyle</th>
<th>Motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substances that the body needs to survive and stay healthy.</td>
<td>1. how far an object travels divided by the time travelled</td>
</tr>
<tr>
<td>2. Any one from carbohydrates, lipids, proteins, vitamins, minerals, fibre and water</td>
<td>2. speed = distance / time</td>
</tr>
<tr>
<td>3. a diet with the right nutrients in the correct amounts.</td>
<td>3. m/s, km/h, or mph</td>
</tr>
<tr>
<td>4. Use iodine solution.</td>
<td>4. when an object is in equilibrium the sum of the clockwise moments is equal to the sum of the anticlockwise moments.</td>
</tr>
<tr>
<td>5. Use ethanol.</td>
<td>5. The ratio of force to the area over which the force is applied.</td>
</tr>
<tr>
<td>6. It will change from blue to red.</td>
<td>6. The upward force that a liquid or gas exerts on a body floating in it produced by the collisions of the particles in the liquid or gas.</td>
</tr>
<tr>
<td>7. When people are overweight or underweight because they have eaten the wrong amount or the wrong type of food.</td>
<td>7. pressure = force / area</td>
</tr>
<tr>
<td>8. When people are extremely overweight because they eat too much food or eat too many fatty foods.</td>
<td>8. The amount of mass per unit volume.</td>
</tr>
<tr>
<td>9. The process by which large molecules are</td>
<td>9. As you go up, the amount of air above you decreases, so the weight decreases. This decreases the pressure.</td>
</tr>
<tr>
<td></td>
<td>10. Newtons per square metre (N/m²)</td>
</tr>
</tbody>
</table>
broken down into small molecules of nutrients which can pass into the blood.

10. Mouth, gullet, stomach, small intestine, large intestine, rectum.

11. Proteins that break down large molecules into smaller molecules. They are biological catalysts because they speed up digestion without being used up.

12. An enzyme which breaks down carbohydrates to sugar molecules.

13. An enzyme which breaks down proteins to amino acids.

14. A drug that people take for enjoyment, to help them to relax or to help them to stay awake.

15. A drug which is prescribed by a doctor for a medical condition.

16. When a person becomes used to taking a drug and can only feel normal when the drug is taken.

17. Ethanol.

18. Any one from: stomach ulcers, heart disease, brain damage, liver damage (cirrhosis), damage to the unborn baby (in a pregnant female).

19. Contains chemicals that cause cancer.

20. An addictive chemical in tobacco smoke which makes the heart beat faster.