Year 9
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 or find easiest!

Practice makes perfect!
Unit 3 - Summer Term

Weather and Climate

Keywords/definitions

Weather - the condition of the atmosphere in one area at a particular time, for example if it is raining or windy. This can change hour to hour, day by day.

Climate - the average conditions of an area over a long period of time. What conditions of rainfall and temperature are typical of that area, for example, is always hot and wet in a rainforest.

Cause - Why the hazard happened?

Effect - what were the impacts of the weather event?

Responses - How was the extreme weather event dealt with? What did people do straight away/in the long-term to get the area back to normal and help people to rebuild their lives.

Distribution - where? E.g. where are they located? where are they found?

Intensity - how strong/powerful

Frequency - how often they occur

Global Atmospheric Circulation

At the equator, the sun's rays are most concentrated. This means it is hotter. This one fact causes global atmospheric circulation at different latitudes.

Distribution of Tropical Storms

Occur in low latitudes between 5° and 30° north and south of the equator (in the tropics), South Asia & Australia - cyclones USA & Caribbean - hurricanes Japan & Philippine - typhoons

Ocean temperature needs to be above 27°C. Usually, occur between summer and autumn when sea temperatures are the warmest.

Features of a tropical storm

Tropical storms can be huge, up to 300 miles wide! A typical tropical storm is roughly a symmetrical shape.

In the centre of a tropical storm is the “eye” - conditions here are usually calm, with no clouds.

On either side of the eye is a tall bank of cloud called the “eye wall” - here we get strong winds, heavy rain, thunder and lightning.

Forming a Tropical Storm

1. Air is heated above warm tropical oceans, of at least 27°C.
2. Air rises under low pressure conditions.
3. Strong winds form as rising air draws in more air and moisture causing torrential rain.
4. Air spins due to Coriolis effect around a calm eye of the storm.
5. Cold air sinks in the eye so it is clear and dry.
6. Heat is given off as it cools powering the storm.
7. On meeting land, it loses source of heat and moisture so loses power.

Climate change and tropical storms

Climate change will affect tropical storms too. Warmer oceans will lead to more intense storms and potentially more frequent ones. It may increase in the number of areas affected by tropical storms also, increasing the amount of devastation caused.

How do tropical storms eventually lose their energy?

Tropical storms die down when they pass over land, as they're cut off from their energy source (warm water). Also when tropical storms pass over land, friction with the land causes the storm to lose energy.
### Extreme weather in the UK

**Rain** – can cause flooding damaging homes and business.

**Snow & Ice** – causes injuries and disruption to schools and business. Destroys farm crops.

**Hail** – causes damage to property and crops.

**Drought** – limited water supply can damage crops.

**Wind** – damage to property and damage to trees potentially leading to injury.

**Thunderstorms** – lightening can cause fires or even death.

**Heat waves** – causes breathing difficulties and can disrupt travel.

UK weather is getting more extreme due to climate change. Temperatures are higher and rain is more frequent and intense, causing more flooding. Since 1980 average temperature has increased 3 degree and winter rainfall has increased.

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### Boscastle Floods, Cornwall

Monday 16th August 2004, the village of Boscastle in Cornwall, south-west England, experienced severe weather causing major flooding. Heavy thundery showers had developed across the South West; these were the remnants of Hurricane Alex (2004) which had crossed the Atlantic. An exceptional amount of rain fell over eight hours that afternoon, reaching in one day the same amount of rainfall usually recorded in the whole month of August.

#### Primary Effects

- 75 cars, 5 caravans, 6 buildings and several boats being washed into the sea
- Large loss of possessions, approximately 100 homes and businesses were destroyed
- Approximately 150 people clinging to trees and roofs of buildings and cars
- Luckily, there were no deaths.

#### Secondary Effects

- Long term and costly repairs needed for many building including homes and businesses.
- Insurance prices for homes/businesses rose
- Tourist attractions such as the witchcraft museum were destroyed.
- Many local people suffered from long term stress and anxiety

#### Immediate Responses

- People being relocated to safe areas and being housed in hotels that were not affected, free of charge.
- Also, buildings that were damaged were secured by building inspectors, within 7 days, after which homeowners could retrieve their possessions. The local doctor’s surgery acted as an emergency centre.
- Prince Charles, the Duke of Cornwall, also made a large financial donation to support those affected

#### Long-term Responses

- £800,000 flood defence scheme was completed in April 2005, which included two underground pumping stations, widening and deepening nearby rivers, and raising the height of a nearby car park, where many of the cars that were washed away were previously parked.

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### Comparing Tropical Storms – Hurricane Katrina (HIC) and Typhoon Haiyan (LIC)

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 5 storm that hit the southern-west states of America. 29th Aug 2005. The city of New Orleans in Louisiana was most affected.</td>
<td>Category 5 storm on Saffir-Simpson scale. Hit on 3rd November 2013, one of the strongest storms ever recorded.</td>
</tr>
</tbody>
</table>

#### Primary Effects

- 1,300 people died
- 500,000 homeless
- 18 school destroyed
- $108 billion of damage
- 80% of New Orleans flooded

- At least 6340 people died
- 600,000 people displaced
- 90% of buildings in Tacloban destroyed
- Habitats & crops destroyed
- Widespread flooding

#### Secondary Effects

- Drinking water was contaminated by sewage for 5 months with increased spread of disease
- Looting/increase in crime
- Psychological stress/fear

- 6 million people lost their source of income
- Landslides as a result of the flooding
- Shortages of water, food and shelter lead to increase outbreak of disease
- Looting and violence increase.

#### Immediate Responses

- Local people took shelter in the Superdome stadium
- The US Government was heavily criticised for its handling of the disaster. Despite many people being evacuated, it was a very slow process. The poorest and most vulnerable were left behind.
- The government provided $50 billion in aid.
- During the early stages of the recovery process, the UK government sent food aid.
- The National Guard was mobilised to restore law and order in New Orleans.

- International government and aid agencies gave food, water, temporary shelter.
- 1200 evacuation centres were set up to help homeless
- UK government sent shelter kids, each one being able to provide emergency shelter for one family.

#### Long term responses

- 220 miles of floodwalls and levees were strengthened or replaced, to lower the risk of severe flooding in the future.
- US Government issued $16.7 billion dollars to rebuilding effort (house/infrastructure)
- $1.3 million invested into improving hurricane related public broadcasting stations to raise future alarms/warnings quickly and efficiently
- Red Cross charity provided mental health support to over 825,000 people

- The UK and countries including UK, USA, Australia and Japan donated financial aid, supplies and medical support for a long period of time after the Typhoon
- Rebuilding of roads, bridges, airports
- Oxfam – supported the replacement of fishing boats – a main source of income for many local people
- “Cash for Work” programmes – local people were paid to help clear debris and rebuild cities.
**How can a war be ‘cold’?**

This term, your History lessons will be focussed on conflict in the modern world. Since the end of WWII, most of the intervening years have been characterised as part of a Cold War between the USA and USSR. This period of time is referred to as a ‘Cold War’ because there was no direct conflict between the main countries involved in it – the USA and USSR. However, despite this lack of direct conflict, there were still many conflicts which occurred during the Cold War period which the superpowers were involved in. Furthermore, even when there wasn’t conflict, there was an overarching threat of catastrophic destruction for militaries and ordinary civilians alike created by new developments in warfare.

**Timeline**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1939</td>
<td>WWII breaks out</td>
</tr>
<tr>
<td>1941</td>
<td>The Grand Alliance formed</td>
</tr>
<tr>
<td><strong>May 1945</strong></td>
<td>War in Europe ends</td>
</tr>
<tr>
<td><strong>August 1945</strong></td>
<td>US drops atomic bombs (A-bombs) on Hiroshima and Nagasaki</td>
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<tr>
<td>1946</td>
<td>Churchill delivers his ‘Iron Curtain’ speech</td>
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<tr>
<td>1948</td>
<td>USSR develops its own A-bomb</td>
</tr>
<tr>
<td>1949</td>
<td>NATO formed</td>
</tr>
<tr>
<td>1952</td>
<td>USA develops the hydrogen bomb (H-bomb)</td>
</tr>
<tr>
<td>1955</td>
<td>Warsaw Pact formed</td>
</tr>
<tr>
<td>1956</td>
<td>Khrushchev becomes leader of the USSR</td>
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<tr>
<td>1957</td>
<td>USA launches first ICBM</td>
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<tr>
<td>1957</td>
<td>Soviet’s launch Sputnik satellite</td>
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<tr>
<td>1960</td>
<td>Nigeria achieves independence</td>
</tr>
<tr>
<td>1960</td>
<td>Winds of Change speech</td>
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<tr>
<td>1962</td>
<td>Cuban Missile Crisis</td>
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<tr>
<td>1964</td>
<td>Vietnam War begins</td>
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<tr>
<td>1969</td>
<td>Neil Armstrong becomes first man on the moon</td>
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<tr>
<td>1970</td>
<td>Soviet invasion of Afghanistan</td>
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<tr>
<td>1980</td>
<td>USA leads boycott of the Moscow Summer Olympics</td>
</tr>
<tr>
<td>1981</td>
<td>Ronald Reagan becomes President of the USA</td>
</tr>
<tr>
<td>1984</td>
<td>USSR leads boycott of the LA Summer Olympics</td>
</tr>
<tr>
<td>1985</td>
<td>Mikhail Gorbachev becomes leader of the USSR</td>
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<tr>
<td>1989</td>
<td>The Berlin Wall falls</td>
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<tr>
<td>1991</td>
<td>The Soviet Union is formally dissolved</td>
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<tr>
<td>2001</td>
<td>World Trade Centre attacked</td>
</tr>
<tr>
<td>2001</td>
<td>War on terror begins</td>
</tr>
<tr>
<td>2011</td>
<td>Syrian Civil War begins</td>
</tr>
<tr>
<td>2017</td>
<td>Manchester bombing</td>
</tr>
</tbody>
</table>

**Glossary**

Superpower: A country with dominant economic, military, political and/or cultural power which it uses to influence or control others

Deterrent: Something used to discourage others from certain behaviour

MAD: Mutually Assured Destruction – a policy which meant that if either superpower launched a nuclear missile it was guaranteed the other would launch there’s in retaliation

SDI: Strategic Defence Initiative – Reagan’s plans to introduce defence systems into space

Total War: Where civilians as well as the military become targets of warfare, and all of a society’s resources are directed towards the war effort.

Détente: a period of peace between two groups which were previously at war, or hostile

ICBM: Inter-continental Ballistic Missile – a rocket-based weapon capable of launching bombs at distant targets

Glasnost: a policy of openness and transparency introduced by Gorbachev

Decolonisation: the removal of the methods of foreign power and control over another country.

**The Cold War and Global Conflict c.1939-present**

**Fig.1: Nuclear weapons owned by the USA and USSR**

- United States
- USSR/Russia

**Key Cold War Figures**

Harry Truman: President of the USA at the end of WWII

Joseph Stalin: leader of the USSR during WWII

Winston Churchill: British Prime Minister (PM) during WWII

Nikita Khrushchev: leader of the USSR, 1956-62

John F Kennedy: President of the USA, 1961-3

Harold Macmillan: British PM, 1956-64

Fidel Castro: Revolutionary leader of Cuba

Richard Nixon: US President, 1969-74


Mikhail Gorbachev: Leader of the USSR, 1985-91

Osama Bin Laden: Leader of Al-Qaeda
**Exam approaches: we are historians**

**Write like a historian**

**PEEL**
Remember to write in PEEL paragraphs (Point, Evidence, Explain, Link)

**Connective Words**
As a historian, you are often constructing a jigsaw of the past. You should make this clear in your writing by using connective words. These might include:

- However...
- Consequently...
- As a result of...
- On the other hand...
- Nevertheless...

**Explaining Consequences**

When asked to explain the consequence of a particular event, make sure that you **THINK FIRST, WRITE SECOND**

Think:
- What happened as a result of the event in question?
- What specifically linked the event to the result you’ve specified?

Write (reverse your thinking process)
- Identify and describe the aspect of the Uprising which led to your chosen consequence
- What was the link between the Uprising and your consequence
- Explain the consequence you’ve identified

**Reference**
Reference is about identifying information from a source that it doesn’t 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.

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

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

We can infer from this that the Vikings must have traded to place value on gold and silver. They weren’t just killing for fun.

**Cuban Missile Crisis**

For 13 days in October 1962 the world hovered on the brink of nuclear war, with the United States and the Soviet Union locked in a standoff at the height of the Cold War.

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.

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?

In history, there is always change and continuity over time. Whenever you think of a period of time, things won’t have remained exactly the same throughout that time. It is important to keep this in mind when you’re comparing different time periods and making assessments between them.
Module 1: Who Am I?

La famille: Remember when talking about family you must include the correct gender for each person. Le/la/les. This is important when referring to your + family member.

‘mon’ my for a masculine noun, ‘ma’ my for a feminine noun, ‘mes’ for a plural noun such as grandparents

Personnalité: remember the key phrase ‘je suis’ + personality adjective. Your adjective must agree with your person. For example: elle est intelligente

L’amitié:

Je m’entends bien avec... / Je me dispute avec... / Je me chamaille avec... / je m’occupe de...

Module 2: Free Time Activities

Sports: You must remember to use JOUER for sports with a ball and FAIRE for all other sports and activities.

Films: remember that most French film genres are similar in English however the word order changes. Eg: un film de gangster, un film fantastique, un film d’arts martiaux, un film d’horreur

Internet: il est facile de / il est possible de - both phrases are followed by the infinitive verb. Ex: passer trop de temps, tchatter en ligne, partager ses détails, utiliser un dico en ligne

Useful phrases linked to music:

Mon chanter préféré est... / j’aime ses paroles / sa musique me donne envie de danser / je regarde des clips vidéo

Module 3: Special Celebrations

1. Noël
2. La veille de Noël
3. Le Divali
4. Le 6 janvier
5. La Chandeleur
6. Le Nouvel An
7. La Saint-Valentin
8. Le 14 juillet
9. Pâques

Grammar Revision

Present tense:
Take off the last two letters and add the correct ending
ER VERB e, es, e, ons, ez, ent
RE VERBS s, s, s, ons, ez, ent
IR VERB is, is, iss, issons, issez,issent

Past tense:
The past tense is always formed of three parts

Future tense:
The future tense is formed of the present tense of aller with the infinitive. Je vais manger, je vais visiter, il va aimer, elle va discuter
Year 9 – Transformations

**Reflection**
- Reflection: the replacement of each point on one side of a line by the point symmetrically placed on the other side of the line.
- Need a mirror line
- Reflection in the line $x = -2$

**Rotation**
- Rotation: the action of rotating a shape about an axis or central point.
- Need a Centre point
- Need a Direction
- Need a measure of turn
- Use of tracing paper
- Rotation $90°$ Clockwise
  - About $(-5,0)$

**Translation**
- Translation: the action of ‘sliding’ a shape to a new position.
- Described using Vector Notation

- $x$ Direction along
- $y$ Direction up/down
- $R \rightarrow S = \text{Translation} \left( \frac{-10}{8} \right)$

**Enlargement**
- Enlargement: the action of resizing a shape to the scale factor given from a specific point.
- Need a Centre point
- Need a scale factor

- $R \rightarrow S$
  - Use projection lines
  - Enlargement
  - Scale factor $3$
  - From $(3, -6)$
### Year 9 – Probability

#### Introduction

The likelihood of an event happening

<table>
<thead>
<tr>
<th>Event</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>25%</td>
</tr>
<tr>
<td>1/2</td>
<td>50%</td>
</tr>
<tr>
<td>3/4</td>
<td>75%</td>
</tr>
<tr>
<td>1</td>
<td>100%</td>
</tr>
</tbody>
</table>

0% 25% 50% 75% 100% 0 0.25 0.5 0.75 1

Impossible Even Chance Certain

#### Counting outcomes

Working out how many combinations there are

- Rolling a die and flipping a coin

<table>
<thead>
<tr>
<th>Heads</th>
<th>Tails</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>H, 1</td>
</tr>
<tr>
<td>2</td>
<td>H, 2</td>
</tr>
<tr>
<td>3</td>
<td>H, 3</td>
</tr>
<tr>
<td>4</td>
<td>H, 4</td>
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<tr>
<td>5</td>
<td>H, 5</td>
</tr>
<tr>
<td>6</td>
<td>H, 6</td>
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<tr>
<td></td>
<td>T, 1</td>
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<td></td>
<td>T, 2</td>
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<tr>
<td></td>
<td>T, 3</td>
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<td></td>
<td>T, 4</td>
</tr>
<tr>
<td></td>
<td>T, 5</td>
</tr>
<tr>
<td></td>
<td>T, 6</td>
</tr>
</tbody>
</table>

This is a sample space diagram

There are 12 possible outcomes from this event

#### Calculating probability

- **P(Events)** = \( \frac{\text{number of successful outcomes}}{\text{total number of outcomes}} \)

- **P(3)** = \( \frac{2}{8} \rightarrow \frac{1}{4} \)

  - Simplify answers where possible

  - **The ‘OR’ rule** (mutually exclusive)

    - **P(a or b)** = **P(a)** + **P(b)**

    - **P(2 or 4)** = \( \frac{2}{8} + \frac{1}{8} \rightarrow \frac{3}{8} \)

    - Add each probability

  - **The ‘AND’ rule** (independent)

    - **P(a and b)** = **P(a)** × **P(b)**

    - **P(2 tails)** = \( \frac{1}{2} \times \frac{1}{2} \rightarrow \frac{1}{4} \)

    - Multiply each probability

#### Types of events

- **Mutually exclusive**
  - Events that cannot happen at the same time
  - Rolling a die \( \rightarrow P(1 \text{ and } 6) \)
  - All probabilities from the event will sum to make 1

- **Independent events**
  - Events where the outcome of one doesn’t affect the outcomes of the others
  - Picking a counter out of a bag, replacing it and repeating.

- **Dependent events**
  - Events where the outcome of one does affect the outcomes of the others
  - Picking a counter out of a bag, not replacing it and repeating.

#### Calculating expected outcomes

- **P(event)** × **number of trials**

#### Probability trees

- Probability trees are really useful to calculate the probabilities of combined events happening

  - Multiply along branches

    - **P(Red and Red)** = \( \frac{4}{15} \)

    - **P(Red and Blue)** = \( \frac{2}{15} + \frac{6}{15} = \frac{8}{15} \)

    - Add together all combinations

- **Dependent events**
  - Probability trees where the outcome of one events affects the outcome of the next event e.g. no replacement, weather etc.

  - \( P(\text{Rain and late}) = (0.3 \times 0.4) = 0.12 \)
  - \( P(\text{On time}) = (0.18 + 0.56) = 0.74 \)

  - When dealing with no replacement, remember to reduce the denominator by one for the second event
**Year 9 – Dealing with data**

### Mean

- **Mean** = \( \frac{\text{Total of all values}}{\text{number of values}} \)
- **Example**: \( 3, 3, 4, 5, 5, 8, 9, 15 \)
  - \( \text{Mean} = \frac{52}{8} = 6.5 \)
- Collect it all together and share it out evenly
- **Formula** \( \text{Mean} = \frac{\sum x}{n} \)

### Median

- **Median** = Middle value (Numbers written in order)
- **Example**: \( 3, 3, 4, 5, 5, 8, 9, 15 \)
  - **Median** = 5
- **Location** = \( \frac{n + 1}{2} \)
- **Finding the middle value**
- **Example**: \( 1, 1, 3, 3, 7, 7 \)
  - **Each value appears twice so there is no mode**

### Mode

- **Mode** = Most common value/item
- **Example**: \( 3, 3, 4, 5, 5, 8, 9, 15 \)
  - **Mode** = 3 and 5
- **Occurrence of no mode**
- **Example**: \( 1, 1, 3, 3, 7, 7 \)
  - **Each value appears twice so there is no mode**

### Range

- **Range** = Largest - Smallest
- **Example**: \( 3, 3, 4, 5, 5, 8, 9, 15 \)
  - **Range** = 15 - 3 = 12
- **Interpreting measures of spread**
- **The Smaller the range, the closer and more consistent the values are.**
- **The Larger the range, the more varied and more inconsistent the values are.**

### Types of data

- **Quantitative**
  - Data that is numeric
  - Data that can be counted and only has certain values
  - People on a bus
  - Shoe Size
  - Dress size
  - Continuous
  - Data that can be measured to various levels of accuracy
  - Height of a tree
  - Speed of a car
  - Mass of a person

- **Qualitative**
  - Data that is descriptive
  - Categorical data
  - Hair colour
  - Favourite food
  - Sport
  - Grouped Data
  - Data which is organised into classes
  - Primary
  - Data collected by you
  - Secondary
  - Data gathered from another source

### Census

- Data is collected from the **WHOLE population**
- Can take a very long time to collect the information

### Sample

- Data is collected from **PART of the population**
- Quicker to collect the data and the data can be used to describe the whole population

### Random

- Your sample is randomly selected
- Each member assigned a number
- Numbers randomly generated
- Those numbers used in sample

### Stratified

- Proportionate numbers from each group selected to make sample
- **Amount in group** = \( \frac{\text{Total number}}{\text{Sample size}} \)
<table>
<thead>
<tr>
<th>Mother, Any Distance by Simon Armitage</th>
<th>Themes: Bonds, Parental Love, Connections, Attachments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content, Meaning and Purpose</strong></td>
<td>The speaker describes how his mother helps him to move into a house, using the event to symbolize his coming-of-age independence.</td>
</tr>
<tr>
<td><strong>Tones</strong></td>
<td>Appreciative, Optimistic, Affectionate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Porphyria’s Lover by Robert Browning</th>
<th>Themes: Possession, Passivity, Insanely Love</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content, Meaning and Purpose</strong></td>
<td>Dramatic monologue recounting the stormy night when the speaker strangled his lover, Porphyria, to death.</td>
</tr>
<tr>
<td><strong>Tones</strong></td>
<td>Haunting, Disturbing, Melancholic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Winter Swans – Owen Shears</th>
<th>Themes: Possession, Passivity, Insanely Love</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content, Meaning and Purpose</strong></td>
<td>The poem describes a troubled couple walking around a lake after two days of heavy rain. They are “silent and apart” until they are captivated by the sight of two swans on the water.</td>
</tr>
<tr>
<td><strong>Tones</strong></td>
<td>Dark, Sinister, Sexual, Melancholic</td>
</tr>
</tbody>
</table>

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**Eden Rock by Charles Casley**

| Themes: Memories, Family/Parents, Bonds |
|----------------------------------------|----------------------------------------|
| **Content, Meaning and Purpose** | The speaker is reminiscing about his parents as a young couple, as they picnic by the stream. He writes in the present tense to make the memory seem real. |
| **Tones** | Light, Ethereal, Nostalgic |

<table>
<thead>
<tr>
<th>Before You Were Mine by Carol Anne Duffy</th>
<th>Themes: Longing, Control, Fear, Possession</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content, Meaning and Purpose</strong></td>
<td>This dramatic monologue tells the story of a farmer’s marriage to a ‘too young’ bride. Since their marriage she has always been scared of him (and all men).</td>
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<tr>
<th>The Pea’s Bride by Charlotte Mew</th>
<th>Themes: Frustrated, Dark, Prejudiced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content, Meaning and Purpose</strong></td>
<td>This dramatic monologue tells the story of a man’s marriage to a ‘too young’ bride. Since their marriage she has always been scared of him (and all men).</td>
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<td>Frustrated, Dark, Prejudiced</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Form and Structure</th>
<th>The poem has four main stanzas of eight lines each, with a rhyme scheme of AABBAABB, which builds the tension and creates a sense of unease.</th>
</tr>
</thead>
</table>

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**Form**

- **Everyday nostalgia**: the parents are presented as living a simple but happy life. *“She pours tea from a Thorens, the milk from an old HP Sauce bottle” in cups.*

- **“Eden Rock”**: Biblical reference to the Garden of Eden, evoking ideas of original sin and the concept of paradise.

- **Language-decay**: conveying images of hope and peace. *“Her hair [... takes on the light]”, shy whitens as if by three suns.”*
<table>
<thead>
<tr>
<th>Language</th>
<th>Form and Structure</th>
<th>Context</th>
<th>Language for comparison</th>
<th>What you answers should include</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Hewned&quot; verbs convey the intensity of the experience. &quot;Wrenched&quot;, &quot;scorching&quot;, &quot;Gnaws&quot;.&quot; Images of nature convey how the father now realises that this is a natural process for parents: &quot;A sunny day with the leaves just turning&quot;, &quot;nature's give and take&quot;. &quot;Into the wilderness&quot; also conveys anxiety.</td>
<td>The six stanzas of four lines each are written in iambic pentameter. The steady rhythm reflects the steadiness and reliability of the father's ploughing.</td>
<td>Seamus Heaney lived from 1939-2013. He grew up on his father's farm in Northern Ireland and so the poem is thought to be autobiographical. The poem was published in 1966, within a collection on themes of childhood, identity and rural life.</td>
<td>When poems have similarities Similarity... Both poems convey... Both poems explore... This idea is also explored further... In a similar way... Likewise...</td>
<td>What a clear answer to the question that must refer to both poems. How are they similar/different? Use your best vocabulary in your own words, using the words from the question to show that you are thinking about what the question wants you to do.</td>
</tr>
<tr>
<td>&quot;The touch-lines new-rulled&quot;; new boundaries were set for the father, symbolising the son's independence. &quot;Ordeals will fire one's irresolute clay&quot;; irresolute means uncertain. He now accepts that the experience will make his son more solid and strong, like fired clay.</td>
<td>The volta (and role reversal) occurs in the final stanza when it is his father who is &quot;stumbling/Beyond me&quot;.</td>
<td>- The metaphor comparing one thing to another. - The simile comparing two things with like or as. - Personification — giving human qualities to the non-human. - Imagery — language that makes us imagine a sight, sound, touch, smell or taste. - Mood or feeling created in a poem.</td>
<td></td>
<td>How multiple embedded quotes to prove any statements you make about either poem. You must name any devices, even if you are simply saying a word is a verb or noun! You must also zoom in on key words or phrases, explaining what this reveals about the poem or ideas.</td>
</tr>
<tr>
<td>No answer.</td>
<td></td>
<td></td>
<td></td>
<td>Why — Explaining why the poet has chosen certain words or devices? What are they trying to reveal, explain, describe, or portray? This is your chance to consider context and authorial intent.</td>
</tr>
</tbody>
</table>

**Poetry Terms**

- **Stanza** — a group of lines in a poem.
- **Repetition** — repeated words or phrases
- **Emjambment** — a sentence or phrase that runs onto the next line.
- **Caeusura** — using punctuation to create pauses or stops.
- **Contrast** — opposite concepts/feelings in a poem. **Juxtaposition** — contrasting things placed side by side.
- **Oxymoron** — a phrase that contradicts itself.
- **Form** — The structure of the poem.
- **Free verse** — poetry that doesn't rhyme.
- **Blank verse** — in iambic pentameter, but with no rhyme.
- **Sonnet** — a poem of 14 lines with clear rhyme scheme. **Rhymin couplet** — a pair of rhyming lines next to each other.
- **Meter** — arrangement of stressed/ unstressed syllables.
- **Monologue** — one person speaking for a long time.

**Language Terms**

- **Metaphor** — comparing one thing to another.
- **Simile** — comparing two things with like or as.
- **Personification** — giving human qualities to the non-human.
- **Imagery** — language that makes us imagine a sight, sound, touch, smell or taste.
- **Mood or feeling** created in a poem.
- **Alliteration** — words that are close together that start with the same letter or sound.
- **Assonance** — the repetition of similar vowel sounds.
- **Consonance** — the repetition of consonant sounds.
- **Plosives** — short burst of sound: t, k, p, d, g, or b sound.
Familial Love
Mother, Any Distance
Before You Were Mine
Walking Away
Eden Rock
Follower

Romantic Love
The Farmer’s Bride
Porphyria’s Lover
Winter Swans

Separation
Mother, Any Distance
Before You Were Mine
Walking Away
Porphyria’s Lover
The Farmer’s Bride
Winter Swans
Eden Rock

Conflict in Love
Mother, Any Distance
The Farmer’s Bride
Winter Swans
Porphyria’s Lover

Memories
Mother, Any Distance
Before You Were Mine
Walking Away
Eden Rock
Follower

Desire and Longing
Before You Were Mine
Porphyria’s Lover
The Farmer’s Bride
Eden Rock

Nature
Walking Away
Eden Rock
Follower
Winter Swans
The Farmer’s Bride

Death
Eden Rock
Porphyria’s Lover
Before You Were Mine (?)
Eden Rock

Other possible themes: Age/Getting Older, Power, Fear, Religion
**Left Hand Technique**
- Pinch your nose. Your thumb must be opposite your finger. It's the same on Ukulele; thumb opposite finger.

**Notes of the open strings**
- 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.

**Tab**
- Tab is short for tablature and is a way of writing down Ukulele music – the same as guitar but for 4 strings instead
- It's often used to help you to play melodies (tunes)

**Dynamics**
- How loudly or quietly you play

**Melodies**
- A sequence of notes played one after another

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

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

**Fret**
- The metal lines on the neck UNDER the strings.
### Loops
- Loops are used extensively in modern music. They are audio waveforms that are edited to be repeatable without a pause.
- Choosing the right loops and arranging them in a musical order will require strong critical listening skills and some knowledge of music theory (keys etc).
- You can make your own loops by recording your voice or your instrument directly into the software.

### Mixing
- Mixing is the process of making critical listening decisions about the balance of the different instruments in your composition.
- A good mix will mean that your music sounds good on all systems. A bad one will make people switch off.

### Computer Music Production Year 9

#### VIP Charanga (Soundation)
VIP Charanga is a DAW (Digital Audio Workstation).
It enables you to make incredible sounding music on your computer.

### MIDI
- MIDI is the language your computer uses to turn binary information into sound. The instrument above is a MIDI Controller that features a keyboard for melodies.
- It also features several pads and faders that you can ‘map’ to music software to trigger loops and effects with your hands like a DJ.

### Effects
- Effects change the sound of your audio.
- Reverb can simulate the sound of any large space or room.
- Delay will create an echo like effect.

You can also record live audio onto your tracks including vocals & guitar.
Cell Structure

Prokaryotic cells, such as bacteria, are single-celled organisms. They are a lot smaller than eukaryotic cells and their genetic material is not enclosed in a nucleus.

- **Plasmid**
  Small loops of DNA that are not part of the chromosomal DNA

- **Chromosomal DNA**
  A long loop of genetic material that is not enclosed in a nucleus

Eukaryotic cells are found in animals and plants, as well as in fungi and protists. They have a cell membrane, cytoplasm, and genetic material that is enclosed in a nucleus.

- **Animal Cells**
  Most animal cells have the following subcellular structure:
  - **Nucleus**
    Contains genetic material
  - **Mitochondria**
    The place where aerobic respiration, which releases energy, occurs
  - **Ribosomes**
    The place where proteins are produced
  - **Cytoplasm**
    Made up of a liquid gel that holds all cellular organelles; the place where chemical reactions occur
  - **Cell Membrane**
    A thin, selectively permeable membrane that controls which substances can enter and exit the cell

- **Plant Cells**
  Most plant cells have the same subcellular structure as animal cells, plus:
  - **Cell Wall**
    Made of cellulose, which strengthens and protects the cell
  - **Vacuole**
    Filled with cell sap; stores materials and waste; and keeps the cell turgid (rigid)
  - **Chloroplasts**
    Contains chlorophyll; the place where photosynthesis occurs

Cell Specialisation

Cells may be specialised to carry out a specific function.

- **Animal Cells**
  - **Sperm Cells**
    The haploid nucleus contains half the number of chromosomes of a normal cell.
  - **Nerve Cells**
    Nerve cells (neurons) are highly specialised for transmitting impulses from one part of the body to another. They are long and have branched connections to join to other neurons and form networks.
  - **Muscle Cells**
    Muscle cells contain lots of mitochondria to provide energy. These cells can contract and relax, and they can also store glucose as glycogen.

Cell Organisation

- **Cells**
  - Cells are the basic building blocks of all living organisms.
- **Tissue**
  - A tissue is a group of cells with a similar structure and function.
- **Organs**
  - Organs are collections of different tissues that perform specific functions.
- **Organ Systems**
  - Organ systems work together in systems to form organisms.
**Diffusion**

Diffusion is the spreading out of gas or solute particles from an area of higher concentration to an area of lower concentration.

Particles move both ways across a membrane. However, if there are more particles on one side, the net (overall) movement will be from an area of higher concentration to an area of lower concentration until the concentrations on both sides are equal.

**In the lungs, oxygen from the air diffuses into the blood in the capillaries. Carbon dioxide from the blood diffuses into the air in the alveoli.**

**Urea is a waste product produced in liver cells. It diffuses from cells into the blood, and then travels to the kidneys where it is excreted.**

The following factors affect the rate of diffusion:

- **Concentration Gradient**
  - The bigger the difference between the concentrations, the faster the rate of diffusion.

- **Membrane Surface Area**
  - The larger the surface area of the membrane, the faster the rate of diffusion, because more particles can pass through at the same time.

- **Temperature**
  - At a higher temperature, particles have more energy and therefore move quicker.

**Deoxygenated blood in**

**Oxygenated blood out**

**Red blood cells in capillary**

**Alveoli**

**Concentrated blood out**

**Single-Celled Organisms and Multicellular Organisms**

A single-celled organism has a relatively large surface area to volume ratio. As a result, its surface area is large enough to allow sufficient diffusion of substances through its membranes to meet its needs. However, larger multicellular organisms have smaller surface area to volume ratios and therefore need specialised gas exchange surfaces and transport systems to assist with the exchange of substances.

**Look at how the lungs are adapted to increase gas exchange.**

1. The lungs contain millions of tiny air sacs called alveoli, which provide a large surface area for gas exchange.
2. The walls of the alveoli are only one cell thick, creating a short diffusion path. They are also moist, so oxygen and carbon dioxide can be dissolved and diffused more quickly.
3. The alveoli are covered in a mesh of capillaries, which provide a constant supply of blood so that large volumes of gases can be exchanged.

Oxygen diffuses from the air into the blood, and carbon dioxide diffuses from the blood into the air. Both do so along steep concentration gradients, which are maintained by ventilation and the flow of blood through capillaries in the lungs.

**Other Examples**

- **Mammals**
  - The small intestines are lined with tiny projections called villi, which aid the absorption of nutrients. They have a large surface area, thin walls (one cell thick) and a good blood supply.

- **Plants**
  - Plants leaves have a large surface area to maximise the absorption of carbon dioxide. They are also thin so that carbon dioxide does not have far to diffuse into the leaf.

- **Fish**
  - Fish have specially adapted gills that are highly folded to provide a large surface area. The flow of water and blood through the gills also ensures steep concentration gradients.

**Osmosis**

Osmosis is the diffusion of water across a partially permeable membrane from a dilute solution to a concentrated solution.

A partially permeable membrane allows molecules to pass through it in both directions. However, large molecules, such as salt, are too big to fit through.

If the concentration of water is higher on one side of the membrane, it will diffuse through the membrane to the side where the concentration is lower. The net movement will stop when the concentration of water is the same on both sides.

Osmosis is used by plants to absorb water from the soil through their root hair cells.

**Osmosis can cause tissue to gain or lose mass. To calculate the change in mass, the following formula can be used.**

\[
\text{Percentage change in mass} = \frac{\text{Change in mass}}{\text{Initial mass}} \times 100
\]

**Active Transport**

Active transport occurs when molecules need to be moved against a concentration gradient or they are too big to diffuse through the membrane. This process requires energy from respiration.

Transport proteins capture the molecules and transfer them across the cell membrane.

Active transport is used by plants to take up mineral ions from the soil because the concentration of mineral ions is much lower in the soil than in the root cells.

Active transport is also used to absorb sugar molecules from the gut into the blood. This allows absorption to continue even if the concentration of sugar in the gut is lower than in the blood.
Enzyme Action

Enzymes are formed from chains of amino acids that are folded in a particular way to create a small pocket called the active site.

The molecule upon which an enzyme acts, or the substrate, also has a specific shape, which fits together with the shape of the active site. This is known as the lock-and-key mechanism. Enzymes can both split apart and join substrates to form products.

The Lock-and-Key Mechanism

Substrate
Active site
Enzyme
Enzyme-substrate complex
Products

If the shapes of the enzyme and substrate do not match, then the reaction will not be catalysed. Therefore, enzymes can only work with specific substrates. It is now known that the enzyme needs to change its shape slightly to perfectly match the shape of the substrate. This is called the induced-fit model.

Enzyme Activity

Enzymes are affected by their surrounding conditions. Temperature, pH, and substrate and enzyme concentration are all factors that can affect the rate of enzyme-controlled reactions.

As temperature increases, so does the rate of reaction. However, at high temperatures, some of the bonds that hold the enzyme together break, changing the shape of the active site so the enzyme becomes denatured.

Different enzymes work best at different pHs. If the pH changes too far from the optimum, the bonds holding the enzyme together weaken, changing the shape of the active site so the enzyme becomes denatured.

As substrate concentration increases, so does the rate of reaction because there are more substrate molecules to collide with enzyme molecules. However, after a certain concentration, any increase has no effect on the rate of reaction because the enzymes are working at their maximum rate.

Uses of Enzymes

1. Digestion
   Enzymes are used in digestion to break down large molecules into smaller molecules so they can be used for growth, respiration and other life processes.
   - Part of a starch molecule
   - Separate glucose molecules
   - Complex carbohydrates (starches) are broken down into glucose by carbohydrates such as amylase.
   - Proteins are broken down into amino acids by proteases.
   - Lipids are converted into glycerol and fatty acids by lipases.

2. Metabolism
   Metabolism refers to all the chemical reactions in an organism. These reactions use energy and are catalysed by enzymes. Examples include:
   - Conversion of glucose to starch, glycogen and cellulose.
   - Formation of lipids from a molecule of glycerol and three molecules of fatty acids.
   - Using glucose and nitrate ions to form amino acids, which form proteins.
   - Breakdown of excess proteins to form the waste product urea.
   - Respiration.
Mitosis and the Cell Cycle

During the cell cycle, a cell's DNA and subcellular structures are replicated before the cell divides by a process called mitosis to produce two identical daughter cells.

1. **Cell Matures**
   - Before dividing, a cell needs to grow and increase the number of subcellular structures such as ribosomes and mitochondria.

2. **DNA Copied**
   - The DNA replicates to form two copies of each chromosome, and the copies form an X shape.

3. **Cell Prepares for Division**
   - The cell grows quickly and continues with protein synthesis in preparation for mitosis. Any damaged DNA is also repaired.

4. **Mitosis**
   - During mitosis, cells divide into identical cells. Each set of chromosomes is pulled to either end of the cell, and the nucleus divides.

Cell Differentiation

When new cells are formed in organisms, they are simple in form. However, over time, they differentiate into specialised cells to form different types of organs.

Most types of animal cell differentiate early in life - in the embryo - whereas many types of plant cell retain the ability to differentiate throughout their life.

In mature animals, new cells are still formed by cell division to replace old cells and to repair tissues. As the cell differentiates into a specialised cell, it adopts different subcellular structures. For example, cells in the bone marrow differentiate into red blood cells. The cells lose their nucleus, change shape and become filled with the red, oxygen-carrying pigment, haemoglobin.

Stem Cells in Embryos

At an early stage of development, an embryo is a ball of cells. Each cell will divide and later give rise to all the different types of cells in the body. These cells can be cloned and used to develop into most cell types in a laboratory.

Stem Cells in Adult Animals

Stem cells are present in adult animals. For example, bone marrow inside the cavities of bones can naturally form blood cells. These cells can also be manipulated in a laboratory to differentiate into some other cell types.

Stem Cells in Plants

Plants have stem cells that can develop into all types of plant cells throughout the life of the plant. They are mainly found in specific growing points, called meristems, at the tips of roots and shoots.

Medical Uses of Stem Cells

Stem cells can potentially be used to replace damaged cells and tissues. Therefore, they can be used to help with conditions such as diabetes and paralysis. However, if a patient is treated with stem cells from another individual, the immune system may attack the new cells and reject them.

The use of stem cells has some potential risks. For example, viruses live inside cells, and it is possible that a viral infection could be transferred in the stem cells.

Some people also have ethical or religious objections because embryos are destroyed when obtaining stem cells. Although adult stem cells can be used for some treatments, they cannot develop into as many types of cell as embryonic stem cells can.

In therapeutic cloning, a nucleus is taken from a cell of the patient and transplanted into an unfertilised egg cell. The egg cell can then produce stem cells that are genetically identical to those of the patient and will not be rejected.

Blood Vessels

- **Arteries** carry oxygenated blood (except pulmonary artery) at high pressure, from the heart to the body.
  - Have thick walls made of elastic fibres
  - Have narrow channels (lumen) to maintain high pressure

- **Veins** carry deoxygenated blood (except pulmonary veins) at low pressure, from the body to the heart.
  - Have thin walls and contain valves that prevent the backflow of blood
  - Have wide channels (lumen) to ease the flow of blood

- **Capillaries** allow the exchange of materials between tissues and blood.
  - Have walls that are only one cell thick
  - Have channels (lumen) the width of one blood cell, which distort the cells and aid gaseous exchange
**Plant Transport**

Plants are made of specialised cells, tissues and organs that work together to allow substances to move around the plant.

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**Specialised plant cells**

- **Xylem Cells**
  - Xylem vessels transport water and strengthen plant structures. They are made of dead cells that have lost their end walls and cytoplasm to become hollow tubes for transporting water. Their walls are thickened with lignin to provide strength.

- **Phloem Cells**
  - Phloem vessels transport sugars (sucrose) in plants. Phloem cells have perforated end walls and a very thin layer of cytoplasm to aid transport. Each cell has an attached companion cell, which is needed to supply materials the cytoplasm normally makes.

- **Root Hair Cells**
  - Root hair cells are found in the roots of plants and are specialised for absorbing water and mineral ions. They have hair-like projections that provide a large surface area for water absorption.

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**Factors Affecting the Rate of Transpiration**

- **Light Intensity**
  - The greater the light intensity, the greater the rate of transpiration. When it is dark, photosynthesis cannot take place, and the stomata close. This means that little water can diffuse out of the leaves.

- **Temperature**
  - The greater the temperature, the greater the rate of transpiration. Water particles have more energy when it is warm, and they evaporate and diffuse out of the stomata at a faster rate.

- **Air Flow**
  - The greater the air flow, the greater the rate of transpiration. When air flow is fast, water vapour is moved away quickly to create a high concentration gradient for diffusion.

- **Humidity**
  - The lower the humidity, the faster the rate of transpiration. When the air is dry, there is a high concentration gradient for diffusion.
**Practical Activity**

There are a wide variety of tests that are used to identify carbohydrates, lipids and proteins.

**Testing for Starch**

Add iodine solution to the test sample. If starch is present, the mixture of the sample and iodine solution will change colour from orange-brown to blue-black.

**Testing for Simple Sugars**

Add Benedict’s solution to the test sample, and place it in a hot water bath (75-80°C). If sugar is present, a colour change occurs from blue to green, yellow, orange and then brick red. A precipitate will also form, so the sample will go cloudy.

**Testing for Protein**

Biuret solution is added to the sample, sometimes in two parts: biuret A (sodium hydroxide) and biuret B (copper sulfate). If protein is present, the solution will change colour from blue to purple.

**Testing for Lipids**

Lipids are detected using the emulsion test. Mix the test sample with 2 cm³ of ethanol and add an equal volume of distilled water. If lipids are present a milky-white emulsion will form.

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**Practical Activity**

Osmosis can be investigated by placing cylinders of potato into different concentrations of salt or sugar solution. In this activity, we will use sugar.

1. Cut the potatoes into evenly sized cylinders so that they have the same surface area.
2. Pour different concentrations of sugar solution (0.2 mol⁻¹, 0.4 mol⁻¹, 0.6 mol⁻¹, 0.8 mol⁻¹) into beakers.
3. Measure the mass of each cylinder. Then place one in each beaker and leave them for 24 hours.
4. Take the cylinders out of the solution, dry them and then measure their masses again.
5. Calculate the percentage change in mass of each potato using the formula:
   \[ \% \text{Change in mass} = \frac{\text{Change in mass}}{\text{Original mass}} \times 100 \]
6. Plot a graph to show the results, with sugar concentration on the x-axis and percentage change in mass on the y-axis.

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**Light Microscope**

- **Light microscope** uses light waves and lenses to magnify objects.
- **Eye lens** (Magnification × 160)
- **Objective lens** (Magnification of eye lens × Magnification of objective lens)

**Microscopic objects are measured using these units:**

- **Millimeters (mm)**
- **Micrometers (μm)**: \( 1 \times 10^{-6} \text{m} \)
- **Nanometers (nm)**: \( 1 \times 10^{-9} \text{m} \)
- **Picometers (pm)**: \( 1 \times 10^{-12} \text{m} \)

**Example:** The image of a cell viewed at ×40 magnification has a diameter of 1 mm. What is the cell’s real diameter?

1. Rearrange the magnification formula so real size is the subject:
   \[ \text{Real size} = \frac{\text{Size of Image}}{\text{Magnification}} \]
2. Substitute the numbers into the formula:
   \[ \text{Real size} = \frac{1 \text{ mm}}{40} \]
3. Solve:
   \[ \text{Real size} = 0.025 \text{ mm or } 25 \mu \text{m} \]
Energy Resources

Non-Renewable Resources
- Coal
- Natural Gas
- Nuclear
- Renewables
- Solar
- Wind
- Biofuels
- Geothermal
- Hydro
- Tidal

New Different Energy Resources Are Used
- Transport
  - Transport is one of the biggest contributors to greenhouse gas emissions in the UK, with oil-based fuels such as petrol, diesel, and kerosene being the most popular fuels for transport.
  - Alternative renewable energy resources include biofuels, and electrically powered vehicles. (Recharged using electricity from renewable power stations.)

Fossil Fuels
- The burning of fossil fuels releases CO2 into the atmosphere and is the main source of greenhouse gas emissions. It is believed that the increase in greenhouse gases in the atmosphere has contributed to global warming, which has a significant effect on the environment and people.

Electricity Generation
- The UK’s electricity supply comes from a wide variety of sources, with over 60% being generated from fossil fuels (mainly gas and coal). Nuclear power and renewable energy resources (mainly wind and biomass) make up most of the remaining 40%.

Circuit Symbols

A cell is a store of chemical energy.

A bulb or lamp lights up only when it is in a circuit that is complete.

A meter measures current. Current is the flow of electric charge. It is measured in amperes (A) or milliamperes (mA). The relationship between current and charge is:

\[ Q = i t \]

where:
- \( Q \) is charge in coulombs (C)
- \( i \) is current in amperes (A) or milliamperes (mA)
- \( t \) is time in seconds (s)

Example:

If a current of 3 A flows through a wire for 5 minutes, find the charge.

\[ Q = i t = 3 \text{ A} \times 5 \times 60 \text{ s} = 900 \text{ C} \]

Potential Difference
- Potential difference is measured in volts (V) and is the energy per unit charge.

Resistance
- The resistance of a component is the amount of opposition to the flow of electrical charge.

Example:

The potential difference across the lamp is 3 V and the current is 0.3 A. Calculate the resistance of the lamp in this circuit.

\[ R = \frac{V}{I} = \frac{3 \text{ V}}{0.3 \text{ A}} = 10 \Omega \]
**Prophets**

A Prophet is someone who is believed to be a messenger sent by God. The Qur’an mentions 25 prophets by their name.

**Prophet Adam** – Muslims believe Adam was both the first man and prophet. God spoke to him and soon his descendants began to spread over the whole earth.

**Prophet Abraham (Ibrahim)** – he was born in the city of Ur in modern Iraq. At the time, many leaders claimed they were gods, therefore people were polytheistic (believed in more than one god). Abraham rejected this and believed there was only one God.

**Prophet Muhammad** – Muslims believe Muhammad is the final prophet Muhammad and messenger. Although he is not considered to be divine, he is considered the most special of the prophets. He is often referred to as ‘the Seal of the Prophets’ to emphasize his importance as the final and most important of God’s messengers.

**Quran**

- The Qur’an is the most important holy book for Muslims. They believe that it was revealed to Muhammad by God during the Night of Power through angel Jibril.
- Prophet Muhammad received the Qur’an over a 23 year period of his life.
- Initially the Qur’an was memorised through word of mouth. However, towards the end of his life, Muhammad started to dictate chapters (surahs) to his companions so they could write them down.
- There are 114 surahs in the Qur’an which have been split into over 6000 verses.

**Belief in Allah**

- Muslims believe in one God called Allah, hence it is a monotheistic religion.
- Muslim beliefs about Allah’s nature are found in the Qur’an which Muslims believe are the direct word of God. The main characteristics God revealed in the Qur’an are tawhid (oneness of God), meaning God is just one.
- God is merciful and compassionate so wants humans to understand what he is like.
- Some Muslims would still argue that Allah is transcendent and so is far beyond human understanding.
- Nobody has seen Allah so Muslims cannot fully understand what he is like.

**Key Events**

**The Night of Power** – Muslims believe Prophet Muhammad received revelations over 23 years from God about how people should live. The first of these was from angel Jibril in 610 CE while Muhammad was praying in a cave and the Qur’an was revealed to him.

**The split in Islam** – after Prophet Muhammad’s death, Islam continued to spread under the rule of the caliphs, and a large Caliphate (empire) was established. However, there was disagreement amongst Muslims over who should succeed Muhammad as leader, which caused the religion to split into two groups: Sunni Muslims and Shi’a Muslims. Sunni Muslims accepted the authority of Abu Bakr, who was known as the first rightly guided khilafah, while Shi’a Muslims felt Ali (the 4th successor) should have been the leader.

**Peace and Justice in Islam**

- Justice means rewarding the good and punishing the bad, and making sure that what is right is what happens in society.
- Justice is important to Muslims because the Qur’an says God as just and wants people to treat each other fairly and to establish justice.
- Surah 49 in the Qur’an says “And act justly. Truly, God loves those who are just”.
- The word Islam is derived from ‘aslama’, which means to surrender or submit, so Islam is the religion of submission to the will of God.
- Peace is important to Muslims because Islam teaches that accepting Islam brings inner peace through submitting to the will of Allah.
- When Muslims have inner peace it encourages them to have peaceful relationships with others.

**Year 9 RE Summer Term: Islam**

Use this knowledge organiser to revise before you complete your self-quiz

**Key Words**

- **Tawhid** – belief in the oneness of God.
- **Caliph** – the Arabic word for the leader of the whole Muslim community after the death of Muhammad, which means ‘successor’.
- **Shirk** – the sin of associating other things with God or worshipping anything other than God, which is considered to be the worst sin in Islam.
- **Ummah** – the Muslim community.
- **Sunni** – the majority (about 85%) of Muslims across the world who believe that the Rightly Guided Caliphs were rightful successors of Muhammad.
- **Shi’a** – a minority group of Muslims who believe that Ali and his descendants should have succeeded Muhammad as leaders of Islam; the word means ‘party of Ali’.
- **Surah** – a chapter within the Qur’an.
- **Dar as Salaam** – the House of Peace.
**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

---

**Overarm throw**

This is used to throw over long distances with speed.

The technique:

- Stand side on to target.
- Opposite foot to throwing arm forward.
- Throwing arm starts behind head, with elbow bent at 45 degree angle.
- Ball held high (Usain Bolt position!)
- As ball is thrown, forward, hips and shoulders rotate forward too for power.
- Throwing arm follows through.

---

**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 ball through in straight line, block the ball and hold stance, no follow through
**Keyword**

- **Drive**
  - The part of the race where the athlete keeps low and has short powerful strides.

- **Maximal**
  - The largest amount possible.

- **Pace**
  - The speed at which someone moves.

- **Power**
  - The speed at which strength can be used.

- **Angle**
  - The direction something is released at.

- **Stride**
  - The length of step.

- **Relay**
  - To send something from one person to another.

- **Performance**
  - The way in which an activity is completed.

---

**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

---

**Jumping**

- **High jump technique**
  - 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.
Study Point 1 - Data types

Data is classified into types, such as a set of whole numbers (also known as integers) or a set of printing characters.

Different types of data are represented in different ways inside a computer and need varying amounts of memory to store them. They also have different operations that can be performed upon them. All values that belong to the same data type will be represented in the same way.

The most commonly supported data types in programming languages are:

<table>
<thead>
<tr>
<th>Data type</th>
<th>Example</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integer (whole number)</td>
<td>4, 27, 65535</td>
<td>1 to 8 bytes</td>
</tr>
<tr>
<td>Floating point (decimal number)</td>
<td>2.7, 5.63</td>
<td>4 to 8 bytes</td>
</tr>
<tr>
<td>Character</td>
<td>a, F, 3, $, %</td>
<td>1 byte</td>
</tr>
<tr>
<td>String</td>
<td>abc, hello world</td>
<td>Limited to the amount that can be stored in main memory</td>
</tr>
<tr>
<td>Boolean</td>
<td>true or false</td>
<td>1 bit</td>
</tr>
</tbody>
</table>

Study Point 2 - IF Statements

IF statements

Programs consist of a set of instructions that are carried out one after another. Sometimes there may be more than one path (or set of steps) that can be followed. At this point, a decision needs to be made. This decision is known as selection.

For example, this simple algorithm prints out a message depending on how old you are:

1. Ask how old you are
2. If you are 70 or older, say “You are aged to perfection!”

The selection comes in step 2. If you are aged 70 or over, one message is displayed.

As a flowchart, the algorithm would look like this:

![Flowchart](image-url)
Study Point 3 – Network Types

**LANs and WANs**

There are three main types of network:

1. Local Area Network (LAN)
2. Wide Area Network (WAN)
3. Personal Area Network (PAN)

**LAN**

A LAN covers a small area such as one site or building, e.g. a school or a college.

**WAN**

A WAN covers a large geographical area. Most WANs are made from several LANs connected together.

**PAN**

A PAN is a computer network used for data transmission amongst devices such as computers, telephones, tablets and personal digital assistants.

**Computer Science**

- The Internet is a WAN.
- A network of bank cash dispensers is a WAN.
- A school network is usually a LAN.
- LANs are often connected to WANs, for example a school network could be connected to the Internet.
- WANs can be connected together using the internet, leased lines or satellite links.
Study Point 4 – Network Topologies

**Bus Network**

- **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**

- **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
Study Point 5 - 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.
# Year 9 - Mathematics: Questions

<table>
<thead>
<tr>
<th>Sequences and Graphs</th>
<th>Comparing Shapes</th>
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<tr>
<td>1. Find the midpoint of (3,8) and (9, 20)</td>
<td>1. What is meant by congruent?</td>
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<td>2. Find the gradient of the line that goes through the points (1, 2) and (7, 5)</td>
<td>2. What does it mean if two shapes are similar?</td>
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<td><strong>Multiplicative Reasoning</strong></td>
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### Sequences and Graphs

1. Find the midpoint of (3, 8) and (9, 20)
   \[
   \text{midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) = \left(\frac{3 + 9}{2}, \frac{8 + 20}{2}\right) = (6, 14)
   \]

2. Find the gradient of the line that goes through the points (1, 2) and (7, 5)
   \[
   \text{gradient} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 2}{7 - 1} = \frac{3}{6} = \frac{1}{2}
   \]

3. Complete this sentence:
   Any equation for a straight line can be written in the form \( y = mx + c \), where \( m \) is the \textit{gradient} and \( c \) is the \textit{y-intercept}.

4. Find the nth term for the sequence:
   \[2, 5, 8, 11, 14, \ldots\]
   \[\Rightarrow n^\text{th term} = 3n - 1\]

5. Find the nth term for the sequence:
   \[10, 8, 6, 4, 2, \ldots\]
   \[\Rightarrow n^\text{th term} = -2n + 12\]

6. Write the gradient and y-intercept of \( y = 3x + 4 \)
   \[m = \text{gradient}, \ c = \text{y-intercept}
   \]

7. Write the gradient and y-intercept of \( y = -2 - 4x \)
   \[m = -4, \ c = -2 = (0, -2)\]

8. Write the gradient and y-intercept of \( 2y = 6x + 1 \)
   \[
   (\text{divide by 2})
   \]
   \[y = 3x + \frac{1}{2}, \ m = 3, \ c = \frac{1}{2} = (0, \frac{1}{2})\]

9. What is the equation of the line that passes through the points (0, -1) and (5, 9)
   \[
   y = \frac{9 - (-1)}{5 - 0} = \frac{10}{5} = 2
   \]
   \[y = mx + c \Rightarrow y = 2x - 1\]

10. A line has a gradient of 4, and passes through the point (3, 8). What is the equation of the line?
    \[m = 4 \Rightarrow y = mx + c \Rightarrow y = 4x + c\]

### Comparing Shapes

1. What is meant by congruent?
   Two shapes are congruent if they are \textit{identical}.

2. What does it mean if two shapes are similar?
   Two shapes are similar if one is an \textit{enlargement} of the other.

3. What are the 5 conditions for congruent triangles?
   \(SSS, SAS, ASA, AAS, RHS\)

4. Two rectangles are similar. One has a length of 4cm and width of 2cm. The other rectangle has a length of 6cm. What is the width of the second rectangle?
   \[
   \frac{1.5}{4} = \frac{x}{6}
   \]
   \[x \approx 2.25\text{ cm}\]

5. Write out the sin, cos and tan ratios.
   \[\text{opp} \Rightarrow \sin B = \frac{4}{5}, \ \text{adj} \Rightarrow \cos B = \frac{3}{5}, \ \text{hyp} \Rightarrow \tan B = \frac{4}{3}\]

6. Can the sin, cos and tan ratios be used for any triangle?
   No, they can only be used for right-angle triangles.

7. A right-angle triangle has a missing angle. You are given the opposite and adjacent lengths of the triangle. Which trigonometric ratio can you use to find the missing angle?
   \[\tan B = \frac{\text{opp}}{\text{adj}}, \ \text{you can use the tan ratio.}\]

8. A right-angle triangle has an internal angle of 60°. The side adjacent to the angle is 2cm. What is the length of the hypotenuse of the triangle?
   \[h = \frac{2}{\cos 60^\circ} = h = \frac{2}{0.5} = 4\text{ cm}\]

9. A right-angle triangle has a missing angle. The side opposite to the angle is 4cm. The hypotenuse of the angle is 8cm. Work out the missing angle.
   \[\sin B = \frac{4}{8} = 0.5 \Rightarrow B = 30^\circ\]

10. What is the value of \(\sin 56^\circ\)? Give your answer to 3sf.
    \[\sin 56^\circ \approx 0.82908375726 \approx 0.829 (3sf)\]
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<td>1. What components do you need to fully describe an enlargement?</td>
</tr>
<tr>
<td><em>Primary data is data I collect myself.</em></td>
<td>To describe an enlargement, give the scale factor and the coordinates of the centre of enlargement.</td>
</tr>
<tr>
<td><em>Secondary data is collected by someone else.</em></td>
<td>2. If I enlarge a shape by $-\frac{1}{2}$, what will happen to the shape?</td>
</tr>
<tr>
<td>2. What is meant by discrete data? What is meant by continuous data??</td>
<td>The lengths of the shape will halve, and the shape will be translated to the opposite side of the centre of enlargement.</td>
</tr>
<tr>
<td>Discrete data can only take particular and specific values. Continuous data is measured, and so can take any value.</td>
<td>3. What is the formula for percentage change?</td>
</tr>
<tr>
<td>3. Why can you only calculate an estimate of the mean from a grouped frequency table?</td>
<td>Percentage change = [ \frac{\text{actual change}}{\text{original amount}} \times 100% ]</td>
</tr>
<tr>
<td>As your data is grouped you do not have exact values, and so need to estimate using midpoints.</td>
<td>4. Saffron invests £3000. When her investment matures, she receives £3320. Calculate the percentage increase.</td>
</tr>
</tbody>
</table>
| 4. What steps do you take to find the mode of a group of data?                  | \[
\frac{3320 - 3000 \times 100\%}{3000} = \frac{320}{3000} \times 100\% = 10.67\%
\]
| whichever group has the highest frequency is the modal group.                   | (c(e)d)                                                                                 |
| 5. What steps do you take to find the median of a group of data?                | 5. What is the formula for calculating average speed?                                    |
| Add all of your frequencies together to get the total frequency. Add 1 to the total frequency and then divide by 2 to get your median value, whichever group contains your median value is your median group. | \[ \text{average speed} = \frac{\text{distance}}{\text{time}} \]                        |
| 6. What steps do you take to find the mean of a group of data?                  | 6. A cyclist travels 40km in 2 hours. What is the average speed he travelled??          |
| Find the midpoint of each group and multiply it by its corresponding frequency. | \[
\frac{40 \text{ km}}{2 \text{ h}} = 20 \text{ km/h}
\]                                   |
| Divide the sum of the midpoints multiplied by frequency by the sum of frequencies. | 7. A car travels at 60mph for 4 hours. How many miles did the car travel?               |
| 7. How do you draw a frequency polygon? You can draw a frequency polygon by joining the midpoints of the tops of the bars in a frequency diagram. | \[
60 \text{ mph} \times \frac{4 \text{ h}}{4} = 240 \text{ miles}
\]                       |
| 8. Scatter graphs can show three types of correlation. What are they??           | 8. A train travels 120 miles at a speed of 90 mph. How much time did the journey take?  |
| Positive correlation, negative correlation, and no correlation.                  | \[
\frac{120 \text{ miles}}{90 \text{ mph}} = \frac{120}{90} \text{ hours} = 1.3 \text{ hours}
\] |
| 9. What is an outlier? An outlier is a value that doesn’t follow the trend or pattern. | 9. Round 34.534 to 3 significant figures.                                               |
| 10. Why might you use a line of best fit? You could use a line of best fit to clearly illustrate the trend, or general direction that a group of data points are following. | 10. Convert $2400\text{cm}^2$ to $\text{mm}^2$                                          |
| \[
1 \text{ cm} = 10 \text{ mm}
(10 \text{ mm})^2 = (10 \text{ mm})^2 \times 100 = 240,000
1 \text{ cm}^2 = 100 \text{ mm}^2
\] | \[
2400 \text{ cm}^2 = 240,000 \text{ mm}^2
\] |
1. What is meant by mutually exclusive?
Events are mutually exclusive if one or the other can happen, but not at the same time.

2. What is the formula for estimated probability?

\[
\text{Estimated probability} = \frac{\text{frequency of event}}{\text{total frequency}}
\]

3. What do the probabilities of mutually exclusive events add up to?
The probabilities add up to 1.

4. What 3 forms are all probabilities written in?
Fractions, decimals or percentages.

5. 20 students study French, 30 study German and 5 of them study both French and German. Show this on a Venn diagram.

![Venn Diagram]

6. There are 5 green, 3 red and 2 blue sweets in a jar. What is the probability of randomly choosing a green AND a red sweet? Total = 5 + 3 + 2 = 10 sweets

\[
P(\text{green}) = \frac{5}{10} = \frac{1}{2} \quad P(\text{red after green}) = \frac{3}{9} = \frac{1}{3}
\]

\[
P(\text{green and red after}) = \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}
\]

7. What does it mean to have 2 independent events?
Two events are independent if the results of one do not affect the results of another.

8. There are 3 red and 3 blue counters in a bag. You pick a counter at random, and do not replace it. What is the probability of randomly selecting 3 red counters in a row? Show this using a tree diagram.

![Tree Diagram]

\[
P(R, R, R) = \frac{3}{6} \times \frac{2}{5} \times \frac{1}{4} = \frac{6}{120} = \frac{1}{20}
\]

9. A test can either be passed or failed. The probability of failing is 15%. What is the probability of passing?

100 - 15 = 85%.

\[
P(\text{pass}) = 75%.
\]

10. There are 15 chocolates in a bag. 5 are dark chocolate, 7 are milk chocolate and 3 are white chocolate. What is the probability of randomly choosing a chocolate which is NOT milk chocolate?

\[
P(\text{not milk}) = \frac{3}{15}
\]

\[
P(\text{not milk}) = 1 - \frac{7}{15} = \frac{15}{15} - \frac{7}{15} = \frac{8}{15}
\]
<table>
<thead>
<tr>
<th>Questions</th>
<th>11. Complete this quote and name the poem: “Her hair, the colour __ _____, takes _____.”</th>
</tr>
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<td>1. What is enjambment?</td>
<td>12. Complete this quote and name the poem: “I was a nuisance, _____. _____. / Yapping always.”</td>
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<td>2. What is a caesura?</td>
<td>13. Complete this quote and name the poem: “See where the stream-path is! / ______ is not as hard as you might think.’ / I had not thought that it ______. ______.”</td>
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<td>3. What is a metaphor?</td>
<td>14. Complete this quote and name the poem: “She shut the ______ out and the ______.”</td>
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<td>4. What is a simile?</td>
<td>15. Complete this quote and name the poem: “When us was wed she turned afraid / Of love and ____ and all things ______.”</td>
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<td>5. What is imagery?</td>
<td>16. Complete this quote and name the poem: “I remember my ______ in those high-heeled red shoes, ______.”</td>
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<td>6. What is a half rhyme?</td>
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<td>7. What is iambic pentameter?</td>
<td>18. Complete this quote and name the poem: “the line still feeding out, unreeling / ____ between us. _____. Kite.”</td>
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<td>8. What is iambic tetrameter?</td>
<td>19. Complete this quote and name the poem: “two floors below your fingertips still ______ / the last one-hundredth of an inch...”</td>
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<td>9. What is a trochee?</td>
<td>20. Complete this quote and name the poem: “The sky ______ as if lit by three ______.”</td>
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<td>10. Complete this quote and name the poem: “I reach / towards a hatch that opens on an ______ / to fall or ______.”</td>
<td></td>
</tr>
<tr>
<td>Quote</td>
<td>Poem</td>
</tr>
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<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>21. Complete this quote and name the poem: “His shoulders _____ like a full _____ strung”</td>
<td>21. Complete this quote and name the poem: “And now your ghost _____ toward me over George Square / till I see you, clear as _____, under the tree,”</td>
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<td>22. Complete this quote and name the poem: “They are waiting for me ____________”</td>
<td>22. Complete this quote and name the poem: “That _____ love lasts / where you sparkle and waltz and _____ before you were _____.”</td>
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<td>23. Complete this quote and name the poem: “But today / It is my _____ who keeps stumbling / Behind me, and will not ______.”</td>
<td>23. Complete this quote and name the poem: “The clouds had _____ all – / two days of rain and then a _____ / in which we walked,”</td>
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<td>24. Complete this quote and name the poem: “at last I knew / Porphyria _______ me; surprise / Made my heart _____.”</td>
<td>24. Complete this quote and name the poem: “I propped her head up as ____, / Only, this time, my shoulder bore / Her head, which _____ upon it still:”</td>
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<td>25. Complete this quote and name the poem: “It is _____ years ago, almost to the day – / A sunny day with _____ just turning.”</td>
<td>25. Complete this quote and name the poem: “climb / the ladder to the loft, to breaking ____, where something has to _____;”</td>
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<td>26. Complete this quote and name the poem: “I found / A thing to do, and all her hair / In one long yellow string I _____ / Three times her little throat around, / And _____ her. No pain felt she; / I am quite sure she felt no _____.”</td>
<td>26. Complete this quote and name the poem: “She put my arm about ____ ____, And made her smooth ____ shoulder bare.”</td>
</tr>
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<td>27. Complete this quote and name the poem: “They _____ to me from the other bank. / I hear them ______.”</td>
<td>27. Complete this quote and name the poem: “Like the shut of a winter’s day / Her smile _____, and ‘twasn’t a woman – / More like a frightened ______.”</td>
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<td>28. Complete this quote and name the poem: “All I ever did was _____ / In his broad _____ round the farm.”</td>
<td>28. Complete this quote and name the poem: “I noticed our hands, that had, somehow, / ____ the ___ between us / and folded, one over the other, like a pair of ____ settling after flight.”</td>
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<td>29. Complete this quote and name the poem: ““Not _____, not _____!” her eyes beseech / When one of us comes within ____.”</td>
<td>29. Complete this quote and name the poem: “That moment she was _____, _____, fair, / Perfectly _____ and good:”</td>
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<tr>
<td>30. Complete this quote and name the poem: “And all night long we have not stirred, / And yet God has not said a _____!”</td>
<td>30. Complete this quote and name the poem: “and now your ghost _____ toward me over George Square / till I see you, clear as _____, under the tree,”</td>
</tr>
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<td>31. Complete this quote and name the poem: “and now your ghost _____ toward me over George Square / till I see you, clear as _____, under the tree,”</td>
<td>31. Complete this quote and name the poem: “and now your ghost _____ toward me over George Square / till I see you, clear as _____, under the tree,”</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1.</td>
<td><strong>Enjambment</strong> is the continuation of a sentence without a pause beyond the end of a line, couplet, or stanza. Possible effects: freedom, chaos, lack of control, stream of consciousness, insanity, togetherness, following someone.</td>
</tr>
<tr>
<td>2.</td>
<td>A <strong>caesura</strong> is a pause near the middle of a line, usually created by a full stop. Possible effects: silence, separation, unnaturalness, disharmony.</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Metaphor</strong> is where something is compared to something that it is not.</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Simile</strong> is a comparison between two similar things using ‘like’ or ‘as’.</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Imagery</strong> is a strong picture, smell or sound that is created in the reader’s mind due to vivid and detailed description.</td>
</tr>
<tr>
<td>6.</td>
<td>A <strong>half rhyme</strong> is where two words look similar and read as though they should rhyme, but do not quite. E.g.</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Iambic pentameter</strong> is a line of verse with five metrical feet (beats), each consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable, e.g. <strong>Two households, both alike in dignity.</strong> Mimics natural patterns of speaking and can sound like a steady, natural heartbeat. There will be ten syllables overall.</td>
</tr>
<tr>
<td>8.</td>
<td><strong>Iambic tetrameter</strong> is very similar to Iambic Pentameter, but with four metrical feet instead of five. There will be eight syllables overall.</td>
</tr>
<tr>
<td>9.</td>
<td>A <strong>trochee</strong> is the opposite of an iamb. Where an iamb is an unstressed syllable followed by a stressed syllable, a trochee is the opposite: stressed syllable followed by an unstressed syllable. E.g. <strong>Double, double, toil and trouble. / Fire burn and cauldron bubble.</strong> (The witches in Macbeth – trochaic tetrameter)</td>
</tr>
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<td>10.</td>
<td><strong>Mother, Any Distance:</strong> “I reach / towards a hatch that opens on an <strong>endless sky</strong> / to fall or fly.”</td>
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<td>11.</td>
<td><strong>Eden Rock:</strong> “Her hair, the colour of <strong>wheat</strong>, takes on the light.”</td>
</tr>
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<td>12.</td>
<td><strong>Follower:</strong> “I was a nuisance, tripping, falling, / Yapping always.”</td>
</tr>
<tr>
<td>13.</td>
<td><strong>Eden Rock:</strong> “‘See where the stream-path is! / Crossing is not as hard as you might think.’ / I had not thought that it <strong>would be like this.”</strong></td>
</tr>
<tr>
<td>14.</td>
<td><strong>Porphyria’s Lover:</strong> “She shut the <strong>cold</strong> out and the storm,”</td>
</tr>
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<td>15.</td>
<td><strong>The Farmer’s Bride:</strong> “When us was wed she turned afraid / Of love and me and all things <strong>human”</strong>;</td>
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<td>16.</td>
<td><strong>Before You Were Mine:</strong> “I remember my hands in those high-heeled red shoes, relics”</td>
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<td><strong>Mother, Any Distance:</strong> “two floors below your fingertips still pinch / the last one-hundredth of an inch...”</td>
</tr>
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</table>
| 20. | **Eden Rock:** “The sky **whitens** as if lit by three **suns.”**

**Answers:**
|   | **Follower:** “His shoulders globed like a full sail strung”  
| 1 | **Eden Rock:** “They are waiting for me somewhere beyond Eden Rock”  
| 2 | **Follower:** “But today / It is my father who keeps stumbling / Behind me, and will not go away.”  
| 3 | **Porphyria’s Lover:** “at last I knew / Porphyria worshipped me; surprise / Made my heart swell,”  
| 4 | **Walking Away:** “It is eighteen years ago, almost to the day – / A sunny day with leaves just turning.”  
| 5 | **Porphyria’s Lover:** “I found / A thing to do, and all her hair / In one long yellow string I wound / Three times her little throat around, / And strangled her. No pain felt she; / I am quite sure she felt no pain.”  
| 6 | **Eden Rock:** “They beckon to me from the other bank. / I hear them call.”  
| 7 | **Follower:** “All I ever did was _____ / In his broad _____ round the farm.”  
| 8 | **The Farmer’s Bride:** “‘Not near, not near!’ / her eyes beseech / When one of us comes within reach.”  
| 9 | **Porphyria’s Lover:** “And all night long we have not stirred, / And yet God has not said a word!”  
| 10 | **Before You Were Mine:** “and now your ghost clatters toward me over George Square / till I see you, clear as scent, under the tree.”  
| 11 | **Before You Were Mine:** “That glamorous love lasts / where you sparkle and waltz and laugh / before you were mine.”  
| 12 | **Winter Swans:** “The clouds had given their all – / two days of rain and then a break / in which we walked.”  
| 13 | **Porphyria’s Lover:** “That moment she was mine, mine, fair, / Perfectly pure and good;”  
| 14 | **Porphyria’s Lover:** “She put my arm about her waist, And made her smooth white shoulder bare,”  
| 15 | **The Farmer’s Bride:** “Like the shut of a winter’s day / Her smile went out, and ‘twasn’t a woman – / More like a frightened fay.”  
| 16 | **Winter Swans:** “I noticed our hands, that had, somehow, / swum the distance between us / and folded, one over the other, like a pair of wings settling after flight.”  
| 17 | **Mother, Any Distance:** “climb / the ladder to the loft, to breaking point, where something has to give.”  
| 18 | **Porphyria’s Lover:** “I propped her head up as before, / Only, this time, my shoulder bore / Her head, which droops upon it still:”  
| 19 | **The Farmer’s Bride:** “The brown of her – her eyes, her hair, her hair!”  

## Yr 9 Science Questions

### Topic: Physics

1. Define the term: Power
2. Define the term: Watt (W)
3. Give the link between Power and Energy.
4. Define the term: Efficiency
5. Define the term: Weight
6. Define the term: Work
7. Define the term: Dissipation
8. Define the term: Energy resources
9. Define the term: Renewable energy resources
10. Define the term: Non-renewable energy resource
11. Define the term: Series circuit
12. Define the term: Parallel circuit
13. Describe Alternating current (AC)
14. Describe Direct current (DC)

### Topic: Chemistry

1. Describe how a positive ion is formed
2. Describe how a negative ion is formed
3. Define the term: Empirical Formula
4. Define the term: Electrostatic force
5. Define the term: Lattice
6. Define the term: Conductor
7. Define the term: Delocalised electron
8. Define the term: Molecule
9. Define the term: Polymer
10. Describe the structure of Diamond
11. Describe the structure of Graphite
12. Describe Graphene
13. Describe a Fullerene
14. Describe a Carbon nanotube
<table>
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<tr>
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<th>Topic: Chemistry</th>
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<tr>
<td>1. Power is the rate of energy transfer</td>
<td>1. A positive ion is the produced when an atom loses one or more electrons.</td>
</tr>
<tr>
<td>2. The watt is the unit for power.</td>
<td>2. A negative ion is produced when an atom gains one or more electrons.</td>
</tr>
<tr>
<td>3. One watt is one joule transferred in one second – or 1 J/s (1 joule per second).</td>
<td>3. The Empirical Formula is a chemical formula showing the ratio of elements in a compound</td>
</tr>
<tr>
<td>4. Efficiency is the measure of how much of the stored energy in a system is transferred usefully.</td>
<td>4. An Electrostatic force Attraction force due to charged particles</td>
</tr>
<tr>
<td>5. Weight is the caused by gravity acting on a mass and is measured in Newtons (N).</td>
<td>5. A Lattice is a regular repeated 3D arrangement.</td>
</tr>
<tr>
<td>6. Work is the transfer of energy.</td>
<td>6. A Conductor is a material which allows electricity and heat to pass through</td>
</tr>
<tr>
<td>7. Dissipation is when energy is spread out so it no longer useful.</td>
<td>7. A Delocalised electron is an electron that is spread over several atoms.</td>
</tr>
<tr>
<td>8. Energy resources are stores of energy on Earth that we can access and transfer to useful forms, such as electricity.</td>
<td>8. A Molecule is a group of atoms bonded together</td>
</tr>
<tr>
<td>9. A Renewable energy resources is an energy resources that are, or can’t be used up E.g. biofuels, geothermal, wind.</td>
<td>9. A Polymer is a long molecule consisting of many monomers linked together.</td>
</tr>
<tr>
<td>10. A Non-renewable energy resource is an energy resources that can be used up E.g. fossil fuels, nuclear fuel.</td>
<td>10. A Diamond is a structure of carbon where each atom bonds 4 times.</td>
</tr>
<tr>
<td>11. A series circuit is one where all components are connected in a single loop.</td>
<td>11. A Graphite is a structure of carbon constructed of layers of hexagons where each atom bonds 3 times</td>
</tr>
<tr>
<td>12. A parallel circuit is one with separate branches.</td>
<td>12. A Graphene is a single layer of graphite</td>
</tr>
<tr>
<td>13. Alternating Current has a constantly changing potential difference with the current forward and backward repeatedly.</td>
<td>13. A Fullerene is a molecule of carbon atoms with hollow shape.</td>
</tr>
<tr>
<td>14. Direct Current has a constant potential difference with the current flowing in one direction.</td>
<td>14. A Carbon nanotube is a cylindrical fullerene</td>
</tr>
</tbody>
</table>
# Biology: Questions

<table>
<thead>
<tr>
<th>Organising animals and plants</th>
<th>Cell structure and transport</th>
</tr>
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<tbody>
<tr>
<td>1. What are the four components of blood and what do they do?</td>
<td>1. What is the difference between plant cells and animal cells?</td>
</tr>
<tr>
<td>2. What are the three vessels in the body and what is their role?</td>
<td>2. What is the difference between prokaryotes and eukaryotes?</td>
</tr>
<tr>
<td>3. What is the function of valves in the heart and veins?</td>
<td>3. Compare light and electron microscopes</td>
</tr>
<tr>
<td>5. What are the treatments for coronary heart disease?</td>
<td>5. Define osmosis</td>
</tr>
<tr>
<td>6. How are the lungs adapted for efficient gas exchange by diffusion?</td>
<td>6. Define active transport</td>
</tr>
<tr>
<td>7. What is the difference between the xylem and the phloem vessels in the stem of the plant?</td>
<td>7. What happens to an plant cell in a hypertonic solution?</td>
</tr>
<tr>
<td>8. Describe the flow of the water through the plant by transpiration.</td>
<td>8. What are the three adaptations of the lungs, gills and small intestine that maximise the rate of diffusion?</td>
</tr>
<tr>
<td>9. What are the factors that affect transpiration?</td>
<td>9. What is the food test for glucose?</td>
</tr>
<tr>
<td>10. What is the food test for starch?</td>
<td></td>
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<th>Cell cycle and digestion</th>
<th>Respiration</th>
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<td>9. Why do cells divide by mitosis?</td>
<td>1. What is the word equation from aerobic respiration?</td>
</tr>
<tr>
<td>10. Describe the stages of the cell cycle</td>
<td>2. What is the word equation from anaerobic respiration in animals?</td>
</tr>
<tr>
<td>11. What is differentiation?</td>
<td>3. What is the word equation for anaerobic respiration in yeast? (fermentation)</td>
</tr>
<tr>
<td>12. What are the differences between adult and embryonic stem cells?</td>
<td>4. What is the energy from respiration used to do?</td>
</tr>
<tr>
<td>13. What is an enzyme?</td>
<td>5. What is oxygen debt?</td>
</tr>
<tr>
<td>14. Describe and explain what happens to enzyme activity as the temperature increases</td>
<td>6. What is the anaerobic respiration of yeast used to make?</td>
</tr>
<tr>
<td>15. Where can you find carbohydrase and what is its function?</td>
<td>7. What is metabolism?</td>
</tr>
<tr>
<td>16. What is the difference between proteases found in the stomach and proteases found in the small intestine.</td>
<td>8. What happens to your body during exercise to increase the rate of respiration?</td>
</tr>
<tr>
<td>17. State the formula for calculating magnification</td>
<td>9. Respiration is an exothermic reaction-what does this mean?</td>
</tr>
<tr>
<td>18. Covert 100 mm into nm</td>
<td>10. What is the role of the following organelles? Mitochondria Ribosome Nucleus Cytoplasm Chloroplast Cell membrane Cell membrane Cell Wall</td>
</tr>
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</table>
### Biology: Answers

#### Organising animals and plants

<table>
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<tr>
<th>1. Plasma</th>
<th>yellow liquid component of blood carries substances like carbon dioxide and the cells of the blood around the body</th>
</tr>
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<tr>
<td><strong>Red blood cells</strong></td>
<td>Carry oxygen around the body</td>
</tr>
<tr>
<td><strong>Platelets</strong></td>
<td>fragments of cells which aid in blood clotting</td>
</tr>
<tr>
<td><strong>White blood cells</strong></td>
<td>role of in immune response</td>
</tr>
<tr>
<td>2. <strong>Arteries</strong></td>
<td>thick and elastic-carry high pressure oxygenated blood from the heart around the body</td>
</tr>
<tr>
<td><strong>Veins</strong></td>
<td>Thinner, contain valves-carry low pressure deoxygenated blood back from the tissues to the heart</td>
</tr>
<tr>
<td><strong>Capillaries</strong></td>
<td>one cell thick- found in the tissues- allow the diffusion of oxygen out of the blood and carbon dioxide into the blood</td>
</tr>
<tr>
<td>3. Prevent the backflow of blood</td>
<td></td>
</tr>
<tr>
<td>4. When high blood cholesterol causes the build up of fatty deposits in the arteries of the heart which causes <strong>abnormal blood flow</strong> to the tissues of the heart which means less oxygen gets delivered so less energy is released through <strong>aerobic respiration</strong>. This can lead to a <strong>heart attack</strong>.</td>
<td></td>
</tr>
<tr>
<td>5. Treatments with <strong>statins</strong>- drugs that lower blood cholesterol levels</td>
<td></td>
</tr>
<tr>
<td><strong>Vascular stents</strong></td>
<td>metal tubes that are placed into arteries to keep narrowed or blocked vessels open.</td>
</tr>
<tr>
<td>6. The lungs have intercostal muscles and a diagram which contract and relax to bring move gases in and out of the lungs. The alveoli are <strong>one cell thick</strong> to provide a <strong>short diffusion distance</strong> and round to provide a <strong>large surface area</strong> for exchange by diffusion.</td>
<td></td>
</tr>
<tr>
<td>A dense network of capillaries along with good ventilation allow for a steep concentration gradient to be maintained which maximises the rate of gas exchange by diffusion.</td>
<td></td>
</tr>
<tr>
<td>7. <strong>Xylem</strong>- Dead cells supported by a lignin spiral- carries water and dissolved minerals up the plant only</td>
<td></td>
</tr>
<tr>
<td><strong>Phloem</strong>- Living cells containing sieve plates- transport sugars <strong>up and down</strong> the plant from where they are made in the leaves through photosynthesis.</td>
<td></td>
</tr>
</tbody>
</table>

#### Cell structure and transport

| 1. Animal cells and plant cells have a cell membrane, cytoplasm, nucleus, ribosomes and mitochondria. Plant cells also have a cell wall, chloroplasts and vacuoles that animal cells **do not** have. |
| 2. Prokaryotes are 0.1µm - 5.0 µm in diameter, have free DNA not in a nucleus. Their cell walls do not contain cellulose, contain plasmid DNA and bacteria are an example of this type of organism. |
| Eukaryotes are plant and animal cells they are 10-100 µm in diameter, have their DNA in a nucleus. |
| 3. Light microscopes are cheaper, able to observe living specimens and colour. Electron microscopes are much more expensive to buy and run and can only see dead specimens in monochrome. |
| Electron microscopes have a much higher magnification and resolution than light microscopes. |
| 4. The random passive movement of particles from an area of high concentration to an area of low concentration until an equal concentration is achieved |
| 5. The movement of water particles from an area of low concentration of solutes to a high concentration of solutes across a semi-permeable membrane until an equal concentration is achieved |
| 6. The movement of molecules or ions from an area of low concentration to an area of high concentration using energy from respiration |
| 7. In a hypertonic solution water moves by osmosis from an area of low concentration of solutes (inside the cell) to an area of high concentration of solutes (outside the cell) across a semi-permeable membrane so water leaves the cell causing the cell membrane to shrink away from the cell wall (plasmolysed) |
| 8. In order to increase the rate of diffusion gills, lungs and the small intestine have a large surface area, thin walls to create a short diffusion distance, widespread vascular supply (blood vessels) which maintain a steep concentration gradient. |
| 9. Add Benedict’s solution and heat in a
8. Water enters the roots by osmosis and moves up the xylem due to the pull upwards of the transpiration stream. The water then enters the veins of the leaves and goes into the spongy mesophyll of the leaf. Water vapour then evaporates through the stomata into the atmosphere. The movement of water out the plant through the stomata is controlled by guard cells.

9. Higher temperature, higher wind speed, higher light intensity and higher temperature will increase the rate of transpiration. High humidity (amount of moisture in the air) will decrease the rate of transpiration.

10. Add iodine to the sample, if the iodine turns from red/orange to blue/black then it is positive for starch. If the sample turns from blue to brick red this is positive for glucose.

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<th>Cell cycle and digestion</th>
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<tbody>
<tr>
<td>1. Cells divide by mitosis to repair injuries, replace dead tissues, grow new tissues and in asexual reproduction (cloning)</td>
<td>1. Glucose + oxygen → Carbon dioxide + water + (energy)</td>
</tr>
<tr>
<td>2. In the cell cycle there are three main stages</td>
<td>2. Glucose → Lactic acid + (energy)</td>
</tr>
<tr>
<td>1) The cell increases in mass, the subcellular structures are copied and DNA is replicated (this is the longest stage in the cell cycle)</td>
<td>3. Glucose → Ethanol + carbon dioxide + (energy)</td>
</tr>
<tr>
<td>2) Mitosis occurs- the nucleus divides to for 2 nuclei (Each with a full set of DNA)</td>
<td>4. Build up and break down molecules Make muscles contract</td>
</tr>
<tr>
<td>3) Cytokinesis occurs- The cytoplasm and the cell membranes divide to two genetically identical daughter cells.</td>
<td>Maintain the internal temperature</td>
</tr>
<tr>
<td>3. The process by which a stem cell changes to become specialised towards a certain function e.g. stem cell into red blood cell</td>
<td>To move ions by active transport</td>
</tr>
<tr>
<td>4. Embryonic stem cells (come from human embryos)</td>
<td>5. Oxygen debt is the amount of oxygen needed to break down the lactic acid that has built up as a result of anaerobic respiration.</td>
</tr>
<tr>
<td>☺ Can become any type of cell pluripotent</td>
<td>6. Yeast is made to anaerobically respire to produce ethanol (this is what makes beer and wine alcoholic) and carbon dioxide (this is what makes bread rise)</td>
</tr>
<tr>
<td>☺ Can be used to treat any disease</td>
<td>7. Metabolism is the sum of all the chemical reactions in the body</td>
</tr>
<tr>
<td>☺ Divide quickly (Every 30 mins) so cost less money to grow</td>
<td>8. When you exercise:</td>
</tr>
<tr>
<td>☺ Some people have ethical objections with their use</td>
<td>• Your heart rate increases</td>
</tr>
<tr>
<td>☺ Because they divide so quickly some people think they may lead to cancer</td>
<td>• Your breathing rate and volume increases</td>
</tr>
<tr>
<td>☺ Still an experimental procedure (Not very reliable)</td>
<td>• This increases the amount of oxygen delivered to the tissues by the blood and the amount of carbon dioxide removed</td>
</tr>
<tr>
<td>Adult Stem cells (come from adult tissues like bone marrow)</td>
<td>• This means that more energy is released through respiration for exercise</td>
</tr>
<tr>
<td>☺ No ethical objections because people can consent to their use</td>
<td>9. Respiration is an exothermic reaction because it releases heat energy into the environment</td>
</tr>
<tr>
<td>☺ Can only become a few type of cell (tissue specific)</td>
<td>10. Mitochondria- Site of aerobic respiration where energy is released.</td>
</tr>
<tr>
<td>☺ Tried and proven (More likely to work)</td>
<td>Ribosome- Uses energy released to synthesise proteins- found in all cells</td>
</tr>
<tr>
<td></td>
<td>Nucleus- Where DNA is stored controls</td>
</tr>
</tbody>
</table>
Could pass viruses to the patient
Divide slower (every 4 hours)

5. An enzyme is a biological catalyst, a protein that speeds up a chemical reaction but remains unchanged at the end.

6. As the temperature increases, the rate of enzyme activity increases because the particles in the reaction (enzymes and substrates) have more kinetic energy so move more and collide more often leading to more frequent successful collisions. This continues to increase up to the optimum temperature which is when the enzyme is most active and rate of reaction is highest. Above the optimum temperature the temperature is too high for the enzyme as so the enzyme denatures (its active site changes shape to no longer fit the substrate) and the enzyme becomes non-functional.

7. Carbohydrase is a digestive enzyme which breaks down carbohydrates into simple sugars (glucose). It is found in the salivary glands and small intestine.

8. The optimum pH for proteases in the stomach is lower than those in small intestine because the acidic conditions in the stomach (in order to kill bacteria that are on our food).

9. Magnification = Image size / Actual size

10. Convert 100 mm into nm
100 x 1 000 000 = 100 000 000 nm

11. Convert 56µm into cm
56 ÷ 10 000 = 0.0056 cm

12. Proteins are made from amino acids and Hydrochloric acid is found in the stomach in order to kill bacteria on food

activities of the cell

Cytoplasm- “jelly” inside the cell, where chemical reactions occur including anaerobic respiration- found in all cells
Chloroplast- Organelle found in plant cells, where photosynthesis occurs.
Cell membrane- “skin” of the cell controls what comes in and out – found in all cells
Cell Wall- strengthens the cell, found in plant cells (Made of cellulose) and bacteria cells (Not made of cellulose)
# Geography Self Quiz

## Topic 1: Tropical Storms

1. In what region do tropical storms form?
2. On what latitude do most tropical storms form?
3. What is the minimum sea surface temperature for a tropical storm to form?
4. What is the name for the centre of a tropical storm?
5. Identify three types of weather you would experience in a tropical storm?
6. Name the three types of cells (global atmospheric circulation model)
7. Why do tropical storms not occur near the UK?
8. When do most tropical storms occur? Why?
9. What is the ‘Coriolis effect?’
10. In tropical regions, the intense heat makes the air unstable causing air to _____ rapidly.

## Topic 2: UK Extreme Weather (Boscastle Floods)

1. When was the hottest summer ever recorded in the UK?
2. Identify four examples of UK weather hazards.
3. Describe the climate of the UK
4. Why does the UK experience changeable weather and sometimes extreme weather?
5. When was the Boscastle Floods?
6. Identify two causes of the Boscastle floods.
7. Identify three primary effects of the Boscastle floods.
8. Identify three secondary effects of the Boscastle floods
9. Identify one immediate and one long-term response to the Boscastle Floods.
10. What is happening to the pattern of extreme weather in the UK?

## Topic 3: Typhoon Haiyan

1. What areas were affected by Typhoon Haiyan?
2. When was Typhoon Haiyan?
3. What category storm was Typhoon Haiyan? On what scale?
4. Identify two features of Typhoon Haiyan.
5. Identify three primary effects of Typhoon Haiyan
6. Identify three secondary effects Typhoon Haiyan
7. Identify two immediate responses to Typhoon Haiyan
8. Identify two long-term responses to Typhoon Haiyan.
9. Did Typhoon Haiyan affect LICs or HICs?
10. How many deaths were caused by Typhoon Haiyan?

## Topic 4: Hurricane Katrina

1. What areas were affected by Hurricane Katrina?
2. When was Hurricane Katrina?
3. What category storm was Hurricane Katrina? On what scale?
4. Identify two features of Hurricane Katrina.
5. Identify three primary effects of Hurricane Katrina
6. Identify three secondary effects Hurricane Katrina.
7. Identify two immediate responses to Hurricane Katrina
8. Identify two long-term responses to Hurricane Katrina.
9. Did Hurricane Katrina affect LICs or HICs?
10. How many deaths were caused by Hurricane Katrina?
### Geography Self Quiz Answers

#### Topic 1: Tropical Storms
1. The Tropics
2. 5-15° North and South of equator
3. 27°C
4. Eye
5. Heavy rain, thunder, lightening
6. Ferrel, Polar, Hadley cell
7. The sea surface temperature is too cold as too far from tropics.
8. Late summer/early Autumn as the sea is at its warmest point
10. In tropical regions, the intense heat makes the air unstable causing air to rise rapidly.

#### Topic 2: UK Extreme Weather (Boscastle Floods)
1. Summer 2018 – temp reached 35.3°C in some areas.
2. Thunderstorms, prolonged rainfall, heavy snow, extreme cold, strong winds, extreme heat (heatwaves)
3. Temperate climate zone - Britain gets cool, wet winters and warm, wet summers (there is variation depending on where in UK you are)
4. The UK is a meeting point for various different air masses, bringing with them different weather conditions for example; storms arrive from the Atlantic on the west, hot and sunny weather comes from the south, and artic air from the north can bring heavy snow, bitterly cold winds and cold conditions.
5. August 2004
6. Intense heavy rain for 8 hours, remnants of Hurricane Alex, Boscastle near confluence of two rivers which burst their banks
7. 75 cars, 5 caravans, 6 buildings and several boats being washed into the sea, a large loss of possessions, approximately 100 homes and businesses were destroyed, 150 people rescued from clinging to trees/tall buildings.
8. ‘Witchcraft Museum’ was destroyed, tourism industry affected, large £ cost of repairs, many hotels forced to close due to the decrease in tourism.
9. Immediate: people being relocated to safe areas and being housed in hotels that were not affected, free of charge. Long-term: £800,000 flood defence scheme developed.
10. Increasing number of extreme weather events, more intense. E.g. 2015/16 – devastating floods in Cumbria, 2018 – Beast from the East, 2018 – hottest summer on record.

#### Topic 3: Typhoon Haiyan
1. Province of Leyte, city of Tacloban in The Philippines
2. November 2013
3. Category 5 – Saffir-Simpson Scale
4. Waves as high as 15m, winds of 170mph
5. 6300 people killed, 600,000 people displaced, widespread flooding
6. 14 million people affected, power supplies cut off for a month, landslides, outbreaks of disease
7. 1200 evacuation centres set up to help the homeless, UK government sent temporary shelter kits, field hospitals set up
8. Cash for Work programme – local people could get paid to help clear debris and rebuild the city, Oxfam replaced fishing boats for local people
9. LIC
10. 6300 people

#### Topic 4: Hurricane Katrina
1. New Orleans, Louisiana, USA
2. August 2005
3. Category 5 – Saffir-Simpson Scale
4. Most expensive natural disasters in the history of the USA, 90% of city flooded, 175 mph wind speeds.
5. 1,300 people died, 500,000 homeless, 18 schools were destroyed
6. Looting and violence, spread of disease, 230,000 jobs lost due to businesses destroyed
7. Local people took shelter in the Superdome stadium, Local people took shelter in the Superdome stadium, UK government sent food aid
8. 220 miles of floodwalls and levees were strengthen or replaced, to lower the risk of severe flooding in the future.
US Government issued $16.7 billion dollars to rebuilding effort (house/infrastructure)
9. HIC – USA
10. 1300 approximately
# Religious Studies: Self Quiz

## Questions:

| 1. What is a prophet? | 1. What is the name of the holy book in Islam? |
| 2. How many prophets are mentioned in the Qur’an? | 2. Over how many years was the Qur’an the Qur’an revealed to Prophet Muhammed? |
| 3. Who was prophet Adam? | 3. How was the Qur’an first spread? |
| 4. What did prophet Ibrahim reject? | 4. How did the Qur’an become written down? |
| 5. Why is Prophet Muhammed important? | 5. What is the name for a chapter in the Qur’an? |
| 6. Why is Prophet Muhammed referred to as the ‘seal of the prophets’? | 6. How many Surah’s and verses are there in the Qur’an? |
| 7. What happened on the Night of Power? | 7. Why is the Qur’an the most important holy book in Islam? |
| 8. What was the name of the angel who appeared to Prophet Muhammed? |  |
| 9. What was revealed to Prophet Muhammed? |  |
| 10. What did the revelations from God tell humans? |  |

## Questions

| 1. What is the Arabic word for God? | 1. What are the names of the two main groups in Islam? |
| 2. What does the term monotheistic mean? | 2. Why did Islam split into two groups? |
| 3. How can Muslims learn about Allah’s nature? | 3. What is a Caliph? |
| 4. What does Tawhid mean? | 4. Who do Sunnis Muslims believe should have been the successor? |
| 5. What does transcendent mean? | 5. Which group of Muslims make up the majority? |
| 6. What does Shirk mean? | 6. Who do Shi’a Muslims believe should have been the successor? |
| 7. Why do Muslims believe Allah wants them to know what he is like? | 7. What is meant by the term Ummah? |
| 8. Why might some people argue that you cannot know what Allah is like? | 8. What does Justice mean? |
| 10. Where does the word Islam originate from? | 10. Where does the word Islam originate from? |
**Religious Studies: Self Quiz answers**

<table>
<thead>
<tr>
<th>Answers:</th>
<th>Answers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A Prophet is believed to be messenger sent by God.</td>
<td>1. The name of the Holy Book in Islam is the Qur’an.</td>
</tr>
<tr>
<td>2. There are 25 Prophets mentioned by name in the Qur’an.</td>
<td>2. The Qur’an was revealed to Prophet Muhammed over a 23 year period of his life.</td>
</tr>
<tr>
<td>3. Prophet Adam was the first man and prophet.</td>
<td>3. The Qur’an was first spread by word of mouth.</td>
</tr>
<tr>
<td>4. Prophet Ibrahim rejected polytheism (believing in more than one God).</td>
<td>4. The Qur’an became written down when Muhammed dictated surahs to his companions so they could write them down.</td>
</tr>
<tr>
<td>5. Prophet Muhammed is an important Prophet because he was he final Prophet.</td>
<td>5. A chapter in the Qur’an is known as a surah.</td>
</tr>
<tr>
<td>6. Prophet Muhammed is referred to as ‘the seal of the prophets’ because he was the final and most important prophet.</td>
<td>6. There are 114 surahs in the Qur’an which have been split into 6000 verses.</td>
</tr>
<tr>
<td>7. On the Night of Power that Muhammed received the first revelation from Allah.</td>
<td>7. The Qur’an is the most important book in Islam because it is the direct and final word of God.</td>
</tr>
<tr>
<td>8. The angel who appeared to Prophet Muhammed was called Jibril.</td>
<td></td>
</tr>
<tr>
<td>9. The Qur’an was revealed to Prophet Muhammed.</td>
<td></td>
</tr>
<tr>
<td>10. The revelations from God told humans how to live.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Answers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Arabic word for God is Allah.</td>
</tr>
<tr>
<td>2. The term monotheistic means believing in one God.</td>
</tr>
<tr>
<td>3. Muslims believe they can learn about Allah’s nature from the Qur’an.</td>
</tr>
<tr>
<td>4. Tawhid means the oneness of God.</td>
</tr>
<tr>
<td>5. Shirk is sin of associating other things with God or worshipping anything than God, which is the worst sin in Islam.</td>
</tr>
<tr>
<td>6. Transcendent means beyond human understanding.</td>
</tr>
<tr>
<td>7. Muslims believe that God is merciful and compassionate so wants humans to understand what he is like.</td>
</tr>
<tr>
<td>8. Some Muslims would argue that nobody can understand Allah fully because known as seen Allah.</td>
</tr>
<tr>
<td>9. Justice means rewarding the good and punishing the bad, and making sure what is right is what happens in society.</td>
</tr>
<tr>
<td>10. The word Islam originates from the word ‘aslama’, which means to surrender or submit.</td>
</tr>
</tbody>
</table>
## History Self Quiz

### Questions:

| 1. Over what years did WWII occur? | 1. When did Nigeria achieve independence? |
| 2. Which countries were members of the Grand Alliance? | 2. What is decolonisation? |
| 3. Which two Japanese cities were attacked with atomic bombs in 1945? | 3. Who delivered the ‘Winds of Change’ speech in 1960? |
| 5. How much more destructive was the H-bomb compared to the A-bomb? | 5. Who did the USA support during the Vietnam War? |
| 7. Who was Nikita Khrushchev? | 7. What was the purpose of the SALT treaties? |
| 8. What were the '13 days'? | 8. How many nations signed the Helsinki Accords? |
| 9. How was the Cuban Missile Crisis resolved? | 9. How many nuclear weapons did the USA and USSR possess in 1978? |
| 10. What was Sputnik? | 10. When did the USSR invade Afghanistan? |

| 1. When did Nigeria achieve independence? | 1. What is a superpower? |
| 2. What is decolonisation? | 2. What is terrorism? |
| 3. Who delivered the ‘Winds of Change’ speech in 1960? | 3. Who was responsible for 911? |
| 5. Who did the USA support during the Vietnam War? | 5. How long did the NATO-led invasion of Afghanistan last for? |
| 6. What is the policy of glasnost? | 6. Who is the current leader of Russia? |
| 8. When did the Berlin Wall fall? | 8. Which countries with nuclear weapons have not signed the CTBT? |
| 9. When was Germany reunited? | 9. Which country supports the current Syrian President, Bashar al-Assad? |
| 10. What happened to the USSR in 1991? | 10. How many nuclear weapons do the USA and USSR have collectively today? |
## History Self Quiz answers

### Answers:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1939-1945</td>
</tr>
<tr>
<td>2.</td>
<td>Britain, the USA, and the USSR</td>
</tr>
<tr>
<td>3.</td>
<td>Hiroshima and Nagasaki</td>
</tr>
<tr>
<td>4.</td>
<td>Where civilians as well the military become targets of warfare, and all of a society’s resources are directed towards the war effort.</td>
</tr>
<tr>
<td>5.</td>
<td>1,000 times more powerful.</td>
</tr>
<tr>
<td>6.</td>
<td>Inter-Continental Ballistic Missile</td>
</tr>
<tr>
<td>7.</td>
<td>Nikita Khrushchev was the leader of the USSR after 1956.</td>
</tr>
<tr>
<td>8.</td>
<td>The 13 days were the period of highest tension during the Cuban Missile Crisis, before tensions had been resolved.</td>
</tr>
<tr>
<td>9.</td>
<td>The crisis was resolved by a mutual agreement to remove American missiles from Turkey, and Soviet missiles from Cuba.</td>
</tr>
<tr>
<td>10.</td>
<td>Sputnik was a Soviet satellite, the first launched into space.</td>
</tr>
</tbody>
</table>

### Answers:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Reagan described the USSR as ‘an evil empire’</td>
</tr>
<tr>
<td>2.</td>
<td>1985</td>
</tr>
<tr>
<td>3.</td>
<td>The Reagan Doctrine offered US support for anti-communist governments and anti-communist groups trying to overthrow communist governments.</td>
</tr>
<tr>
<td>4.</td>
<td>The USSR boycotted the 1980 Olympics to protest the Soviet invasion of Afghanistan.</td>
</tr>
<tr>
<td>5.</td>
<td>SDI was a system for space weaponry designed by the USA.</td>
</tr>
<tr>
<td>7.</td>
<td>The USA and USSR signed the INF Treaty to abolish all land-based missiles with a range of 500-5,500km.</td>
</tr>
<tr>
<td>8.</td>
<td>1989</td>
</tr>
<tr>
<td>9.</td>
<td>1990</td>
</tr>
<tr>
<td>10.</td>
<td>The Soviet Union was formally dissolved.</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1960</td>
</tr>
<tr>
<td>2.</td>
<td>Decolonisation is the removal of the methods of foreign power and control over another country.</td>
</tr>
<tr>
<td>3.</td>
<td>Harold Macmillan, British Prime Minister</td>
</tr>
<tr>
<td>4.</td>
<td>Civil War</td>
</tr>
<tr>
<td>5.</td>
<td>The USA supported South Vietnam.</td>
</tr>
<tr>
<td>6.</td>
<td>Domino Theory</td>
</tr>
<tr>
<td>7.</td>
<td>The SALT treaties were designed to limit the number of strategic weapons possessed by the USA and USSR.</td>
</tr>
<tr>
<td>8.</td>
<td>33 nations signed the Helsinki Accords.</td>
</tr>
<tr>
<td>9.</td>
<td>25,000 each.</td>
</tr>
<tr>
<td>10.</td>
<td>1979</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A superpower is a country with dominant power, especially in terms of political, economic and military influence or control.</td>
</tr>
<tr>
<td>2.</td>
<td>The unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims.</td>
</tr>
<tr>
<td>3.</td>
<td>Al-Qaeda</td>
</tr>
<tr>
<td>4.</td>
<td>The name for a US-led, international military campaign against terrorism.</td>
</tr>
<tr>
<td>5.</td>
<td>The conflict began in 2001 but is still ongoing</td>
</tr>
<tr>
<td>6.</td>
<td>Vladimir Putin</td>
</tr>
<tr>
<td>7.</td>
<td>USA, Russia, China, Britain, France, Israel, India, Pakistan, North Korea</td>
</tr>
<tr>
<td>8.</td>
<td>Israel, India, Pakistan, North Korea</td>
</tr>
<tr>
<td>9.</td>
<td>Russia</td>
</tr>
<tr>
<td>10.</td>
<td>Roughly 9,000</td>
</tr>
</tbody>
</table>
## French Self Quiz

### Questions: Self, Family & Friends

<table>
<thead>
<tr>
<th>1. Dans ma famille il y a…</th>
<th>1. J’ai contacté un copain</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Huit personnes</td>
<td>2. J’ai écouté de la musique</td>
</tr>
<tr>
<td>4. Il est amusant mais bavard</td>
<td>4. Il a mangé un hamburger</td>
</tr>
<tr>
<td>5. Elle est contente et intelligente</td>
<td>5. Elle a visité le musée</td>
</tr>
<tr>
<td>6. J’ai les cheveux roux et les yeux bruns</td>
<td>6. Il est allé à la plage hier</td>
</tr>
<tr>
<td>7. Aujourd’hui je vais retrouver mes amis en ville</td>
<td>7. Elle est allée en ville avec ses parents</td>
</tr>
<tr>
<td>8. Souvent je traîne avec mes copains</td>
<td>8. Nous sommes allées au cinéma hier soir</td>
</tr>
<tr>
<td>9. Je m’entends bien avec mes parents</td>
<td>9. Il y a deux jours</td>
</tr>
<tr>
<td>10. Je me chamaillle avec ma sœur car elle est impolie</td>
<td>10. Le weekend dernier</td>
</tr>
<tr>
<td>11. Pour moi un bon ami est cool, généreux et optimiste</td>
<td></td>
</tr>
</tbody>
</table>

### Questions: Free Time and celebrations

| 1. normalement je joue au hockey | 1. Pour le déjeuner je mange du poulet, des légumes et un yaourt |
| 2. ma sœur aime jouer au volley | 2. Le soir, je mange un hamburger frites |
| 3. tous les samedis je joue aux cartes avec mes grand-parents | 3. Normalement comme casse-croûte je prends des chips |
| 5. je fais souvent de la boxe au gymnase | 5. Je bois un coca |
| 6. hier j’ai fait de l’escalade | 6. Pour mon anniversaire on va manger des biftecks et des saucisses |
| 7. le weekend dernier j’ai fait de la danse. | 7. Pour fêter le 14 juillet on va regarder le feu d’artifice |
| 8. je fais du footing depuis deux ans. | 8. Pour le mariage de mon frère il y avait beaucoup d’invités |
| 9. c’est bon pour le corps et le mental. | 9. Pour mon anniv j’ai reçu beaucoup de cadeaux |
| 10. Quand je fais ça je respire | 10. Ma sœur a eu son premier bébé |
### French Self Quiz Answers

#### Answers: self, family & friends

- In my family there is...
  - Eight people
  - *My (m)/ my (f)/ my (plr)*
  - He is funny but chatty
  - She is happy and intelligent
  - I have red hair and brown eyes
  - Today I am going to meet my friends in town
  - Often I hang out with my friends
  - I get on well with my parents
  - I bicker with my sister because she is impolite
  - For me, a good friend is cool, generous and optimistic

- I contacted a friend
  - I listened to music
  - I bought some clothes in town
  - He ate a hamburger
  - She visited the museum
  - He went to the beach yesterday
  - She went into town with her parents
  - We went to the cinema yesterday evening
  - Two days ago
  - Last weekend

#### Answers: free time and celebrations

- Normally I play hockey
  - My sister likes to play volleyball
  - Every Saturday I play cards with my grandparents
  - Also I play the drums at school
  - I often do boxing at the gym
  - Yesterday I did rock-climbing
  - Last weekend I did dance
  - I have been doing jogging for two years
  - It’s good for the body and the mind
  - When I do it, I breath

- For lunch I eat chicken, some vegetables and a yoghurt.
  - In the evening I eat a hamburger and fries
  - Normally for a snack I have some crisps
  - I drink orange juice
  - I drink coca-cola
  - For my birthday we are going to eat some steaks and some sausages
  - To celebrate the 14th of July we are going to watch the fireworks
  - For my brothers’ wedding there was lots of guests
  - For my birthday I received lots of presents
  - My sister had her first baby
### Study Point 1 – Data Types

1. Variables are normally declared at the start or the end of a program
2. Python can assume the data type of a variable e.g., `a = 23` will be stored as an integer (TRUE or FALSE?)
3. What is an integer?
4. What is a real/float?
5. What is a char/character?
6. What is a string?
7. What is a Boolean?
8. The command to convert a data type to a string is `'str'`, what’s the command to convert to an integer?
9. What’s the command to convert to a float?
10. What is the processing of changing data types called?

### Study Point 2 – IF Statements

1. What do programs normally consist of?
2. What is a decision also known as?
3. What symbol is used to show a decision in a flowchart?
4. Why are IF statements useful in programming?
5. View the flowchart in study point 2, what happens if the input is 80?
6. View the flowchart in study point 2, what happens if the input is 70?
7. View the flowchart in study point 2, what happens if the input is 50?
8. View the flowchart in study point 2, what happens if the input is “hello”?

### Study Point 3 – Network Types

1. What are the main three types of networks?
2. What is a LAN?
3. What is a WAN?
4. What is a PAN?
5. State an example when a LAN would be used?
6. State an example when a WAN would be used?
7. State an example when a PAN would be used?
8. What is the biggest WAN in the world?

### Study Point 4 – Network Topologies

1. Describe the bus topology
2. Describe the star topology
3. State an advantage of using the STAR topology
4. State a disadvantage of using STAR topology
5. State an advantage of using the BUS topology
6. State a disadvantage of using BUS topology
7. Which topology is cheaper to maintain and install?
8. Which topology offers better security and bandwidth (speed)?
<table>
<thead>
<tr>
<th></th>
<th>Study Point 5 – Pseudocode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How are most programs developed?</td>
</tr>
<tr>
<td>2</td>
<td>Give two examples of programming languages</td>
</tr>
<tr>
<td>3</td>
<td>Is Pseudocode a programming language?</td>
</tr>
<tr>
<td>4</td>
<td>What is pseudocode?</td>
</tr>
<tr>
<td>5</td>
<td>List the specific words that are used in pseudocode</td>
</tr>
<tr>
<td>6</td>
<td>What does the term ‘INPUT’ mean?</td>
</tr>
<tr>
<td>7</td>
<td>What does the term ‘OUTPUT’ mean?</td>
</tr>
<tr>
<td>8</td>
<td>What does the term ‘WHILE’ mean?</td>
</tr>
<tr>
<td>9</td>
<td>What does the term ‘FOR’ mean?</td>
</tr>
<tr>
<td>10</td>
<td>What does ‘FOR-THEN-ELSE’ mean?</td>
</tr>
</tbody>
</table>
## Computer Science Self Quiz Quiz answers

<table>
<thead>
<tr>
<th>Study Point 1 – Data Types</th>
<th>Study Point 2 – IF Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The start</td>
<td>1. instructions that are carried out one after another</td>
</tr>
<tr>
<td>2. TRUE</td>
<td>2. Selection</td>
</tr>
<tr>
<td>3. A whole number</td>
<td>3. A diamond</td>
</tr>
<tr>
<td>4. A number with a fractional or decimal</td>
<td>4. You can allow for more than one path (option) that can be followed in the program</td>
</tr>
<tr>
<td>5. A single character</td>
<td>5. The program will display ‘you are aged to perfection!’</td>
</tr>
<tr>
<td>6. Zero or more characters</td>
<td>6. The program will display ‘you are aged to perfection!’</td>
</tr>
<tr>
<td>7. A variable that has the value True or False</td>
<td>7. The program will stop</td>
</tr>
<tr>
<td>8. int()</td>
<td>8. The program will stop</td>
</tr>
<tr>
<td>9. float()</td>
<td></td>
</tr>
<tr>
<td>10. data type casting</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study Point 3 – Network Types</th>
<th>Study Point 4 – Network Topologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LAN, WAN and PAN</td>
<td>1. Computer nodes connected to a main cable with terminators on each side</td>
</tr>
<tr>
<td>2. A local area network covering a small geographical area</td>
<td>2. Nodes connected to a central switch/hub with their own dedicated connection</td>
</tr>
<tr>
<td>3. A wide area network covering a wide geographical area</td>
<td>3. Fast performance, easy to install and expand, failure in the minor cables will only affect one node</td>
</tr>
<tr>
<td>4. A personal area network which is centred around a person</td>
<td>4. More cables make it more expensive, hub/switch increases the cost</td>
</tr>
<tr>
<td>5. A building/site, a school, college of hospital</td>
<td>5. Simplest and cheapest to install and extend, failure of one node does not affect the rest of the bus network</td>
</tr>
<tr>
<td>6. A company with offices in different places around the country, a school network of schools in different cities, the internet</td>
<td>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</td>
</tr>
<tr>
<td>7. Laptops, smart phones, tablets, earphones and speakers</td>
<td>7. Bus topology</td>
</tr>
<tr>
<td>8. The Internet</td>
<td>8. Star Topology</td>
</tr>
<tr>
<td>Study Point 5 – Pseudocode</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>1. Using programming languages</td>
<td></td>
</tr>
<tr>
<td>2. Scratch and Python</td>
<td></td>
</tr>
<tr>
<td>3. No</td>
<td></td>
</tr>
<tr>
<td>4. Another example of an algorithm used to plan out programs</td>
<td></td>
</tr>
<tr>
<td>5. Input, output, while, for repeat-until, if-then-else</td>
<td></td>
</tr>
<tr>
<td>6. Indicates a user will be inputting something</td>
<td></td>
</tr>
<tr>
<td>7. Indicates that an output will appear on the screen</td>
<td></td>
</tr>
<tr>
<td>8. A loop</td>
<td></td>
</tr>
<tr>
<td>9. A counting loop</td>
<td></td>
</tr>
<tr>
<td>10. A decision (selection) in which a choice is made</td>
<td></td>
</tr>
</tbody>
</table>
### Music Self Quiz – Yr 9

#### Questions:

<table>
<thead>
<tr>
<th>Music Theory</th>
<th>Song Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the name of the 5 lines that music is written on?</td>
<td>1. What are the basic structural elements of a song?</td>
</tr>
<tr>
<td>2. What sign is drawn at the beginning of a piece of music to show the high notes?</td>
<td>2. What is the section called when the melody and lyrics are repeated the same?</td>
</tr>
<tr>
<td>3. What sign is drawn at the beginning of a piece of music to show the low notes?</td>
<td>3. What is another name for an instrumental bridge?</td>
</tr>
<tr>
<td>4. What length of note is represented by a circle?</td>
<td>4. How many chords are most pop songs based on?</td>
</tr>
<tr>
<td>5. Music is divided into equal sections called?</td>
<td>5. What are the 3 main related chords called?</td>
</tr>
<tr>
<td>6. What is drawn after the clef to show the number of beats?</td>
<td>6. What are the 3 notes of a chord called?</td>
</tr>
<tr>
<td>7. What is drawn to show a repeat of the musical section?</td>
<td>7. What fingers should you use when playing a chord on a keyboard?</td>
</tr>
<tr>
<td>8. What is drawn to show the end of the piece of music?</td>
<td>8. What hand should you use to play melodies on a keyboard?</td>
</tr>
<tr>
<td>9. How do you draw 2 quavers together?</td>
<td>9. What is the tuning for open strings on a guitar?</td>
</tr>
<tr>
<td>10. How do you draw 2 quavers together?</td>
<td>10. How many strings are there on a bass guitar?</td>
</tr>
</tbody>
</table>

#### Questions

<table>
<thead>
<tr>
<th>Music Theory</th>
<th>Music Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How many notes in total are there on a full size piano?</td>
<td>1. What does pitch mean?</td>
</tr>
<tr>
<td>2. What is a sharp?</td>
<td>2. What do dynamics mean?</td>
</tr>
<tr>
<td>3. What is a flat?</td>
<td>3. What does tempo mean?</td>
</tr>
<tr>
<td>4. What does the LH part play in most piano / keyboard pieces?</td>
<td>4. What does structure mean?</td>
</tr>
<tr>
<td>5. Describe the hand position of a good keyboard player</td>
<td>5. What does texture mean?</td>
</tr>
<tr>
<td>6. What note should you sit in line with when playing the keyboard / piano?</td>
<td>6. What does Harmony mean?</td>
</tr>
<tr>
<td>7. What is the pulse?</td>
<td>7. What does melody mean?</td>
</tr>
<tr>
<td>8. How do we know a section of music needs to be repeated before moving onto the rest of the piece?</td>
<td>8. What is a sequence?</td>
</tr>
<tr>
<td>9. What is a phrase mark?</td>
<td>9. What is an ostinato?</td>
</tr>
<tr>
<td>10. What language are all words describing tempo written in?</td>
<td>10. What shows the piece of music has finished at the end?</td>
</tr>
</tbody>
</table>
# Music Self Quiz answers - Yr 9

## Answers:

### Music & Composition

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stave</td>
</tr>
<tr>
<td>2.</td>
<td>Treble Clef</td>
</tr>
<tr>
<td>3.</td>
<td>Bass Clef</td>
</tr>
<tr>
<td>4.</td>
<td>Semi-breve – 4 beats</td>
</tr>
<tr>
<td>5.</td>
<td>Bars</td>
</tr>
<tr>
<td>6.</td>
<td>Time Signature</td>
</tr>
<tr>
<td>7.</td>
<td>2 dots and 2 lines</td>
</tr>
<tr>
<td>8.</td>
<td>Double Bar-line</td>
</tr>
<tr>
<td>9.</td>
<td>Draw a horizontal line between them</td>
</tr>
<tr>
<td>10.</td>
<td>Italian</td>
</tr>
</tbody>
</table>

### Music & Composition

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Intro, Verse, Chorus, Bridge, Outro</td>
</tr>
<tr>
<td>2.</td>
<td>Chorus</td>
</tr>
<tr>
<td>3.</td>
<td>Middle 8</td>
</tr>
<tr>
<td>4.</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Primary Chords</td>
</tr>
<tr>
<td>6.</td>
<td>Triad</td>
</tr>
<tr>
<td>7.</td>
<td>1st, 3rd and 5th</td>
</tr>
<tr>
<td>8.</td>
<td>Right Hand</td>
</tr>
<tr>
<td>9.</td>
<td>E, A, D, G, B and E</td>
</tr>
<tr>
<td>10.</td>
<td>4</td>
</tr>
</tbody>
</table>

## Answers:

### Music Theory

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>88</td>
</tr>
<tr>
<td>2.</td>
<td>A black key to the right of the note played</td>
</tr>
<tr>
<td>3.</td>
<td>A black key to the left of the note played</td>
</tr>
<tr>
<td>4.</td>
<td>The bass line or chords</td>
</tr>
<tr>
<td>5.</td>
<td>Curved fingers hovering by the keys, wrist up above the keys</td>
</tr>
<tr>
<td>6.</td>
<td>Middle C</td>
</tr>
<tr>
<td>7.</td>
<td>The heart-beat of the music- it keeps you in time throughout the piece</td>
</tr>
<tr>
<td>8.</td>
<td>Double dot repeat marks appear in the score to tell the player to play that section again</td>
</tr>
<tr>
<td>9.</td>
<td>A curved line drawn over a selection of notes to show that they need to be played / sung smoothly</td>
</tr>
<tr>
<td>10.</td>
<td>Italian</td>
</tr>
</tbody>
</table>

### Music & Composition

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>High or low notes</td>
</tr>
<tr>
<td>2.</td>
<td>Loud or soft</td>
</tr>
<tr>
<td>3.</td>
<td>The speed of the piece</td>
</tr>
<tr>
<td>4.</td>
<td>How the piece is broken up into sections</td>
</tr>
<tr>
<td>5.</td>
<td>The quality of the sounds mixed together</td>
</tr>
<tr>
<td>6.</td>
<td>The parts under the melody (tune)</td>
</tr>
<tr>
<td>7.</td>
<td>The tune</td>
</tr>
<tr>
<td>8.</td>
<td>A repeated pattern usually starting on a different starting note</td>
</tr>
<tr>
<td>9.</td>
<td>A repeated rhythm that stays the same throughout</td>
</tr>
<tr>
<td>10.</td>
<td>Silence</td>
</tr>
</tbody>
</table>