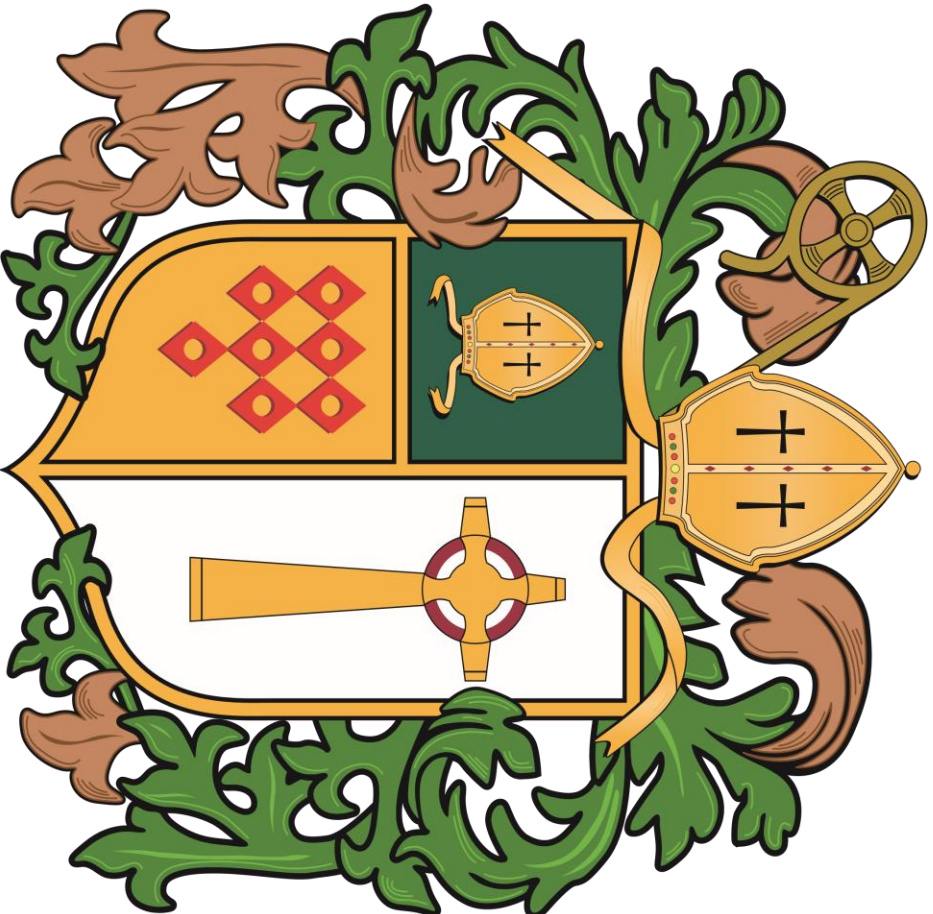


Cycle 1: Year 8



St Wilfrid's R.C. College

Name: _____

Form: _____

Tutor: _____

Page	Contents
3	Cycle 1 Homework overview
4-5	St Wilfrid's standard
6-7	St Wilfrid's Core Learning Habits
8-9	Art
10-11	DT
12-13	English
14-17	Geography
18-21	History
22-24	ICT
25-31	Maths
32-34	MFL
35	Music
36-41	PE
42-47	RE
48-61	Science

How to use your 100% booklet:

1. Look at page 3 for what content you need to be learning and then use this contents page to take you to the right place
2. Make sure you're ready to be assessed during morning meeting time on the day stated
3. Eg: week 2, Thursday morning meeting will test MFL content. This means you need to make sure you've learnt that content **BEFORE** Thursday
4. At the back of your booklet, you will find a range of strategies (with blank sheets of these strategies) to help you learn your core knowledge
5. You will be given 5 questions to assess your knowledge during morning meeting time which will then be self assessed and corrected in green pen

Year 8 HW Cycle 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Monday	Maths P25+26 Q1-5	Maths P27 Q1-5	Maths P28+29 Q1-5	Maths P30+31 Q1-5	Maths P25+26 Q6-10	Maths P27 Q6-10
Tuesday	English p12 Q1-7	English p12 Q8-15	English p12 Q1-7	English p12 Q8-15	English p12 Q1-7	English p12 Q8-15
Wednesday	Science P.48 - TOP HALF	Science P.55	Science P.58	Science P.48 - BOTTOM HALF	Science P.49	Science P.56
Thursday	RE: P.42-44, questions 1-5	MFL: P.32, Week 1-2, sentences 1-12	RE: P.42-44, questions 6-10	MFL: P.33, Week 3, sentences 1-8	RE: P.42-44, questions 11-15	Art: P8-9
Friday	Geography P15 8.1.1 Q1-6	History P.18-19 Q1-5	Geography P15 8.1.3 Q1-3 8.1.4 Q1-2	History P.18-19 Q6-10	Geography P15 8.1.5 Q1-3	DT: P10-11
Year 8 HW Cycle 1	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Monday	Maths P28+29 Q6-10	Maths P30+31 Q6-10	Maths P25+26 Q1-10	Maths P27 Q1-10	Maths P28+29 Q1-10	Maths P30+31 Q1-10
Tuesday	English p12 Q1-7	English p12 Q8-15	English p12 Q1-7	English p12 Q8-15	English p12 Q1-7	English p12 Q8-15
Wednesday	Science P.50	Science P.60	Science P.51 Qs1-5	Science P.51 Qs6-10	Science P.52 Q1-5	Science P.52 Q6-10
Thursday	RE: P.45-47, questions 1-5	MFL: P.33, Week 4, sentences 9-15	RE: P.45-47, questions 6-10	MFL: P.34, Week 5-10, sentences 1-16	RE: P.45-47, questions 11-15	Music: Pg 35
Friday	History P.20-21 Q1-5	Geography P17 8.2.1 Q1-4 8.2.2 Q1	History P.20-21 Q6-10	Geography P17 8.2.3 Q1-4 8.2.4 Q1	History P.20-21	ICT p? Q1-5

ST WILFRID'S STANDARD



We are **prepared** and **equipped** to learn.

In our school bag, we have...

Pupil planner



Reusable water bottle



Reading book



In our pencil case, we have...

Black pen



Pencil



Ruler



Green and purple pen



Rubber



Scientific calculator

This is how we present our books:

We write the date and title and underline using a ruler.

Monday 1st January
Romeo and Juliet: Act 2 Scene 2

We always write in black pen.

Retrieve

1. Romeo doesn't really enter at the beginning of this scene, he's been there all along, on the other side of Capulet's garden wall. ✓
2. Bathos- an anti-climax which is abrupt; usually humour that comes from an odd and sudden change. ✓
3. In the patriarchal system of Elizabethan England, women's status and security depended on the status of their fathers or husbands. ✓
4.
 - Violence and conflict ✓
 - Role of women ✓
 - Loyalty and honour ✓
 - Transformative power of love
 - Tragic fate

We always respond to feedback in green pen.

We always start sentences with capital letters.

We use subheadings to structure our work, if appropriate.

Example- We Do

Explore the ways in which Shakespeare presents the power of love between Romeo and Juliet in act 2 scene 2.

Shakespeare presents love as more powerful than hatred and prejudice in the play. Both Romeo and Juliet defy danger and oppose stronger forces to pursue love. Shakespeare's tragedy illustrates the lengths the doomed lovers are willing to go to in order to oppose the prejudice and hatred between their families. Their marriage, and subsequent tragic deaths, symbolise the sacrifice they make in the name of love and peace. AO1

We use a pencil and ruler for diagrams.



We correct any spelling, grammar or punctuation mistakes.

[SP]

Significant
Significant

In this extract, the power of the love Romeo feels for Juliet means he willingly puts himself in danger; he disregards the significant [SP] risk of trespassing on Capulet property. It is important to note that Romeo is hiding in the dark garden, and overhears Juliet.

We always write in our best handwriting.

Date is underlined

Questions answered in full sentences

We start sentences with capital letters

<u>10/9/26</u>	RE: 100% booklet
☐ Q1)	The word stewardship means to have a duty to care for the environment.
Q2)	Laudato Si is an encyclical written by Pope Francis.
Q3)	Tikkum Olam is a Jewish concept of repairing the world.
Q4)	Just war theory was written by Thomas Aquinas
Q5)	Thomas Aquinas said that your conscience must be your last part of a decision making process.
☐ Q6)	The word retribution means that a punishment is fit for the crime.
Q3)	Laudato Si is an encyclical teaching Catholics about stewardship.
	Spellings
	Maths
☐	

We write the subject, the title & **UNDERLINE**

No gaps left between questions

We use **BLACK** pen

Corrections made underneath

At St Wilfrid's RC College, our vision is clear:

We strive for every pupil to realise their God-given potential, become the very best version of themselves, and leave us equipped with the knowledge, character and skills needed to thrive in society.

Respectful

Perfect
uniform

No
answering
back

Responsible

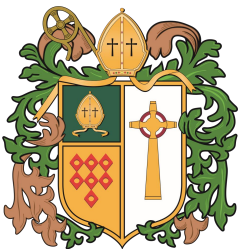
Be fully
equipped

Attendance
and
punctuality

Resilient

On task

Homework



Perfect uniform

Full uniform worn correctly every day
Shirt tucked in, tie and blazer worn
Grey tailored trousers or pleated grey skirt worn
Correct school shoes
No extreme hairstyle
Skirts unrolled
No makeup
No mobile phones

Attendance and punctuality

Attendance and punctuality to school each and every day
Every pupil will be on the school yard, equipped, at 08:35
Pupils will arrive on time to every lesson

No answering back

Listen without interrupting
Communicate in a respectful tone to all members of the school community
Follow instructions
Use appropriate language

On task

Focus for 100% of the lesson
Sit upright and track the teacher
Ask and answer questions
Be 'on task' when completing an independent task

Be fully equipped

Clear pencil case
Black pen
Green pen
Pencil
Ruler
Rubber
Scientific calculator

Homework

Homework will be completed on time
Write your homework in your planner
Use your knowledge organiser in lessons and at home

Respectful

Responsible

Resilient





St. Wilfrid's RC College - Knowledge Organiser

Year 8 - Art & Design - Food

In this module you will learn how to analyse the work of an artist to help improve your drawing skills by:

- Learning how to describe an artists work using specific art vocabulary.
- Learning how to look at an artists style of work and evaluate it.
- Learning how to use the artists style to influence you to develop your own work.

Artist: Sarah Graham

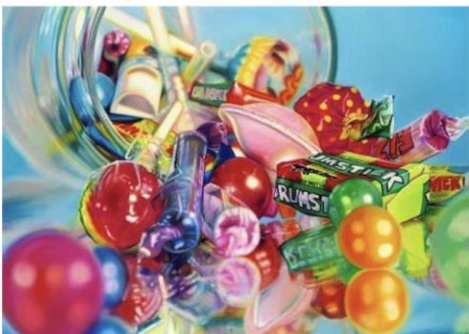
Sarah Graham is a contemporary British artist best known for her hyper-realistic paintings of everyday objects, particularly sweets, toys, and brightly coloured household items. Working mainly in acrylics, she carefully recreates the glossy textures, reflections, and bold colours of her subjects at a large scale, turning familiar objects into striking, almost monumental images. Graham often explores themes of nostalgia and consumer culture, using her detailed style to celebrate and elevate ordinary items while also encouraging viewers to reconsider their relationship with them.



Key Words:

Food
Sweets
Childhood
Nostalgia
Pigmented
Saturated
Composition
Realism
Colourful
Observational
Still Life
Evaluate
Analyse
Analogous
Complimentary

Writing like an artist.....



Write down as much as you can to describe the artwork...

Use these key words to help you

• Colour

How has the artist used colour in this Artwork?
Example, bold colour, bright colours, pale...

• Media

The material used to create the artwork..
Example Paint, pencil, biro pen, chalk...

• Technique

How has the artwork been created?
Example - shading techniques, blending, realistic...

• Meaning

Is there a story in this piece?
It can be a story you think when looking at the artwork. What does the man look like? Where might he be from?

• Subject matter

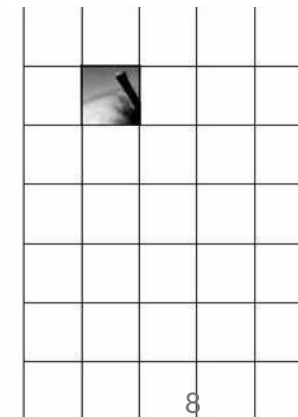
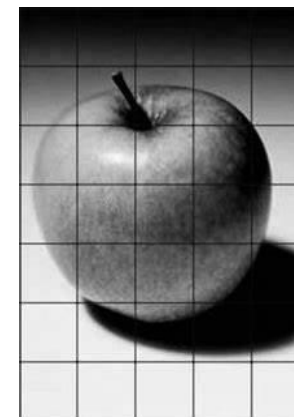
This is the subject the work is on
Example- animals/portraits/ cars

Top tips for success

Things to remember to create a successful drawing:

- Don't press too heavy when drawing. (No hard outlines).
- Make sure the shape and proportion is correct before adding the shading. (Check your accuracy).
- Make sure your pencil is sharpened before you start and re-sharpen continually
- Create a wider range of tones. Especially dark tones to create a higher contrast between light and dark (Carefully pick out the darkest areas).
- Use the shading techniques to create the definition without using outlines.
- Make it look more 3D but putting the techniques closer together or further apart.
- Make sure you are using the most appropriate shading technique to create the tones and textures.

Grid Method



Glossary:

Nostalgic- longing for or thinking fondly of a past time

Realism-something the represents reality

Saturated- (of colour) very bright, full.

St. Wilfrid's RC College - Knowledge Organiser

Year 8 - Art & Design - Food



Key word spellings.

1. **Nostalgia**
2. **Complimentary**
3. **Analogous**
4. **Hyper-realism**
5. **Pigmented**

1. What subjects does Sarah Graham commonly paint in her artwork?
2. What materials does Sarah Graham mainly use to create her paintings?
3. What artistic style is Sarah Graham best known for?
4. What does the term nostalgia mean?
5. Why might Sarah Graham's artwork make viewers feel nostalgic?
6. Which shading techniques could you use to create realistic tones in a food drawing?
7. Why do we use the grid method in Art? How does it help our drawing?
8. What are the primary and secondary colours?
9. What are the complimentary colours?
10. What are analogous colours?

Knowledge Organiser Y8 Nightlight – Base

Things I should know or understand (knowledge)

- Designs sometimes have limitations or **constraints** (things you can't do)
- How the process of **vacuum forming** works
- There are many types of plastic, these all fit into 2 categories: Thermoplastic and Thermosetting
- **Thermosetting** plastics can only be moulded once
- **Thermoplastics** can be re-shaped many times.
- The thermoplastic you are using is **H.I.P.S.** (high impact polystyrene)
- You need a **MDF mould** to form the plastic round.
- Heated (softened) plastic can be moulded in a **vacuum former**.
- Trimming and smoothing the edges of the HIPS gives it a professional-looking finish.

Things I should be able to do (skills)

- Design within constraints (you can only design your shape within the lines given)
- Safely and accurately cut plastic using the Gerbil trimmer.
- Use glass paper to give a smooth finish to the edges of your plastic.
- Correctly and **SAFELY** use the scroll saw (acroll saw)
- Use the milling machine to cut a slot

Equipment I should be able to name and use

Equipment



Hegner Saw

Powered saw with a very thin blade to cut intricate patterns.



Band Facer

Machine with a moving sanding belt. Used to smooth wood.



Vacuum Former

Machine which heats H.I.P.S. and forms it around a mould.

Equipment



Gerbil

A machine designed to trim vacuum formed shapes without damaging them.



Milling machine

A machine designed to trim vacuum formed shapes without damaging them.



Safety Goggles

Protect your eyes.

Apron

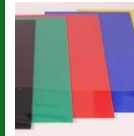
Protect your body.

Components/materials



MDF

Medium density fibreboard. A cheap man-made board which can be easily cut and shaped.



H.I.P.S.

High impact polystyrene. A thin thermoplastic which can be vacuum formed.

Spellings

Vacuum Former
H.I.P.S
High Impact Polystyrene
Gerbil
Smooth
Accurate
Hegner Saw
Light
Design
MDF
Medium Density
Fibreboard
mould
Jig
measure

Knowledge Organiser Y8 Electronics and CAD

Things I should know or understand (knowledge)

- How electricity travels round a circuit.
- What the components in your circuit do (see below).
- Metals like those in the PCB and the components' wires conduct electricity.
- Plastics and wood insulate (do not conduct electricity)
- If metals do not have contact, the electricity can't flow. Solder should form a contact when used properly.
- Designs should suit the person who will use them.
- CAD makes developing a design much quicker, easier and cheaper than by hand.

Equipment



Laser Cutter

Uses a laser to cut through sheet materials such as acrylic and MDF. Can only cut at 90 degrees to (straight into) a material.



Soldering Iron

Used to melt solder on to the PCB, to attach components.



Side Cutters

Used to snip the excess wire from components after they have been soldered.



Wire Strippers

Used to strip the plastic coating off wire.

Things I should be able to do (skills)

Create a simple circuit.

- Place components as shown, the correct way round.
- Be able to use a soldering iron SAFELY with correct PPE.
- Be able to hold for 3-4 seconds and apply solder to a join.
- Test a circuit to check for loose connections and correct mistakes. (mountains, not footballs)

Use CAD to design a light top

- Use a **path tool** to draw a basic shape in 2D design software.
- Use the **start edit** tool to amend the shape.
- Change the size of the work area in 2D Design.
- Use the **Group** tool.
- Use the contour tool to create a dynamic shape.

Equipment I should be able to name and use

Equipment and components



PCB

Printed circuit board. Has metal connections to create your circuit.



LED

Light Emitting Diode. A small light for your circuit.



Resistor

Slows the electrical current to protect the components.



Switch

Stops/starts electricity flowing by breaking the circuit.

Software tools



Select

Used to indicate (select) a line/shape



Path

Closed or open paths are a way to free draw in the 2D Design software.



Transform-Size

Used to change the size of your drawing without distorting it.



Attach

This can attach the end of one line to



Vectorise

Changes an image into a vector line to be read by a CAM machine.



Contour Tool

Traces a line around a line/shape at a distance chosen by you.



Line Tool

When double clicked, you can choose the angle and length of your line



Group

Groups together selected objects. (reversible)



Start Edit

Only appears when a line is selected. Allows you to move a line and change its direction.

Spellings

Light
Emitting
Diode
Solder
Soldering Iron
Printed Circuit board
Resistor
Switch
Cutters

Computer
Aided
Design
Acrylic
Laser cutter
Contour
Vectorise
Laser cutter

SECTION ONE - CONTEXT		SECTION TWO - CHARACTERS		SECTION THREE - VOCABULARY		SECTION FOUR - METHODS		SECTION FIVE – THEMES			
Russian Revolution	Following abolition of monarchy in 1917, group named the Bolsheviks, ran by Vladimir Lenin, ran Russia as a communist state.	Old Major	Wise, old pig. Starts the rebellion with his powerful speech about men. Represents Karl Marx/Vladimir Lenin	Proletariat	Workers/working class	Triadic	Set of three things e.g. adjectives/verbs	Role of proletariat	Orwell highlights passivity, ignorance and lack of action within the working classes.		
				Socialism	Political theory that society should be owned by community as a whole – everyone is equal						
		Snowball	Hero of the Battle of the Cowshed, expelled by Napoleon and used as a scapegoat. Represents Leon Trotsky.	Communism	A version of society based on the common ownership and equality. Society should not rely on social classes, or money.	Hypophora	Posing a question then answering it	Leadership & corruption	Orwell argues that power ultimately corrupts someone and leads to a change in beliefs/mindset.		
Joseph Stalin	Leader of Soviet Russia after Vladimir Lenin. Ran totalitarian government renowned for violent and dangerous policies.	Napoleon	Controlling dictator. Leads by fear and propaganda. Represents Joseph Stalin	Totalitarianism	Form of government ran by a dictator	Anaphora	Repeating the beginning of a sentence.	Education	Orwell presents the importance of education and knowledge as the animals are unable to challenge the pigs due to their lack of understanding.		
				Dictator	Ruler with total power						
				Allegorical	Story with a symbolic/hidden meaning	Evidence	Using facts, statistics or opinions to support your point				
Communism	A version of society based on the common ownership and equality. Society should not rely on social classes, or money. Created by Karl Marx.	Mr Jones	Drunken owner who neglects animals of Manor Farm. Symbolises the control and greed of men. Represents Tsar Nicholas/aristocracy.	Fable	Short story with a moral purpose	Hyperbole	Obvious exaggeration	Deceit	Orwell demonstrates how superior knowledge can be used to deceive and trick as well as lead.		
				Propaganda	Biased or misleading information used to promote a point of view						
				Squealer	Napoleon’s mouthpiece, he uses propaganda to control the animals. Represents use of propaganda and lies in Soviet Russia	Didactic	Intended to teach in moral instruction	Emotive language	Using language that makes the reader feel a certain way	Rules & Order	The commandments and the traditions set up immediately after unite the animals. Yet rules and traditions prove malleable and the animals can’t recognised they are being used to deceive and take advantage of them.
Orwell’s political beliefs	Committed socialist and wanted to expose hypocritical rule of Stalin			Microcosm	A community, place or situation which represents something larger	Rhetorical question	Posing a question which an obvious answer	Dreams	Orwell is criticising utopian ideals as the dream of Animal Farm is used to force the animals to work harder.		
				Corruption	Dishonest or fraudulent behaviour by those in power						
Political allegories	Orwell uses the simplest story of animals to highlight the danger of Stalin and his rule in Soviet Russia.	Boxer	Innocent but hard working, very strong and selfless. Limited knowledge and lack of education. Represents proletariat/working classes	Bourgeois	People in middle classes with materialistic values	Metaphor	Comparing two objects				
				Aristocracy	Higher classes of society						
				Tyrannical	Exercising power in a cruel way	Satire	Use of humour, irony and exaggerate to expose or ridicule something				

1. What is a fable?
2. What is a dictator and who is the dictator on the farm?
3. What is rhetoric?
4. What does DAFOREST stand for?
5. What inspired Orwell to write *Animal Farm*?
6. What is an allegory?
7. What is propaganda?
8. What political beliefs does Communism promote?
9. What does tyrannical mean and how can you use it in a sentence?
10. What is a metaphor?
11. What is a hierarchy?
12. Who does Napoleon represent in the novel?
13. What is corruption and what is an example of corruption in the novel?
14. Which character uses propaganda on the farm?
15. What is a cyclical structure?



8.1a

The Restless Earth



Geography Knowledge Organiser

8.1.1 Natural hazards

Natural hazard – a natural process which could cause death, injury or disruption to humans, or destroy property and possessions e.g. earthquake

Natural disaster – a natural hazard that has actually happened e.g. Sendai, Japan 2011 earthquake and Tsunami

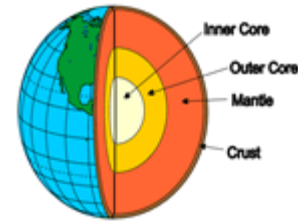
Examples of natural hazards:

Geological - caused by land and tectonic processes

Atmospheric - weather and climate

Hydrological - water

Biological – involve living organisms



Inner core: A layer of very hot, heavy rock. Convection currents make the rock here move like toffee. This layer makes up about half the Earth.

Outer core: A layer of solid metal (iron and nickel). Temperature here is 5000°C. Pressure is 3 million times greater than at sea level so the metals cannot melt.

Mantle: A layer of liquid iron and nickel. Temperatures range from 2000-5000°C.

Crust: A thin layer (8-65km) of solid rock broken up into segments called plates. This layer can be made of granite (continental) or basalt (oceanic).

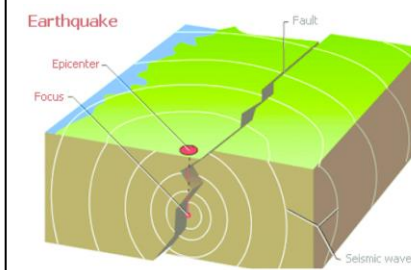
Convection currents in the mantle cause the plates to move.

Destructive=moving towards

Constructive=moving away

Conservative=moving alongside

8.1.2 Earthquakes



Focus: Start of the earthquake beneath the surface

Epicentre: Where the earthquake is felt on the surface

Seismic waves: Energy of the earthquakes
Fault:

Case Study: Haiti

Plate Margin: Conservative

Richter Scale: 7.3

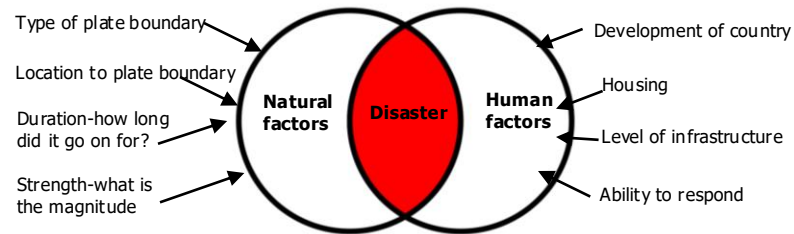


People began sleeping on the streets on pavements due to fears of building collapse	S	The main prison was destroyed and 4,000 inmates escaped	S
Morgues were overwhelmed and mass graves were dug for tens of thousands of bodies brought in dumper trucks	S/En	500,000 homeless survivors were sleeping rough and another 500,000 were living in make-shift camps	S
80% of schools were damaged or destroyed	S	The port and major roads were damaged beyond repair	Ec
The tourist industry declined as people stopped visiting	S/En	316,000 people died and 300,000 people were left with life-changing injuries	S
Political unrest as people blamed the government for not putting more money into making schools, hospitals safe	S/En	19 million cubic metres of rubble in Port au Prince	En
1 in 5 jobs were lost as a result of the earthquake	Ec	There were significant outbreaks of cholera due to contaminated water sources	S

Impacts:
Primary and
Secondary

Social
Economic
Environmental

8.1.3: Factors that influence impacts of natural hazards



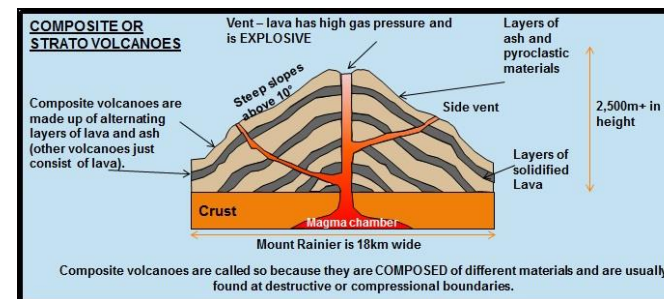
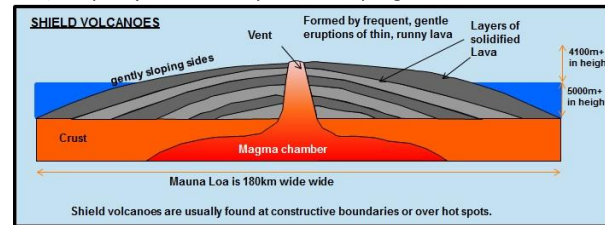
Haiti		
Location	The epicentre was near the capital city of Port au Prince. The focus (depth) of the earthquake was also very shallow.	
Housing	Roughly, 3 million people live in Port au Prince, there capital city, where most people live in slum conditions. Houses are made from scrap materials.	
Infrastructure	No money has been spent on improving buildings, hospitals and roads in Haiti in the past. Their only airport and port were damaged vastly and could not be used for many days.	

8.1.4: Hazardous Volcanoes

Active volcano: A volcano which has erupted in living memory.

Dormant volcano: A volcano which has erupted in the last 2000 years but not in living memory.

Extinct volcano: A volcano which has not erupted in historic times (last 10,000 years) and is unlikely to ever erupt again.



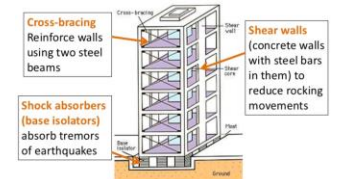
8.1.5 Managing tectonic hazards

Volcanoes

- Creating an exclusion zone around the volcano
- Being ready and able to evacuate residents
- Emergency supply of basic provisions, such as food
- Good communication system needs to be in place

Earthquakes

- Training people may involve holding earthquake drills and educating people via TV or radio.
- Emergency kits and store them in their homes.
- Earthquake-proof buildings Roads and bridges can also be designed to withstand the power of earthquakes.



Warning signs	Monitoring techniques
Hundreds of small earthquakes are caused as magma rises up through cracks in the Earth's crust.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging techniques and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases. The higher the sulfur content of these gases, the closer the volcano is to erupting.	Gas samples may be taken and chemical sensors used to measure sulfur levels.

8.1a

The Restless Earth



Test yourself

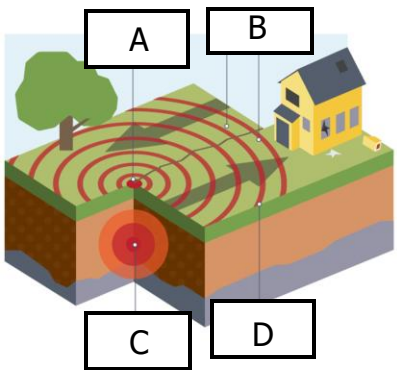
8.1.1 Natural hazards

1. Identify the different layers of the earth.
2. Give one key feature of each layer of the earth.
3. Identify the location of:
Destructive plate margin
Constructive plate margin
Conservative plate margin
4. Describe the process that causes plates to move.
5. Give the direction of plate movement at each plate margin
Destructive plate margin
Constructive plate margin
Conservative plate margin
6. Identify tectonic landforms found at each plate margin.



8.1.2 Earthquakes

1. Label the features of an earthquake.
A=
B=
C=
D=
2. What are seismic waves?
3. What is the focus?
4. Give two primary impacts of Haiti.
6. Give two secondary impacts of Haiti

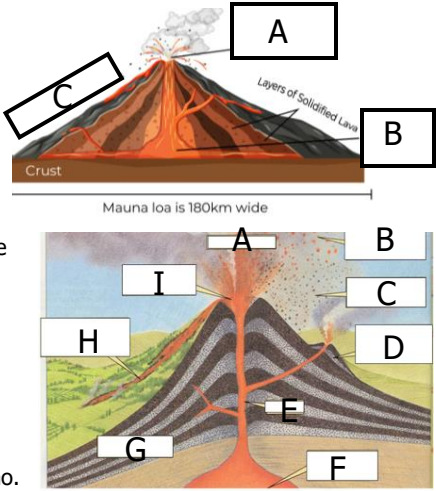


8.1.3: Factors that influence impacts of natural hazards

1. Explain how the location of Haiti made the earthquake dangerous.
2. Explain how the depth of the earthquake make the earthquake more dangerous.
3. Explain how the infrastructure of Haiti made the earthquake more dangerous.

8.1.4: Hazardous Volcanoes

1. Label the features of a shield volcano.
2. Label the features of a strato/composite volcano.
3. Explain the formation of a shield volcano.
4. Explain the formation of a strato/composite volcano.

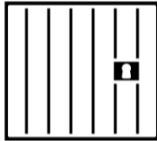


8.1.5 Managing tectonic hazards

1. Give two ways we can manage volcanic eruptions.
2. Give two reasons which strategy is better: Volcano monitoring or Hazard Mapping.
3. Draw and annotate an earthquake proof building.
Success criteria:
Annotate=identify the feature and explain how it helps

8.1b

Is Russia a prisoner of its geography?



Geography Knowledge Organiser

8.2.1 Russia's physical landscape

Russia is a **transcontinental country**. It spans two continents.

FACTS:

More than three quarters of Russia's population lives in the European part of the country.

The Ural Mountains and Ural River mark Europe's eastern continental border with Asia.

The region of Asia that is controlled by Russia is known as Siberia.

Russia's landscape



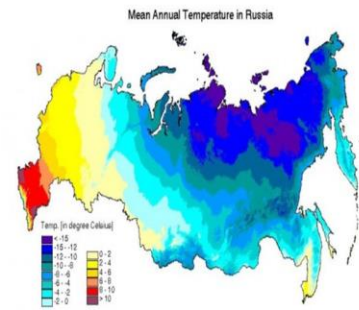
1. Lake Baikal holds 20% of the world's fresh water	2. The population of Russia is 144 million people.	3. Tourism accounts for around 5% of Russia's GDP
4. Oil and natural gas are abundant and make up 70% of total exports	5. The Ural mountains run from north to south through Russia and divide the European and Asia continents	6. Russia is so vast (a land mass of 17.1 million km²) that there are 11 time zones across its land mass

8.2.2 Climate

Russia's climate is primarily continental, characterised by large temperature differences between seasons, with cold winters and warm to hot summers.

The country experiences a wide range of climatic zones, from tundra in the far north to temperate woodlands in the south.

Precipitation varies significantly across the country, decreasing from west to east and from north to south.



Causes of Russia's climate

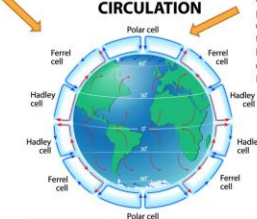
Moscow

Ferrel Cell:

It's driven by the sinking air from the Polar cell and the rising air from the Hadley cell.

Air rises at around 60 degrees latitude causing low pressure systems. This brings wetter, unsettled weather systems.

GLOBAL ATMOSPHERIC CIRCULATION



Yakutia

Polar Cell:

At the poles, cold, dense air sinks, creating high-pressure. This sinking air flows outwards from the poles at the surface, moving towards lower latitudes (towards the equator). It brings cold, drier conditions.



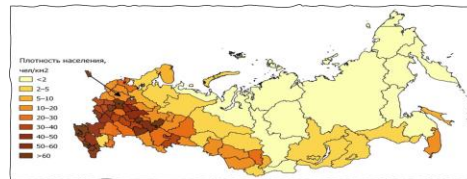
8.2.3: Russia's population

Where do people in Russia live?

The population density is highest along the Western border of Russia.

The population density is lowest in east Russia.

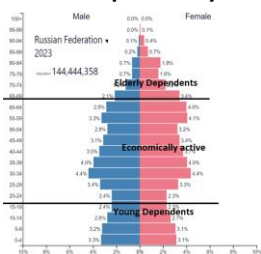
An anomaly to this trend is in the south-east where there are 10-20 people / sqm.



Why do most people live in the west?

Flat land
Forest areas
Agricultural production
Political power of Moscow
St. Petersburg second largest city
Baltic Sea port
Climate milder in west, colder in the north

Russia's Population Pyramid



8.2.4: Russia's resources and borders

Distribution of Russia's Resources



Oil: Shipped using tankers

Natural Gas: Transported by pipelines

Coal: Transported by vehicles

Russia's changing borders



Impacts of Russia's changing borders

The most immediate impact was the birth of fifteen independent nations, these included Russia, Ukraine, Belarus, Estonia, Latvia, Lithuania, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.	The Soviet Union's collapse marked the end of the Cold War, leading to a significant shift in global power.	Many of the newly independent states sought closer ties with the West, joining organisations like the European Union and NATO.
The collapse reduced the Soviet Union's influence, leading to a period of uncertainty and power struggles in the region.	The newly independent nations faced the challenge of transitioning to their new independent economies.	The collapse disrupted established trade routes and economic linkages within the Soviet Union.
Developing new trade relationships and adapting to the global market proved challenging for many of the newly independent states.	The collapse led to the redistribution of natural resources, particularly energy resources like oil and gas.	The collapse led to the rediscovery of national languages, cultures, and histories.
The political and economic changes led to significant migration patterns, including movement within and between the newly independent states, as well as emigration to other countries.	The transition to market economies and the collapse of the Soviet social safety net caused hardship for many people and industries.	In Russia, the legacy of Soviet-era policies resulted in a geographically skewed landscape, with a concentration of industry and population in certain regions while others were neglected.

8.2.5 Superpowers

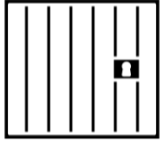
A superpower is a nation that generates influence in other nations because of its military, technological, economic, and cultural strength.



	RUSSIA	USA
Economic Power	Russia's GDP is \$1.48 trillion GDP per capita: \$63,000	USA's GDP is \$20.94 trillion GDP per capita: \$17,780
Political Power	99.6% Literacy Rate 70 years life expectancy Russia have a President: Putin	99% Literacy Rate 78 years life expectancy The USA have a President: Trump
Military Power	Russia have a defence budget of \$44.6 billion Russia have powerful nuclear warheads	Most powerful globally, expenditure of \$508 billion a year 800 military bases globally
Demographic Power	143.4 million people live in Russia 11.98 million people live in the capital, Moscow	331.9 million people live in the USA 7.74 million people live in the capital, Washington
Cultural Power	In 2022, 8.2 million people visited Russia Kandinsky is a famous artist Russia's famous landmarks include the Kremlin and Red Square	In 2022, 22.1 million people visited the USA Andy Warhol is a famous artist Celebrities include Marilyn Monroe, Elvis Presley and Muhammad Ali
Natural Resources	Russia's natural resources are valued at \$75 trillion Resources include crude oil, natural gas, coal, and rare earth metals.	320 million residents, world's largest coal reserves Many minerals and metals, natural gas Land area of 9.834million km2.

8.1b

Is Russia a prisoner of its geography?



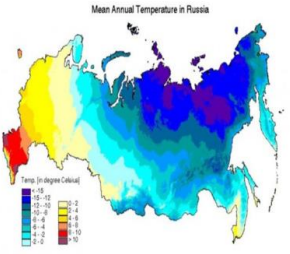
Test yourself

8.2.1 Russia's physical landscape

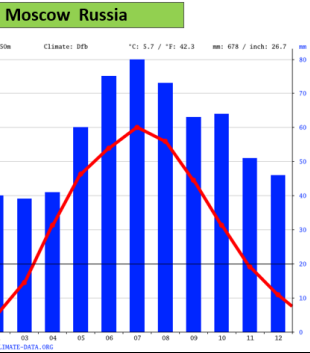
1. Give the definition of transcontinental.
2. Identify the names of the two continents Russia is part of.
3. Give two human features of Russia's landscape.
4. Give two physical features of Russia's landscape.

8.2.2 Climate

1. Describe the distribution of Temperature in Russia
Trend-General
Examples-Highest and lowest
Anomalies-Doesn't fit the pattern



2. Using the climate graph of Moscow:
a. Give the temperature range
b. Give the rainfall range



3. Explain why Moscow has higher Temperatures than Yakutia.

Success Criteria:

Refer to location [N E S W]

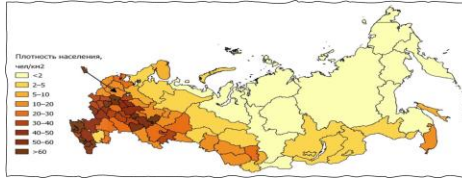
Refer to global atmospheric circulation

8.2.3: Russia's population

1. Describe the distribution of Russia's population

Success criteria:

Trend-General pattern
Examples-Highest and lowest
Anomalies-Doesn't fit the pattern

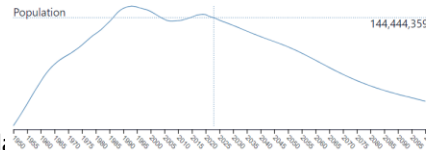


2. Give two factors why most people live in the West of Russia.

3. Describe the trend of Russia's Population

Success criteria:

Trend-General pattern
Examples-Highest and lowest
Anomalies-Doesn't fit the pattern



4. Give two reasons why the popul:

Success criteria:

Give one point and explain how it causes the population to decline.
Give one point and explain how it causes the population to decline.

8.2.4: Russia's resources and borders

1. List the natural resources found in Russia.



2. Give two positives and two negatives of Russia's changing borders.

8.2.5 Superpowers

1. Give the definition of a superpower.
2. Give two ways Russia is a superpower.
3. Give two ways USA is a superpower.
4. Rank the factors in order of importance of what makes a country a superpower.

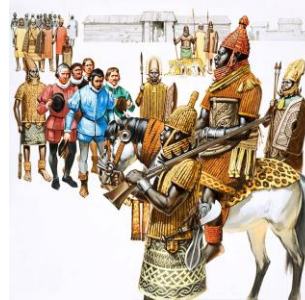
Economic  Money	Political  Government	Military  Defence
Cultural  Traditions	Demographic  Population	Natural Resources  Raw Materials

Y8 Module 1: African Kingdoms: Knowledge organiser

Enquiry Question: Why were the Kingdoms of Africa so 'great'?

Key Person	Definition
Tenkamenin	Ruler of Ghana from 1062 until 1076. The Ghana empire prospered through his management of the gold trade across the Sahara.
Mansa Musa	The most significant of the Mali kings who ruled from 1312-1337. He expanded Mali's influence over the areas of Timbuktu, Gao, and Djenné. Mansa Musa was a devout Muslim who built magnificent mosques all throughout the Mali sphere of influence
Oba Esigie	Ruler of Benin 1504-1550
Queen Idia	Mother of Oba Esigie. Supported many of her son's military campaigns and she was seen as the 'hidden' Oba of Benin due to the power and influence she had.
Queen Amina	Ruled the Kingdom of Zazzau (Nigeria) for 34 years. She was an extremely successful warrior and was well respected among the men she commanded. Amina expanded her Kingdom greatly.

Great: a forward thinking nation or country that has international influence, economic and military strength and takes care of its people.



Key term	Definition
Civilisation	The stage of human social and cultural development and organization that is considered most advanced.
Administration	The running and management of a government.
Oba	Leader/ King
Griot	Storytellers / oral histories passed down
Copper manilla	Copper currency
Cowrie shells	Shells used for currency
Benin Walls	Fortified defensive walls with moats and gates
Ambassador	a representative in a foreign country
Sumptuary Laws	laws which controlled what the people of Benin could access, make and use (bronze, coral etc.)
Ganuwar	Amina's wall

'Great'	'Not so great'
- Kingdoms of Africa had many trade routes that were well protected. - Kingdoms became a melting pot due to trade, spreading ideas, culture, technology - The Ghanaian Empire had access to its own raw materials such as iron ore and gold which could be exchanged for other luxury goods such as horses and textiles - Many African leaders tolerated other religions - Mansa Musa used taxation in a clever way to make more money for Mali - Mansa Musa increased the size of his army to 100,000 soldiers - Timbuktu became a great centre for learning - The City of Benin was carefully planned using mathematical patterns and symmetry - Women such as Queen Amina and Queen Idia played significant roles in running successful Kingdoms	- Kings in Ghana ruled with 'total' power - Kings could prohibit other people from owning certain things such as gold nuggets

Y8: Cycle 1, Topic 1: African Kingdoms
Retrieval questions

Question	Answer
1. Which African kingdom did Mansa Musa rule?	
2. Who was a Griot (what was their role)?	
3. What position in society is an Oba?	
4. Why did Ghana prosper during the rule of Tenkamenin?	
5. What were cowrie shells used as?	

Question	Answer
6. Who was known as the 'hidden' Oba of Benin due to her power and influence?	
7. Define the role of an ambassador.	
8. Why was Queen Amina considered to be a good queen (provide at least one reason)	
9. Provide at least 2 reasons why African Kingdoms were considered to be great.	
10. Provide at least 2 reasons why African Kingdoms were not considered to be great	

Breaking down key vocabulary

Transatlantic means across the Atlantic Ocean

Forced enslavement means enslaved people were forced to work with no pay and in very brutal conditions

The transatlantic slave trade is the name given to the forced enslavement and movement of people from Africa to the Americas. Approximately 12-15 million people were forcibly transported from their homelands in Africa to European colonies and plantations between 1500 and 1870. Some historians suggest the number of enslaved people forced into slavery may have been higher.

Enslaved people are those who were forced to live in a state of slavery

Slavery is a legal term used to describe the status of enslaved people – they lived in a state of slavery

European colonies – when European countries travelled to different parts of the world and made countries part of their empire – they became known as colonies

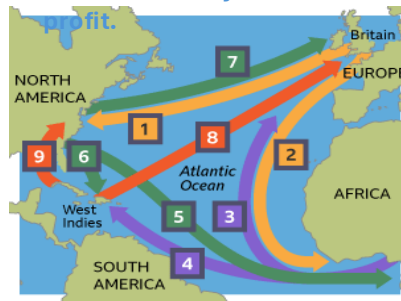
Year 7 link – Francis Drake and competition between England and Spain in South America

Y8 Module 1: Britain and the Transatlantic Slave

Trade: Knowledge Organiser

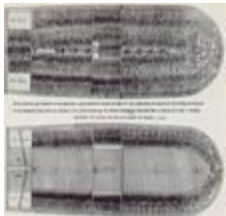
Enquiry question: Did the ‘world’s greatest poacher become the world’s most strident gamekeeper?’ – James Walvin

It was known as the triangular Transatlantic Slave Trade as each part of the journey served a purpose of transporting goods and enslaved people to continually make a profit.



1	Manufactured goods, luxuries
2	Guns, cloth, iron, beer
3	Gold, ivory, spices, hardwoods
4	Enslaved people
5	Rum, iron, gunpowder, tools
6	Fish, flour, livestock, lumber
7	Whale oil, lumber, furs, rice, silk, indigo, tobacco
8	Sugar, molasses, wood
9	Enslaved people, sugar, molasses

The journey from Africa to the Americas was known as the Middle Passage. This was the part of the triangle when enslaved people were on the ship. Conditions were terrible due to a lack of food and water, enslaved people were chained together, and they were treated very harshly by the crew of the ship.

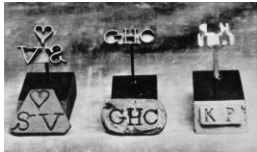


A diagram of a typical slave ship that would cross the Atlantic Ocean. This image was published by the Abolitionist Movement (a movement to end slavery)

When enslaved people arrived in the Americas they would be taken from the ships to be sold at an auction. Any injuries on their body would be hidden with tar so they could make a higher price. Enslaved people would be treated as property rather than human beings and would be sold to the highest bidder. They could be separated from their families and had no choice about who they were sold to.



Most enslaved people worked on plantations under very harsh and torturous conditions. They worked extremely long days and would often be treated terribly. They were branded with the initials of the person who owned them, known as their ‘master’, to reinforce their position as property and to prevent enslaved people from attempting to escape. Life expectancy for enslaved people was much lower due to these conditions. Some enslaved people resisted their treatment by speaking in their own language, dancing and refusing to work. Others took more extreme measures of killing their masters or running away.



An iron brand used on enslaved people

There were many reasons why the Transatlantic Slave Trade was abolished. These included the actions of enslaved people in resisting their treatment and the actions of individuals in Britain who were part of the abolition movement and highlighted the cruelty of the trade. The image is the motto inscribed on a famous 1787 anti-slavery medallion produced by English potter Josiah Wedgwood which asks, “am I not a man and a brother?”



Key word	Definition
Abolition	The action of ending a system or practice
Civil rights	The right to freedom and equality
Emancipation	The process of being set free
Plantation	A farm that only grows one type of crop e.g. coffee, sugar or tobacco
Sotiltee	A sugar sculpture, only the very wealthy could afford.
Enslaved person	A person who is the legal property of another
Transatlantic	To do with countries on both sides of the Atlantic ocean e.g. Britain and the US.
Auction	The process of selling captured or enslaved Africans. Grab and go auction or highest bidder.



William Wilberforce: A British politician who campaigned in Parliament for the abolition of the Transatlantic Slave Trade. He said of the horrors of the trade, “while people might look away from injustice, they can no longer claim ignorance of it”.



Olaudah Equiano: An enslaved man who bought his freedom and published a description of his experiences. He became an anti-slavery campaigner. He said of his experiences “My life had lost its relish (joy, purpose) when liberty was gone.”



Nanny: Legendary figure in Jamaican folklore who has appeared on their money. Nanny was known as Queen Nanny of the Maroons as she led a group who assisted other enslaved people in escaping and joining their community (known as maroon communities). On resistance to slavery, she said “better to die a warrior than live enslaved.”



Samuel Sharpe: Freed from slavery, Sharpe gained an education and used his talents as a speaker to use religious arguments to condemn slavery, saying "I have always considered it wrong, and unjust, that one man should hold another man in slavery. He led Jamaica's most significant revolts 1831-32.



Granville Sharp: A lawyer who set up the Abolition Committee. He fought the court case opposing the treatment of enslaved people on board the Zong ship where 130 enslaved people were killed by the crew. He declared “he could not believe the law of England was really so injurious to natural rights.”

Y8: Cycle 1, Topic 2: Transatlantic Slave Trade

Retrieval questions

Question	Answer
1. What was the Middle Passage?	
2. Provide at least one economic reason why Britain became involved in the Transatlantic Slave Trade	
3. Why did their involvement in the Transatlantic Slave Trade benefit the British empire?	
4. Why was the Transatlantic Slave Trade known as the triangular trade?	
5. What is a Sotiltee?	

Question	Answer
6. Approximately how many people were forcibly transported from their homeland in Africa to European colonies?	
7. Why was life expectancy low for enslaved people on plantations?	
8. Who said the following quote about living in slavery: "My life had lost its relish (joy, purpose) when liberty was gone."	
9. What did Samuel Sharpe do following his freedom from slavery to help others?	
10. Who created this? And what does the inscription say? 	



St Wilfrid's ICT Department Yr 8 Cycle 1 Digital Skills Knowledge Organiser



Photopea is an advanced image editor software, which can work with both raster and vector graphics. You can use it for simple tasks, such as resizing images, as well as complex tasks, such as designing webpages, creating illustrations, processing photographs and more.

This unit will teach you how to use Photopea **step by step**. We will start with basic tasks and gradually progress to more complex features.

Keyword	Definition
 Brush	Brush tool is a basic artistic tool. It lets us draw strokes with a foreground color onto an existing layer. At the top menu, we can choose the blend mode and the opacity of our strokes.
 Pencil	Pencil is very similar to the Brush tool, but it creates sharp edges.
Spot Healing Brush tool	This tool allows you to remove unwanted object and artefacts from a picture
 Clone Stamp	Clone stamp lets us copy the content from one part of the layer into another part. First, we hold the Alt key and click on the layer, to choose the source of cloning. Then we simply draw strokes in another part, which are filled with the content from the source part. Decrease the Hardness of a brush, so that new strokes have smooth edges, to make a smooth transition between the old and the new content.
Text Tool	Putting text into images is an essential operation of image editing. Photopea offers a rich set of tools for working with text. Text is stored in PSD documents inside Type Layers, which have a thumbnail with a capital letter T on it.
Gradient Tool	The Gradient tool creates a gradual blend between multiple colors. You can choose from preset gradient fills or create your own.
 Zoom tool	The Zoom tool allows you to zoom in and zoom out at different places of the image. Just select the tool (in the toolbar on the left) and click on the image.
 Hand tool	The Hand tool allows you to move the view to different parts of the image. Choose the Hand tool in the toolbar, then click and drag on the image to navigate to other places



St Wilfrid's ICT Department Yr 8 Cycle 1 Digital Skills Knowledge Organiser

Core Knowledge

Keyword	Definition
Digital Graphics	Images created or edited using computer software
Raster Graphics	Pixel-based images that lose quality when scaled
Vector Graphics	Scalable images made from mathematical paths
Resolution	Amount of detail in an image (e.g., 1920x1080)
Pixels	Tiny coloured squares that form images
DPI	Dots per inch; measure of print quality

Editing Techniques

Keyword	Definition
Cropping	Removing unwanted parts of an image
Resizing	Changing image dimensions
Masking	Hiding/revealing parts non-destructively
Opacity	Transparency level
Blending Modes	How layers interact
Retouching	Improving image quality

Design Principles

Keyword	Definition
Composition	Arrangement of elements in a design
Balance	Distribution of visual weight
Contrast	Differences that make elements stand out
Hierarchy	Order of importance in design
Alignment	Lining up elements for structure
Repetition	Reusing styles for consistency
White Space	Empty space improving readability

File Types

Keyword	Definition
JPEG	Compressed image for photos
PNG	Supports transparency
GIF	Simple animation format
SVG	Scalable vector format
PSD	Editable Photoshop file
Exporting	Saving in suitable format

Colour & Typography

Keyword	Definition	Keyword	Definition
Colour Theory	Rules for combining colours effectively	Typography	Style and arrangement of text
RGB	Colour mode for screens	Font	Type/style of text
CMYK	Colour mode for printing	Kerning	Space between letters
Colour Palette	Set of colours used in a design		

Photopea Tools

Q1. What is Photopea?

Q2. What does the Brush tool do?

Q3. How does the Pencil tool differ from the Brush tool?

Q4. What does the Clone Stamp tool do?

Q5. What is the function of the Text Tool?

Q6. What is the purpose of the Zoom tool?

Digital Graphic Terminology

Q7. What are raster graphics?

Q8. What are vector graphics?

Q9. What does DPI stand for?

Q10. Which file format supports transparency?

Year 8: Fractions 1

By the end of the unit you should be able to:

- to write one quantity as a fraction of another
- to write an improper fraction as a mixed number and vice versa
- to find equivalent fractions and determine whether two fractions are equivalent
- to order fractions using a common denominator
- to write a fraction and mixed number in its simplest form
- to write any fraction as a decimal number using division
- to order fractions and decimals (positive and negative)

Simplifying fractions

We can **simplify** a fraction by dividing by the highest common factor (HCF) of the numerator and denominator.

The HCF of 18 and 24 is 6



Simplify $\frac{18}{24}$

$$\frac{18}{24} = \frac{3}{4}$$

÷ 6

Simplify $2\frac{18}{24}$

$$2\frac{18}{24} = 2\frac{3}{4}$$

simplest form

We can simplify the fraction part of the mixed number.



A fraction is in its **simplest form** when the only common factor of the numerator and denominator is 1.

Keywords:

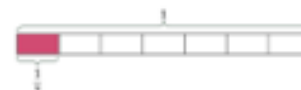
Fraction, Denominator, Numerator, Unit fraction, Proper fraction, improper fraction, Mixed number, Equivalent, Equivalent fraction, Common denominator, Simplify, Simplest form, Recurring

Representing fractions

A **fraction** represents a number of equal parts of a whole. The **denominator** tells us how many equal parts there are in the whole. The **numerator** tells us how many of those parts we are counting.



If the numerator is 1, it is a **unit fraction**.



If the numerator and denominator are equal, the fraction represents 1 whole.



We can describe one quantity as a fraction of another.



$\frac{4}{8}$ of the counters are blue.

$\frac{1}{8}$ of the counters are pink.

Improper fractions and mixed numbers

Comparing the numerator and denominator tells us if a fraction is less than, greater than or equal to 1 whole.

$\frac{3}{4}$ is a **proper fraction**.



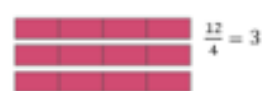
The numerator is less than the denominator. It is less than 1 whole.

$\frac{5}{4}$ is an **improper fraction**.



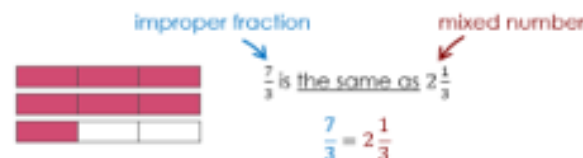
The numerator is greater than the denominator. It is greater than 1 whole.

$\frac{12}{4}$ represents an **integer**.



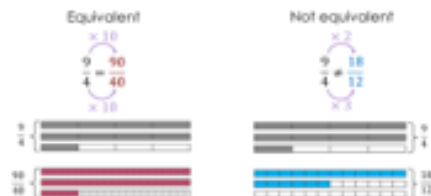
The numerator is a multiple of the denominator.

A **mixed number** is an integer and a proper fraction. We can write improper fractions as mixed numbers.



Equivalent fractions

Two fractions are **equivalent** if they represent the same part-whole relationship. We can find **equivalent fractions** by multiplying or dividing the numerator and denominator by the same number.



We can compare fractions to see if they are equivalent. We could multiply both the numerator and denominator by any number.

Comparing and ordering fractions

We can compare unit fractions by looking at the denominators.



We can compare fractions with the same numerator by looking at the denominators.



We can order fractions by rewriting them so they have **common denominators**.



Ordering fractions and decimals

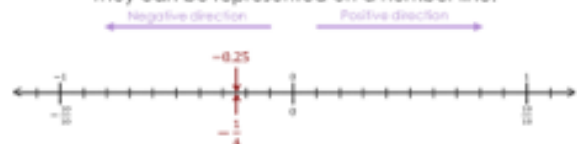
We can use fraction and decimal equivalents to make comparisons easier.

Which is bigger?

$\frac{4}{30}$ or 0.15



Fractions and decimals can be positive or negative. They can be represented on a number line.



Fractions and decimals

Fractions can be thought of as a division calculation.



1 divided into 4 equal parts.

We can use division to write fractions as equivalent decimals.

$$\frac{12}{25} = \frac{48}{100} = 48 \div 100$$



$$\frac{12}{25} = 0.48$$



3 divided into 4 equal parts.

We can use place value to write decimals as fractions.

Ones	Tenths	Hundredths	Thousandths
0	7	4	

$$0.74 = \frac{74}{100} = \frac{37}{50} \text{ (simplified)}$$

$\frac{3}{4}$ is also the same as 3 lots of $\frac{1}{4}$

Converting fractions to decimals

We can write any fraction as a decimal by performing a division calculation. We can write remainders as decimals by continuing the division process.

$$\frac{1}{2} = 1 \div 2$$

$$2 \overline{) 0.5}$$

$$\frac{1}{2} = 0.5$$

$$\frac{9}{8} = 9 \div 8$$

$$8 \overline{) 1.125}$$

$$\frac{9}{8} = 1.125$$

$\frac{9}{8}$ means 9 divided into 8 equal parts.

We can work out how many 8s are in 9

Sometimes, the decimal is a **recurring** decimal. We use dot notation to represent digits that repeat.

The dot goes above the first digit that repeats.

$$\frac{1}{6} = 1 \div 6$$

$$6 \overline{) 0.1666}$$

$$\frac{1}{6} = 0.1\dot{6}$$

$$\frac{5}{27} = 5 \div 27 = 0.1851851851$$

$$\frac{5}{27} = 0.18\dot{5}$$

If there is more than 1 digit that repeats, we put dots above the first and last digit that repeat.

Year 8 Fractions 1 Homework Questions

1 What fraction of each shape is shaded?



2 Write the fraction of the shapes that is shaded.



3 Fill in the gaps.

a) $\frac{2}{9} = \frac{\square}{18}$

b) $\frac{3}{\square} = \frac{6}{4}$

4 Insert the correct symbol between the fractions (<, > or =).

a) $\frac{4}{9}$

$\frac{7}{9}$

b) $\frac{2}{5}$

$\frac{2}{7}$

c) $\frac{5}{6}$

$\frac{3}{4}$

5 Write each of the fractions in its simplest form.

a) $\frac{12}{30}$

b) $\frac{32}{6}$

c) $\frac{25}{80}$

6 Write these fractions as decimals.

a) $\frac{2}{10}$

b) $\frac{7}{20}$

c) $\frac{35}{50}$

d) $\frac{9}{4}$

Year 8 Fractions 2

By the end of the unit you should be able to:

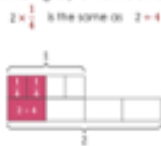
- to add and subtract with fractions (proper and improper) and mixed numbers
- to add and subtract fractions (proper, improper and mixed numbers) by converting to decimals
- to multiply fractions by integers
- to multiply two fractions, mixed numbers and improper fractions
- to multiply two decimals by using related facts and by writing them as fractions
- understand dividing by a fraction is the same as multiplying by its reciprocal
- Understand dividing by a fraction is the same as multiplying by its reciprocal
- to divide an integer and a fraction by a fraction (including mixed numbers and improper fractions)
- to solve problems involving combinations of fractions and the four operations
- to use a calculator to calculate with proper and improper fractions using the four operations

Reciprocals

In the reciprocal of a number, the numerator and denominator change places. The product of a number and its reciprocal is 1.

Number	Reciprocal	Product
$\frac{3}{4}$	$\frac{4}{3}$	$\frac{3}{4} \times \frac{4}{3} = \frac{3 \times 4}{4 \times 3} = \frac{12}{12} = 1$
$\frac{5}{6}$	$\frac{6}{5}$	$\frac{5}{6} \times \frac{6}{5} = \frac{5 \times 6}{6 \times 5} = \frac{30}{30} = 1$
$\frac{1}{2}$	2	$\frac{1}{2} \times 2 = \frac{1 \times 2}{2 \times 1} = \frac{2}{2} = 1$
$\frac{1}{17}$	17	$\frac{1}{17} \times 17 = \frac{1 \times 17}{17 \times 1} = \frac{17}{17} = 1$

Dividing by a number is the same as multiplying by its reciprocal.



$2 \div \frac{1}{2}$ can be written as 'how many $\frac{1}{2}$'s in 2?

Keywords:

Denominator

Numerator

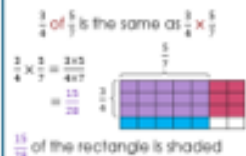
Reciprocal

Proper fraction

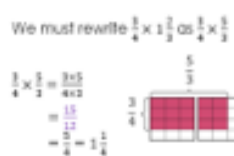
Improper fraction

Multiplying fractions

To multiply fractions, we multiply the numerators together and the denominators together.



We must convert mixed numbers to improper fractions before multiplying.



Adding and subtracting fractions (different denominators)

If two fractions have different and unrelated denominators, both need to be rewritten using equivalent fractions with the lowest common denominator.

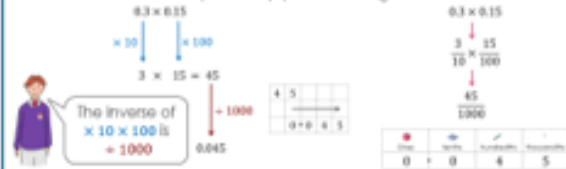


Mixed numbers should be converted to improper fractions with the lowest common denominator before adding or subtracting.



Multiplying decimals

We can use related facts or fraction and decimal equivalents to help us multiply decimals together.



Dividing with fractions

A division calculation can be rewritten using multiplication and reciprocals. Dividing by a number is the same as multiplying by its reciprocal.



Dividing by a proper fraction increases the value.

We need to write any mixed numbers as improper fractions first.

Using a calculator with fractions

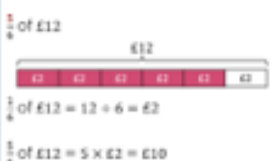
We can calculate with fractions and decimals using the fraction and mixed number keys on our calculator.



We can change the format of our answer by navigating through the menu.

Fractions of amounts

To find a proper or improper fraction of an amount, we need to find the value of 1 unit.



We can rewrite fractions of an amount by writing both parts as fractions and multiplying them together.



Adding and subtracting fractions (by converting to decimals)

Writing fractions as equivalent decimals can make calculations easier.



Year 8 Fractions 2 Homework Questions

- Work out $1 - \frac{2}{11}$
- Work out the calculations below, giving your answer as a mixed number in simplest form.
 - $\frac{5}{6} + \frac{3}{8}$
 - $\frac{4}{5} - \frac{2}{7}$
- Work out each calculation by converting to decimals:
 - $\frac{3}{4} + \frac{7}{10}$
 - $1\frac{1}{4} + 2\frac{1}{10}$
- Work out. Simplify if possible.
 - $\frac{1}{3}$ of 18
 - $\frac{3}{8} \times 2$
- Work out. Simplify if possible
 - $\frac{3}{4} \times \frac{5}{6}$
 - $\frac{4}{5} \div \frac{3}{4}$
- What is the reciprocal of
 - $\frac{5}{6}$
 - $\frac{7}{3}$
 - $\frac{1}{9}$
 - 4

Year 8 Ratio and Proportion

By the end of the unit, you should be able to:

- to represent a 2 or 3 part ratio as a diagram, labelling what each part of the ratio represents
- to write each part of a ratio as a fraction of the whole amount (including simplifying the resulting fractions)
- Understand that equivalent ratios can be created by multiplying or dividing each part of the ratio by the same number
- to write a ratio in its simplest form including involving decimals by dividing all parts by their highest common factor (HCF)
- to write a ratio as a unit ratio (1:n or n:1)
- to find the cost per item to make comparisons in best buy problem
- to convert between related standard metric measures
- to use scale diagrams and maps, where the scale is given as a ratio, to interpret real-life dimensions/distances and vice versa
- to divide a given quantity into 2 or 3 parts in a given ratio
- to find the value of the whole amount or another part from a given part of a ratio
- to solve ratio problems where we are given the difference between the value of parts
- to solve proportion problems involving combinations of fractions and ratios in context

Unit ratios

A unit ratio is a ratio where at least one part is 1

We say the ratio is in the form 1 : x or x : 1

To write a ratio as a unit ratio, we divide each part of the ratio by the value of the part that we want to become 1.

Write the ratio 2 : 8 in the form 1 : x

$$\div 2 \left(\begin{array}{l} 2 : 8 \\ 1 : 4 \end{array} \right) \div 2$$

Simplifying ratios

A ratio is in its simplest form if the parts are integers and have no common factors.

We can simplify a ratio by dividing by the highest common factor (HCF) of the parts.

Write 6 : 30 in its simplest form.

HCF of 6 and 30 is 6.

$$\div 6 \left(\begin{array}{l} 6 : 30 \\ 1 : 5 \end{array} \right) \div 6$$

If any of the parts of a ratio are decimals, simplest form means finding an equivalent ratio with integer parts.

Write 2.4 : 1.6 in its simplest form.

$$\begin{array}{l} \times 10 \left(\begin{array}{l} 2.4 : 1.6 \\ 24 : 16 \end{array} \right) \times 10 \\ \div 8 \left(\begin{array}{l} 24 : 16 \\ 3 : 2 \end{array} \right) \div 8 \end{array}$$

Keywords:

- Ratio
- Colon
- Part(s)
- Proportionality
- Equivalent ratio
- Unit ratio
- Equivalent
- Metric measures
- Unit
- Prefix(es)
- Scale diagram
- Scale
- Share

Introduction to ratio

A ratio tells us about the multiplicative relationship between 2 or more quantities.

Each value in a ratio represents a 'part'.

Ratios are written using colons (:).

The parts added together – the total – represent the 'whole'.

The ratio of blue to red is 8 : 3



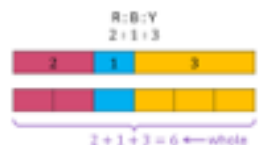
8 : 3
8 : 3

part
8 : 3
4 : 8
whole



Ratios and fractions

We can write each part of a ratio as a fraction of the whole amount.



The whole is the denominator, and the parts are the numerators in each fraction.

$\frac{2}{6} = \frac{1}{3}$ are red $\frac{1}{6}$ is blue

$\frac{3}{6} = \frac{1}{2}$ are yellow

$\frac{3}{4}$ of a packet of sweets are strawberry flavoured and the rest are lemon. What is the ratio of lemon to strawberry sweets?

We can represent a part-whole relationship given as fractions as a ratio.

$\frac{3}{4}$ strawberry, $\frac{1}{4}$ lemon
1 : 5
1 : 3



Equivalent ratios

We can create equivalent ratios by multiplying or dividing each part of the ratio by the same number.

We can find equivalent ratios where one value is missing by working out the scale factor.

$$\div 4 \left(\begin{array}{l} 4 : 8 \\ 1 : 2 \end{array} \right) \div 4$$

$$\times 1.5 \left(\begin{array}{l} 4 : 8 \\ 6 : 12 \end{array} \right) \times 1.5$$

$$\times ? \left(\begin{array}{l} a : b \\ 4 : 7 \\ 8 : \dots \end{array} \right) \times ?$$

$$a : b \\ 8 : 14$$

Sharing in a ratio (1)

To share an amount in a ratio, we need to know the total number of equal parts in the whole.

Declan and Antoni share £14 in the ratio 5 : 2
How much does each person get?

$5 + 2 = 7$ parts in total

$£14 \div 7 = £2$ per part



$$\times £2 \left(\begin{array}{l} 5 \times 2 \\ £10 : £4 \end{array} \right) \times £2$$

When given the value of one part of a ratio, we can work out the other part and the whole amount.

Declan and Antoni share some money in the ratio 5 : 2
Antoni gets £30. How much does Declan get?

Antoni has £30 and 5 parts

$£30 \div 5 = £6$ per part



$$\times £6 \left(\begin{array}{l} 5 \times 2 \\ £30 : £12 \end{array} \right) \times £6$$

Sharing in a ratio (2)

Given the difference between parts of the ratio, we can work out each part.

Declan and Antoni share some money in the ratio 5 : 2
Antoni gets £6 more than Declan.
How much does Declan get?

There are some yellow and blue counters in a bag.

The ratio of yellow to blue counters is 1 : 3

There are 20 counters in the bag.

How many counters are blue?



The ratio of yellow to blue counters is 1 : 3

There are 9 blue counters.

How many counters are in the bag?



The ratio of yellow to blue counters is 1 : 3

There are 8 more blue counters than yellow counters.

How many counters are blue?



Best buys

We can compare deals more easily by finding the cost of one item.

Which is better value for money?



number of cupcakes $\leftrightarrow$ cost

$$\begin{array}{l} 8 \leftrightarrow £6 \\ \div 8 \left(\begin{array}{l} 1 \leftrightarrow £0.75 \end{array} \right) \div 8 \end{array}$$



number of cupcakes $\leftrightarrow$ cost

$$\begin{array}{l} 5 \leftrightarrow £4 \\ \div 5 \left(\begin{array}{l} 1 \leftrightarrow £0.80 \end{array} \right) \div 5 \end{array}$$

Scale diagrams and maps

In a scale diagram something is drawn accurately, but to a different size. The scale tells us how much bigger or smaller something is in real life, compared to the diagram.

Scale drawing

1 : 50



Real life



drawing : real life

$$\times 10 \left(\begin{array}{l} 1 : 50 \\ 10 \text{ cm} : 500 \text{ cm} \end{array} \right) \times 10$$

We can work out the scale if we know the measurements in real life and in the scale diagram.

The scale is most useful when given as a unit ratio.

diagram : real life

$$\div 6 \left(\begin{array}{l} 12 \text{ cm} : 6 \text{ m} \\ 2 \text{ cm} : 1 \text{ m} \end{array} \right) \div 6$$

unit ratio

Metric conversions

Metric measures use the decimal number system. It is important to write the unit when using measures. Units have **prefixes** that tell us about their size.



$$100\,000 \text{ mg} = (10\,000 \text{ cg}) = 100 \text{ g} = 0.1 \text{ kg}$$

Change 2.4 kilograms to grams.

We can use scaling to help us solve metric measures problems.

$$\times 2.4 \left(\begin{array}{l} 1 \text{ kg} = 1000 \text{ g} \\ 2.4 \text{ kg} = 2400 \text{ g} \end{array} \right) \times 2.4$$

Year 8 Ratio Homework Questions

- The ratio of stars to triangles is :
☆☆☆
▼▼▼
- The ratio of blue beads to red beads is 3:7. What fraction of the beads are red?
- Fill in the gaps to give equivalent ratios.
a) 5 : 2 is the same as 15 : b) 3 : is the same as 12 : 4
- Write 48 : 36 in its simplest form
- Write the ratio 5 : 30 as a unit ratio in the form 1 : n
- Share £64 in the ratio 3 : 5
- The ratio of red to blue counters is 3 : 7
There are 6 red counters. How many counters are in the bag?
- A scale diagram is drawn with a scale of 1 : 20
In the drawing, the height of a building is 10 cm.

Year 8 Representing Data

By the end of the unit, you should be able to:

- to interpret and organise a set of data in a tally chart
- to identify types of data as qualitative or quantitative
- to read and interpret ungrouped and grouped data from a frequency table
- to interpret data from a bar chart (single and dual) by comparing frequencies
- to draw or complete a bar chart (single or dual) from given data
- to read and interpret data from a pictogram.
- to complete a pictogram from given information.
- to read, interpret and draw a pie chart
- to convert between measures of time
- to solve problems involving time in real-life contexts including using timetables

Keywords:

- Data
- Qualitative
- Quantitative
- Numerical
- Tally chart
- Frequency
- Frequency tables
- Interpret
- Grouped frequency table
- Class width
- Bar chart
- Axes
- Dual bar chart
- Category
- Equal widths
- Equal gaps
- Equal steps
- Pictogram
- Symbols
- Key
- Pie chart
- Sectors
- interval
- Timetable

Interpreting frequency tables

Frequency tables make data easier to interpret.

Favourite fruit	Frequency
apple	4
banana	1
cherry	3
dragon fruit	2



When the data is in the table it's easy to see that the most common favourite fruit was an apple.

A grouped frequency table helps organise data into groups.

We can group items depending on their value.

the class width for each group is the difference between the biggest and smallest number

Number of pages	Frequency
1 - 50	12
51 - 100	7
101 - 150	21
151 - 200	5
201 - 250	11
251 - 300	4

Pictograms

A pictogram uses symbols to represent data.

Type of message	Tally	Frequency
Voice		4
Email		2
Text		4



I can represent the data using a pictogram. Each square represents one message.

Voice	□ □ □ □
Email	□ □
Text	□ □ □ □

A pictogram has a key which tells us what one symbol represents.

Key: □ = 2 messages

Type of message	Tally	Frequency
Voice		4
Email		2
Text		4

Voice	□ □ □ □
Email	□ □
Text	□ □ □ □

Half a circle represents 1 message.



Collecting and recording data

Data are pieces of information. Data can be qualitative or quantitative. We can use a tally chart to organise data.

Eye colour	Tally	Frequency
Brown		4
Blue		4
Green		2
Hazel		4

the frequency tells us how many times something occurs.



Eye colour is qualitative. You can't have an eye colour made of numbers.



We group tally lines in fives to make it easier to count.

Each tally line in the table represents a single piece of data.



Drawing pie charts

We can use the total frequency to work out sector angles in a pie chart. Work out the size of the angle 'pink' would be on a pie chart.

Colour	Frequency
pink	5
red	15
blue	10
green	30
Total	60

$$\begin{aligned} 60 \text{ pens} &\leftrightarrow 360^\circ \\ 1 \text{ pen} &\leftrightarrow 6^\circ \\ 5 \text{ pens} &\leftrightarrow 30^\circ \end{aligned}$$

A protractor should be used to draw a pie chart accurately.

- Place your protractor with the centre of the circle so the vertical line lies along the zero line.
- Mark the size of the first angle in the frequency table with a dash at the edge of the protractor.
- Draw a line from the centre of the circle to the edge of the circle to complete the angle.
- Label the angle and the sector.
- Place the protractor on the line that has just been drawn
- Repeat until pie chart is completed

Time

We can convert between measures of time.



We can write measures of time as fraction and decimal amounts.

Write 0.5 of an hour in minutes.

An hour contains 60 minutes.

1 hour $\leftrightarrow$ 60 mins

0.5 hour $\leftrightarrow$ 30 mins

Write 12 hours as a fraction of a day.

A day contains 24 hours

$$\frac{12}{24} = \frac{1}{2}$$

The verbs apprendre, comprendre, prendre (singular)

These three verbs all work like this in the present tense:

These verb forms all sound the same! The -s on the je and tu forms is a silent final consonant (SFC).	apprendre - to learn, learning
j'apprends	I learn, I am learning
tu apprends	you learn, you are learning
il apprend	he learns, he is learning
elle apprend	she learns, she is learning

Intonation questions (revision)

In French, change a statement into a question by raising your voice at the end:

Statement	Tu comprends. You understand.
Question	Tu comprends ? Do you understand?

Subject-verb inversion questions

To ask a question, we can also swap the subject and the verb around:

Question	Comprends-tu ? Do you understand?
Swapping round the subject and verb is called inversion. We add a hyphen between them.	

There are no question words for 'do' and 'are' in French! Inversion tells us these are questions.

Tip

Week 01 - Asking questions

Vocabulaire

vb	apprendre	to learn, learning
vb	j'apprends	I learn, I am learning
vb	tu apprends	you learn, you are learning
vb	il apprend	he learns, he is learning
vb	elle apprend	she learns, she is learning
vb	comprendre	to understand, understanding
vb	je comprends	I understand, I am understanding
vb	tu comprends	you understand, you are understanding
vb	il comprend	he understands, he is understanding
vb	elle comprend	she understands, she is understanding
vb	prendre	to take, taking
vb	je prends	I take, I am taking
vb	tu prends	you take, you are taking
vb	il prend	he takes, he is taking
vb	elle prend	she takes, she is taking
nf	une erreur	mistake
adj	facile	easy



Using the verbs dire, venir, sortir (singular)

In English, we can't use the verbs 'say' or 'tell' on their own in a sentence. You have to say something or tell something.

In French, the verb dire works in the same way:

Elle dit la phrase. She says the sentence.
Elle dit la vérité. She tells the truth.

We call these words the object; they 'receive' the action of the verb.

Verbs that need an object are called transitive (vt). Verbs that don't need an object are called intransitive (vi).

dire - to say, tell	venir - to come	sortir - to go out
je dis	je viens	je sors
tu dis	tu viens	tu sors
il dit	il vient	il sort
elle dit	elle vient	elle sort

This -s, -s, -t, -t pattern of endings is common in irregular French verbs!

venir - note the change from 'e' to 'ie' in the stem.

Saying 'of' and 'from' in French

Remember! To say 'of' in French, we use the preposition de:

Je travaille à l'université de Paris. I work at the University of Paris.

This preposition can also mean 'from':

Je viens de Paris. I come from Paris.

Subject-verb inversion questions with 'il' and 'elle'

Il dit la vérité. He's telling the truth. Don't pronounce the 't' → SFC

Dit-il la vérité ? Is he telling the truth? Pronounce the 't' here!

Prépare-t-il le déjeuner ? Is he preparing lunch? When verbs end in a vowel, add a 't' between two hyphens!

A-t-elle une voiture ? Does she have a car?

Week 02 - Asking questions [2]

Vocabulaire

vb	dire	to say, tell
vb	je dis	I say, I tell
vb	tu dis	you say, you tell
vb	il dit	he says, he tells
vb	elle dit	she says, she tells
vb	sortir	to go out, going out
vb	je sors	I go out, I am going out
vb	tu sors	you go out, you are going out
vb	il sort	he goes out, he is going out
vb	elle sort	she goes out, she is going out
vb	venir	to come, coming
vb	je viens	I come, I am coming
vb	tu viens	you come, you are coming
vb	il vient	he comes, he is coming
vb	elle vient	she comes, she is coming
nf	la vérité	truth
adj	important(e)	important (m/f)
prep	de	of, from



Revisit vocab 2.2.4 & 2.1.3



Developing my vocabulary Page 1:

	Word	English meaning
1	apprendre	
2	j'apprends	
3	tu apprends	
4	il apprend	
5	elle apprend	
6	comprendre	
7	Je dis toujours la vérité	
8	Il dit une chose importante -	
9	Je viens de Gateshead	
10	Il vient souvent avec un ami	
11	Elle sort rarement au parc	
12	She says a funny thing	

Question words with subject-verb inversion

Remember, to form a question, we can swap the pronoun and the verb:

Comprends-tu ? Do you understand?

These questions are asking for a yes/no answer.

As-tu la réponse ? Do you have the answer?

We can also add a question word at the beginning of the question:

Que comprends-tu ? What do you understand?

Combien de réponses as-tu ? How many answers do you have?

These questions are asking for information.

When we do this, we also need the pronoun-verb swap!

Remember, we can also use the question word after the verb and raise your voice:

Tu vas quand en vacances ? When are you going on holiday?

Quand vas-tu en vacances ? When are you going on holiday?

The meanings are the same in English.

Saying 'what' in French

We have seen that the words *quoi* and *que* both mean 'what'.

We use *quoi* when making a question with raised intonation:

Tu fais quoi ce weekend ? What are you doing this weekend?

We use *que* when making a question with inversion:

Que fais-tu ce weekend ? What are you doing this weekend?

Week 03 - Using question words and inversion

pron	que?	what?
nf	la langue	language
nm	les maths	maths
nf	la matière	subject
nf	la musique	music
nf	la science	science
nf	la technologie	technology, DT
adj	quel?	which? (m)
adj	quelle?	which? (f)
adv	combien?	how much? / how many?

Vocabulaire



Revisit vocab 2.2.5 & 2.1.4

Question words

où ? - where?

quoi ? que ? - What?

qui ? - who?

quel ? quelle ? - which?

combien (de) ? - how much? how many?

comment ? - how?

quand ? - when?

pourquoi ? - why?

Negation - ne...pas

In English

I speak. I do not speak.

Add 'do not' before the verb.

C'est facile. Ce n'est pas facile.

Eile a la réponse. Eile n'a pas la réponse.

In French

Je parle. Je ne parle pas.

Add 'ne' before and 'pas' after the verb.

In front of a vowel ne → n'

Similar to je → j', or le → l'

Plural noun?

Change 'des' for 'de'

Plural noun becomes singular.

Negation - before a noun

J'ai un train. Je n'ai pas de train.

J'ai des trains. Je n'ai pas de trains.

Add ne...pas as normal. Change 'un' for 'de'.

Change 'des' for 'de'

Plural noun becomes singular.

Saying people do not do something

Vocabulaire

Revisit vocab 3.1.1 & 2.2.1

11

Week 05 Being Healthy

Verbs (38)	Adjectives (21)
Adverbs / Interjections (20)	Conjunctions (34)

Je suis Madame Wood. Je suis assez intelligente mais trop petite. Je pense que suis une personne saine. Je ne fume pas car c'est vraiment malsain. Fumer est mauvais pour le corps! Aussi je dors toujours bien. Dormir pour huit heures par jour est très bon pour la santé. Pourtant je ne fais pas l'exercice. Je voudrais jouer au foot car c'est bon pour le cœur et l'esprit.

Being healthy

Adv	souvent	often
Con	pourtant	however
Adj	sain	healthy
Nf	La santé	health
Nm	Le corps	body
Nm	L'esprit	mind
Nf	Heure	hour
Prep	Par	by
Adj	malsain	unhealthy
Vb	Fumer	To smoke / smoking
Nm	En bonne forme	In good shape
Nm	Le cœur	heart

Vocabulaire

Developing my vocabulary Page 2:

	Sentences:
1	Que fais-tu?
2	Quelle langue étudies-tu?
3	Quel prof aimes-tu?
4	Combien de matières as-tu?
5	Quel film regardes-tu?
6	Je dors souvent dans le lit
7	Je ne dors pas sous le bureau
8	Je comprends parfois le français
9	Je joue dans une équipe
10	Je n'ai pas la télé sur le bureau
11	Je pense que je suis une personne saine
12	Je dors 8 heures par jour
13	Je ne fume pas
14	C'est malsain
15	Je suis en bonne forme

Week 06 Saying what there is / isn't Grammaire

Saying what you don't have

Remember, to say you have something, we use **avoir** + **infinitive verb** + noun.

J'ai une sœur. I have a sister.
Tu as des idées. You have some ideas.

To say you don't have something, we use **ne pas avoir** + **infinitive verb** + noun.

Je n'ai pas de sœur. I don't have a sister.
Tu n'as pas d'idées. You don't have any ideas.

Remember, to say 'there is/are' in French, we use **il y a** + **infinitive verb** + noun.

Il y a un parc. There is a park.
Il y a des solutions. There are some solutions.

To say 'there isn't/aren't', we use **il n'y a pas** + **infinitive verb** + noun.

Il n'y a pas de parc. There isn't a park.
Il n'y a pas de solutions. There aren't any solutions.

Saying people do not do something Vocabulaire

vb	Il y a	There is
vb	Il n'y a pas	There isn't
nm	le café	café
nm	le cinéma	cinema
nf	la plage	beach
nf	la rue	street
prp	derrière	behind
prp	devant	in front of
prp	entre	between

Week 07 Adjectives that go before the noun Grammaire

Adjectives that go before the noun

As you know, many adjectives go after the noun, in French:

une maison moderne a modern house
une voiture rapide a fast car

However some adjectives come before the noun. These adjectives refer to **SIZE** or **GOODNESS**:

une belle maison a beautiful house
une vieille église an old church
un bon pont a good bridge
un petit bâtiment a small building

B beauty
A age
G goodness
S size

Remember! Before or after the noun, adjectives still need to match the noun they describe: *une nouvelle voiture, un nouveau vélo.*

Describing more things and people Vocabulaire

nm	le bâtiment	building
nf	l'église (f)	church
nm	le pont	bridge
adj	belle	beautiful (f)
adj	énorme	enormous
adj	haut	high
adj	nouveau	new (m)
adj	nouvelle	new (f)
adj	vieille	old (f)
adj	vieux	old (m)

T3.2 Semaine 1 & 2: Revision and assessment

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Week 08 Using aller + infinitive to say what you are going to do Grammaire

Using aller + infinitive to say what you are going to do

To state a future intention, use the present tense of **aller** plus an infinitive verb:

aller - to go, going

je vais	I go, I am going
tu vas	you go, you are going
il va	he goes, he is going
elle va	she goes, she is going

Which form of the English present of 'go' do we use for future intentions? The simple present or the present continuous?

Je vais devenir prof. I am going to become a teacher.
Tu vas partir en retard. You are going to leave late.
Il va continuer. He is going to continue.
Elle va gagner le match! She is going to win the match!

Expressing future intentions Vocabulaire

vb	continuer	to continue, continuing
vb	devenir	to become, becoming
vb	partir	to leave, leaving
nf	madame	Miss, Mrs, Ms, madam
nm	le match	match
nm	monsieur	Sir, Mr
adv	encore	again
adv	en retard	late
adv	tôt	early

Week 09 Future plans Grammaire

Future plans

Future tense (E) **Present tense (E)**

Adjective / Adverb (E) **Connective (E)**

Time phrases (E) **Reason (E)**

Normalement le weekend, je joue au parc avec mes amis car j'aime être dehors. Pourtant il fait parfois mauvais. Aussi, j'aime faire les devoirs à la maison car je suis une personne vraiment intelligente.

Le weekend prochain, mes projets sont étonnants! Le matin, je vais faire de la natation avec mes amis car j'adore ça! Puis, je vais faire les magasins en ville avec ma famille puisque ma ville est très jolie! Finalement, le soir, nous allons manger au restaurant français. Je pense que ça va être relaxant mais assez cher.

Future plans Vocabulaire

Adv	Prochain	next
Nm	Un projet	plan
Nm	Le matin	morning
Nm	Le soir	evening
Con	Puisque	since
Vb	boire	To drink / drinking
Adj	relaxant	relaxing
adj	ludique	fun
Adj	étonnant	amazing
Adj	joli	pretty
Nf	La natation	swimming

T3.2 Semaine 1 & 2: Revision and assessment

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Week 10 Using aller + infinitive to express future intentions (plural) Grammaire

Using aller + infinitive to express future intentions (plural)

verb ALLER [to go, going]	
nous allons	we go / we are going
vous allez	you (all) go / you are (all) going
ils vont	they go / they are going (male/mixed)
elles vont	they go / they are going (all female)

Remember: 'nous allons' and 'vous allez' sound like one word - as the next word starts with a vowel, pronounce the final 's', but like a 'z'!

Nous allons écrire une lettre. We are going to write a letter.
Vous allez visiter Berlin. You are all going to visit Berlin.
Ils vont apprendre l'allemand. They are going to learn German.
Elles vont aller en Italie. They are going to go to Italy.

More future intentions Vocabulaire

nm	l'allemand (m)	German
nm	l'avion (m)	aeroplane
nf	la lettre	letter
nf	Italie	Italy
adj	différent(e)	different (m/f)
adj	prochain(e)	next (m/f)
adv	bientôt	soon
adv	demain	tomorrow

Developing my vocabulary Page 3:

	Sentences:
1	Il y a une plage à South Shields
2	Il n'y a pas d'école ici
3	Il n'y a pas de cinéma devant le café
4	Il y a une rue agréable derrière le magasin
5	Il y a un vieux bâtiment
6	Il y a une belle Église
7	Il y a un haut pont
8	Il y a un nouveau professeur à l'école
9	Je vais devenir professeur
10	Tu vas regarder le match
11	Je vais encore au parc
12	Il va continuer les sciences à l'université
13	Nous allons étudier l'allemand
14	Ils vont prendre l'avion
15	Elles vont écrire une lettre
16	Vous allez aller en Italie

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Year 8 Module 1 Knowledge Organiser

Western Classical Music

What is Classical Music?

Classical music is a **genre** of music that covers a long era of time; from the early **1500s** through to the **present day**! There are lots of subsections of this genre, but the overarching term is "Classical." We will learn about three periods of classical music – **Baroque**, **Classical** and **Romantic**.



The reason it is so important is that it has been at the heart of the **development** of music for so long. The pop songs, tik toks and rock bands that make our music in the present day wouldn't **EXIST** if it wasn't for Classical music. It is particularly famous for its well-known **melodies**, **musical structures** and its use of **traditional notation**.



Texture

How layers of music are described.

Monophonic = one part

Homophonic (chordal) = many instruments playing the same rhythm but different notes

Melody and accompaniment = a clear melody (tune) and other instruments are the accompaniment (backing)

Polyphonic = several melodies played at once.

Dynamics

Abbreviation	Full word (Italian)	Definition
<i>pp</i>	Pianissimo	Very soft
<i>p</i>	Piano	Soft
<i>mp</i>	Mezzo-piano	Medium soft
<i>mf</i>	Mezzo-forte	Medium Loud
<i>f</i>	Forte	Loud
<i>ff</i>	Fortissimo	Very Loud
	Crescendo	Gradually Louder
	Decrescendo	Gradually Softer

Dynamics are how loud and quiet the music is.

You should try to describe how dynamics change overtime and the effect this has on the music.

Instrumentation



The orchestra has grown and developed over many years. In the **Baroque period** the orchestra mainly consisted of string instruments with a few other important additions such as the harpsichord, flutes oboe and trumpet. In the **Classical period** the orchestra grew bigger, and more instruments including the clarinet and piano were added. The **Romantic period** includes a much bigger brass and percussion section.

Note Reading

Treble Clef Notes

Line Notes: E F G A B C D E F
Space Notes: F A C E

We have already looked at and used the notes of the treble clef:

These notes are used to represent **higher pitched** notes, but we also need to understand how to read, perform and compose with **lower pitched** notes.

Remember the five lines that we use are called **the staff**, and now we are going to place a **bass clef** symbol at the start of the staff.

Bass Clef Notes

Line Notes: G A B C D E F G A
Space Notes: A C E G

of the note names of the notes of the bass clef:

1. What year did Classical music begin? _____
2. Name the three periods we will learn about in classical music. _____
3. What does texture in music describe? _____
4. What does polyphonic mean? _____
5. What texture describes just one part played on its own? _____
6. What do dynamics in music describe? _____
7. What happened to the size of the orchestra overtime? _____
8. What is a melodic device? _____
9. What is a motif? _____
10. When a melody moves up and down by half steps this is called _____
11. Name these bass clef notes

12. Name these bass clef notes

Melody A melodic device is where we can use a specific process to extend, improve or change an existing melody.

Motif – a short melody that recurs in a piece of music

Triadic - where the melody is based on the notes of the triad (a three-note chord)

Scalic - Where the melody includes passages where the notes move up or down in a stepwise motion.

Chromatic – where the melody moves up or down by a half step/semitone. From the Greek 'chroma' meaning colour.

Knowledge Organiser - Year 8 - Football

YEAR 8 CURRICULUM FOCUS: **PRECISION**

Precision: "Perform the components of skills and refine the techniques for accuracy."

Skill	Key teaching points To perform each skill with PRECISION you must ...	Skill	Key teaching points To perform each skill with PRECISION you must ...
Side Foot Pass	- Place your non kicking foot by the side of the ball in the direction you want the ball to go. - Place your arms out for balance, head still and eyes on the ball. - Lean your upper body slightly over the ball and swing your leg at the ball, making contact with the side of the foot. - Follow through with your kicking leg in the direction you want the ball to go.	Shooting	- Place your non kicking foot by the side of the ball in the direction you want the ball to go. - Place your arms out for balance, head still and eyes on the ball. - Lean your upper body slightly over the ball to keep it low for the bottom corners and swing your leg at the ball, making contact with the laces. - Follow through with your kicking leg, aiming for the bottom corners across the goalkeeper where the biggest space in the goal is.
Long/Drill Pass	- Place your non kicking foot by the side of the ball in the direction you want the ball to go. - Place your arms out for balance, head still and eyes on the ball. - Lean upper body slightly over the ball to keep the ball low or slightly back to gain height and swing your leg at the ball, making contact with the instep/laces. - Follow through with your kicking leg, making contact in the middle of the ball to drill it or slightly under the ball to gain height.	Dribbling	- Keep the ball close to your feet in tight areas and further away when running into space, using both feet. - Keep your arms out for balance with your body leaning slightly over the ball. - Keep your head up so you can clearly see the direction you would like to travel with the ball.
Attacking Heading	- Keep your eyes focused on the ball and move into the line of flight. - Use neck muscles for power and your forehead to direct the ball up. - Head the bottom of the ball to force it high away from your goal. - Keep your arms out for balance and to keep opposition players away.	Defensive Heading	- Keep your eyes focused on the ball and move into the line of flight. - Use neck muscles for power and your forehead to direct the ball up. - Head the bottom of the ball to force it high away from your goal. - Keep your arms out for balance and to keep opposition players away.

Basic rules	Explanation
Foul	A foul is awarded if a player commits an offence against an opponent in a manner considered by the referee to be careless, reckless or using excessive force, e.g. kicking/tripping an opponent.
Offside	A player is in an offside position if any part of the head, body or feet is in the opponents' half and nearer to the opponents' goal line than both the ball and the second last defender. Arms are not considered.





Knowledge organiser - Year 8 - Handball



YEAR 8 CURRICULUM FOCUS: PRECISION

Precision: “Perform the components of skills and refine the techniques for accuracy”.

Skill	Key teaching points To perform each skill with <u>PRECISION</u> you must ...	Skill	Key teaching points To perform each skill with <u>PRECISION</u> you must ...
Passing	Passing : Hands in a W when holding/receiving the ball. Extend arms, flick wrists and follow through in the direction that you want the ball to travel.	Attacking Team Play	Attacking team play: Move into space, draw defenders outwards, be ready to shoot, use deception to try and attempt a shot at goal.
Dribbling	Dribbling: Push the ball down using the fingertips, extend the shoulder and elbow, flex the wrist , keep head up, ball slightly out in front and absorb impact with your fingertips.	Defending	Defending: Hands and arms up, on balls of the feet, closing any gaps before opponent gets opportunity to shoot. Goalkeeping: stay on ball of the feet, low stance (centre of gravity), arms extended and head up.
Shooting	Shooting: Take non-shooting hand off the ball. Jump in the air while raising shooting arm up and back to make an L, or 90-degree angle. Rotate shoulders square to the goal throwing arm forward. Land on take off foot.	PRECISION	To perform each skill with <u>precision</u> .You must try to perform the components of skills and refine the techniques for accuracy, i.e. trying to perform a dribble using teaching points highlighted with a focus on being precise and accurate with the execution.

Basic rules	Explanation
Dribbling and movement	Once a player receives possession, they can pass, hold possession or shoot. If a player holds possession, they can dribble or take three steps for up to three seconds without dribbling.
Court	Only the goalkeeper is allowed within the goal area D.



Health Related Fitness (HRF)

Component of Fitness	Training Method
Muscular Endurance	Circuit Training - A range of different exercises are used to train different muscles. Exercises are also selected which are relevant to specific sports. - Each exercise is performed a certain number of times or for a specific length of time before moving to the next exercise.
Speed	Interval Training - A short, high intensity work period followed by a rest period. Hollow Sprints - Sprints followed by a period of walking/jogging and so on. Acceleration Sprints - The pace is gradually increased from a standing start to jogging, then to striding, and then to a maximum sprint.
Power	Plyometrics - Plyometric exercises require maximal force and these types of exercises include lunging, bounding, incline press ups, barrier hopping and jumping. - Exercises should be selected which are relevant to specific sports.
Aerobic Endurance	Interval Training - An individual performs a work period followed by a recovery period. Typical work time can vary from 30 seconds to five minutes; recovery periods can be complete rest, walking or light jogging. Fartlek Training - The training is continuous with no rest period and the intensity of training is varied by running at different speeds or over different terrain (surface).

Principles of Training (FITT)	
Frequency (F)	The number of training sessions completed in a week.
Intensity (I)	How hard an individual will train.
Time (T)	How long an individual will train for.
Type (T)	The training method an individual will use to improve a specific component of fitness and/or their sports performance.
Additional Principles of Training	
Progressive Overload	Training needs to be demanding enough to cause the body and muscles to improve and get stronger.
Adaptation	How the body changes to be able to cope with increased intensity. This occurs during the recovery period.
Individual Differences	The programme should be designed to meet an individuals training goals or the sports they perform in.
Reversibility	If training stops, or the intensity is not high enough, an individuals fitness levels may return to previous levels.
Specificity	Training should be specific to the sport, activity or components of fitness an individual wishes to develop.
Rest and Recovery	Required so that the body can recover from the training and the muscles can adapt and improve.
Variation	It is important to vary the training to avoid boredom and maintain enjoyment.



Knowledge organiser - Year 8 - Netball

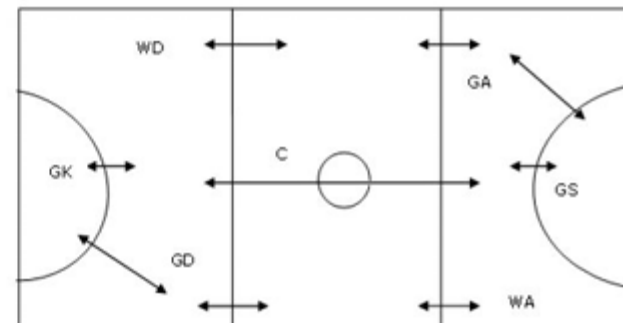


YEAR 8 CURRICULUM FOCUS: **PRECISION**

Precision: "Perform the components of skills and refine the techniques for accuracy."

Skill	Key teaching points To perform each skill with PRECISION you must ...	Skill	Key teaching points To perform each skill with PRECISION you must ...
Footwork	- When the player catches the ball, the foot that then hits the ground first is their landing foot - This landing foot then can't move until the ball has been passed. - You can pivot using your non-landing foot	Defending the player	- Player must stand in a triangle formation in between the player with the ball and the player they are responsible for marking - Player must remain on their toes in order to respond to the ball being passed to their player - Player should be able to see the ball and their player at all times
Passing (shoulder/overhead pass)	Shoulder Pass: Stand with your feet shoulder width apart, ball is in one hand, near to your shoulder, extend your arm/wrist and fingers to pass the ball fast and long. Overhead pass - Spread your fingers around the ball in a W position. Bend your elbows so that ball goes just behind your head, extend your arms to push the ball forwards, aiming to keep the ball in a flat/high flight path.	Advanced dodging (Double dodge/step back/roller)	Double dodge: Quick step one way, followed by a second quick movement, and a third movement into space to get free (movement in any direction) Roller Dodge: Roll off a player by turning and pivoting from one foot to another quickly into space to get free. Step back: Player holds their space and then steps back quickly into space to receive a pass
Positions (role of positions).	GS/GA – The only positions that are allowed to shoot in the shooting circle. GK/GD – Defensive positions that are responsible for marking the shooters. Their aim is to stop the other team from scoring. WD/WA – Mid court positions that help to move the ball up/down the court. C – This player is integral in moving the ball up/down the court – is allowed in all third, except the shooting circles.	Shooting	- Stand with your feet shoulder width apart - The ball is in your dominant hand, above your head, with your non-dominant hand supporting the ball - Push your hand up, extending your arm, so that your arm is pointing towards the net - Aim for the ball to go slightly over the top of the net so it doesn't bounce off the post

Rules	Explanation
Over a third	The ball cannot be thrown over a complete third of the court without being touched or caught by a player. A free pass shall be taken from the area where the ball crossed the second third.
Throw ins	The ball is thrown back into play from the point where it went off the court. When taking a throw in, a player places her foot up to but not on the sideline or backline of the court. If any part of your foot is touching the line or you step into the court in the process of taking the throw in, this is deemed to be a foul throw and the ball goes to the other team.





Knowledge organiser - Year 8 - Rugby



YEAR 8 CURRICULUM FOCUS: **PRECISION**

Precision: "Perform the components of skills and refine the techniques for accuracy".

Skill	Key teaching points To perform each skill with PRECISION you must ...	Skill	Key teaching points To perform each skill with PRECISION you must ...
Passing (Pop/flick/offload)	- Hold the ball in two hands with your fingers spread across the seam, with your chest facing forward. - Pull the ball back across one hip and keep your elbows slightly bent as you turn your chest away from the target. - Flick your wrists in the directions you want the ball to travel.	Rucking	- Stand over your player who has been tackled. - Legs either side of their body - Arms out ready to shield off opposition - Protect ball
Running with the ball	- Place both hands in the middle of the ball. Spread fingers out. - Keep the ball off your chest. - Tight grip - Run	Tackling	- Maintain strong, stable and low body stance. - Make contact with defender using the shoulder - Your cheek should be inline with the side of their bum (cheek to cheek) - Squeeze arms around legs - Fall to the ground with your opponent - Hold onto legs
Kicking	- For a right-footed kicker, the ball is held at an angle of approximately 45 degrees, with the left hand on top of the bottom half of the ball and the right hand below the top half of the ball. - The ball is held out at this angle and released as the foot comes up to strike the ball. The ball is kicked with the top part of the foot.	Set Play/ Line-outs	- The re-starting of play after the ball has been taken out or kicked to touch. - Both sets of forwards will line up opposite each other with the side with throw calling a play. - The throw must be directly down the middle of the two lines.

How to score	Explanation
	A try is the most exciting way of scoring in rugby union. They are worth five points A try is scored when a player touches the ball down inside the opposition's in-goal area between the try line and dead ball line. This area includes the goal-line itself (but not the side or backlines) and the posts (even if the part of the post touched is not over the goal-line). A player must either: 1. Touch the ground with the ball - the player touches the ground with the ball while holding it in the hand or arms. No downward pressure is required. 2. Press down on the ball - if the ball is on the ground in the in-goal area the player must apply downward pressure "with a hand or hands, arm or arms, or the front of the body from waist to neck inclusive".





Knowledge organiser - Year 8 - Trampolining

YEAR 8 CURRICULUM FOCUS: **PRECISION**

Precision: "Perform the components of skills and refine the techniques for accuracy."

Skill	Key teaching points To perform each skill with PRECISION you must ...	Example	Skill	Key teaching points To perform each skill with PRECISION you must ...	Example
Seat landing	- Bottom on cross - Head facing forward - Hands beside hips on bed - Hands facing forwards (not to the side) - Legs straight, toes pointed		Front landing	• Eyes looking forwards • Land flat on front, belly button on the cross • Elbow's wide, hands flat under chin • Legs at a 45-degree angle, straight and together, toes pointed	
Swivel hips	- As seat landing with the addition of: - Land in seated position with legs straight - Arm's reach up - Rotate 180 degrees - Land in a seated position - Half twist to feet		Back landing	- Land on back, pushing hips upwards - Mid back lands on cross - Legs together, at a 45-degree angle, toes pointed	

Routines:

- 3 bounces maximum before routine
- Remain as close to the cross for all moves
- No additional bounces between moves
- Kill the bed on completion of routine

Next Step 1 (Beginner)

- Straddle Jump,
- Seat Landing,
- To Feet,
- Tuck Jump,
- ½ Twist Jump



You must perform this routine exactly as it is written! You will be scored out of 5 for this routine.



Next Step 2 (Development)

- Front Landing,
- To Feet,
- Straddle Jump,
- ½ Twist Jump,
- Seat Landing,
- ½ Twist to Seat Landing,
- ½ Twist to Feet,
- Tuck Jump,
- Pike Jump,
- Full Twist Jump



You must perform this routine exactly as it is written! You will be scored out of 10 for this routine.



Next Step 3 (Novice)

- Full Twist Jump,
- Straddle Jump,
- Seat Landing,
- ½ Twist to Seat Landing,
- ½ Twist to Feet,
- Pike Jump,
- Back Landing,
- ½ Twist to Feet,
- Tuck Jump
- ½ Twist Jump



You must perform this routine exactly as it is written! You will be scored out of 10 for this routine.

Year 8 Branch 1 Key Terms: God's Law

		Image
The Fall	The story in Genesis 3 when humans commit the first sin and fall away from God's grace .	
Original Sin	The state of sin in which all humans are born, meaning they inherit the consequences of Adam and Eve's first sin .	
Concupiscence	The natural temptation to sin that all humans have, following the Fall.	
Sinai Covenant	The covenant Moses made with God at Mount Sinai, and when he was given the Ten Commandments as part of the Law.	
The Decalogue	The ten words or sayings of God that guided the Jewish people to live as God wanted ; also called the 10 Commandments .	
Freedom	The power or right a person has to act, speak or think how they want; being able to choose their own destiny, independent of influence from anyone or anything else.	
Responsibility	Having control or power over something, which leads to a duty or moral obligation to behave correctly .	
Conscience	An intuitive knowledge of right and wrong , which leads to an instinctive desire to do right and to avoid wrong.	
Baptism	The Sacrament of Initiation that welcomes new members into the Catholic Church and washes the person clean of original sin which is inherited by all humans.	

What happened during The Fall?

- Genesis teaches that God created everything to be good, including humans in His image (**imago Dei**).
- Humans were given the job of looking after the world.
- Adam and Eve **disobeyed God** by eating fruit from a forbidden tree, committing the first sin.
- As **punishment**, Eve faced painful childbirth, Adam had to work for food, and the serpent had to crawl on its belly.
- They were **banished from the Garden of Eden**, and all humans inherited **original sin**.



What is the Mosaic Covenant?

- A covenant is a **special promise or agreement** between people or with God.
- Moses made a **covenant** with God after leading the Israelites out of slavery in Egypt.
- God gave Moses **the Decalogue**, also known as the Ten Commandments, for people to follow.
- The commandments are about **loving God** (e.g., worship only Him) and **loving others** (e.g., respect parents).
- **Jesus** taught that following these commandments is important in the New Testament

Are the Ten Commandments still relevant?

- Some people argue that the commandments are God's laws and therefore they **cannot go out of date**.
- Many **UK laws**, like Sunday trading rules, are based on the Ten Commandments.
- Others think some commandments, like those about God, may not matter to non-believers, and **modern issues** like cyber-crime are not mentioned.

How does art portray Moses?

- **David Courlander's** painting shows Moses as a wise leader giving the Ten Commandments to the Jewish people in a simple, naïve style.
- A **13th-century icon from St. Catherine's Monastery** shows Moses on Mount Sinai receiving the commandments directly from God.

What are Conscientious Objectors?

- A conscientious objector is when a person will not participate in an action because of their personal beliefs.
- **Sophie Scholl and the White Rose Movement** were a group of students in Germany who stood up against the Nazis by secretly handing out leaflets telling people the truth about Hitler's actions.
- Sophie and other members were **caught and executed** for speaking out, but their bravery continues to inspire people today.

What does it mean to 'Love thy neighbour'?

- Jesus taught that the **Greatest Commandment** was to love thy neighbour.
- The parable of the **Good Samaritan** teaches that we should be kind and help everyone, no matter who they are.
- Pope Francis in **Fratelli Tutti** teaches that everyone in the world is like a big family, and we should treat each other with kindness, fairness, and love.

What is the Sacrament of Baptism?

- One of the seven **sacraments** of the Catholic Church.
- It is the first sacrament a person can receive, and it **welcomes them in the Church community**.
- It is one of the three **sacraments of initiation**, alongside the Eucharist and confirmation.
- Holy water is used to wash away sin, including original sin in babies.
- It **follows the example of Jesus** who was baptised by John the Baptist in the Gospels.
- Symbols of baptism include **holy water, a lighted candle and anointing with chrism oil**

What is sin?

- A sin is where a human acts **against the will of God** or they go against what their conscience tells them is right.
- A **personal sin** is when an individual chooses to make a bad decision that causes pain and suffering to others.
- **Original sin** is the state in which all humans are born in, where they all born inheriting the consequences of Adam and Eve's sin.
- Original sin means **every person is tempted** or inclined to do what they wish, rather than following God's laws.

What is conscience?

- Catholics believe that conscience is a **gift from God** that helps people know right from wrong. Most Catholics believe the conscience is the **voice of God**
- They think people should learn from **the Bible and the Catechism** to make good choices and follow God's rules.

Branch 1: God's Law

1. Define the key term 'Original Sin'.
2. Define the key term 'Sinai Covenant'.
3. Define the key term 'Conscience'.
4. Describe what happened during The Fall in Genesis.
5. Why is holy water used in the Sacrament of Baptism?
6. What is the link between 'the Fall' and 'the Sacrament of Baptism'?
7. What is the difference between personal sin and original sin?
8. Why do Catholics believe the conscience is important?
9. Describe the Mosaic Covenant and explain why it is important.
10. Why do Catholics believe the Ten Commandments are still important today?
11. Why might some people argue the Ten Commandments are not necessary in today's modern world?
12. What can people learn from the 13th century icon from St Catherine's Monastery about Moses?
13. What is a conscientious objector? Give an example of one and explain what they did and why.
14. What did Jesus mean when he said we should 'love thy neighbour'?
15. What is Fratelli Tutti and what does it teach Catholics?

Year 8 Branch 2 Key Terms: Messengers of God

Key Word	Definition	Image
Prophet	A person anointed by God and inspired by God through the Holy Spirit to share God's messages	
Priest	A person anointed by God to make thanksgiving offerings on behalf of the people; also refers to an ordained minister of the Catholic Church who celebrates the sacraments in which all Catholics participate	
King	An anointed person who has authority, power and responsibility for people in his care; also a ruler of a country .	
Messianic	Relating to the Messiah ; there are prophecies in the Old Testament that are called messianic because they contain predictions about the nature and purpose of the Messiah.	
Advent	The first season in the liturgical year, in which Christians prepare and wait for both the birth of Jesus and the Second Coming of Christ.	
Amos	An early Hebrew prophet who called people back to God and warned of divine judgement on people who sinned	
Elijah	An Old Testament prophet who foretells the coming of the Messiah in the books 1 Kings and 2 Kings	
John the Baptist	A New Testament prophet who prophesised and prepared the way for Jesus as the Messiah; also the cousin of Jesus	



What are prophetic texts?

- In Christianity, prophets are people **chosen by God** to deliver His message. They often call people to turn back to God, live justly, and follow His commandments.
- Sometimes, prophets speak about **future events** that will happen if people don't repent or follow God's will. For example, **John the Baptist** prophesied about the coming of Jesus as the Messiah and **Isaiah** foretold the birth of Jesus hundreds of years before it happened.
- A **prophetic text** is any writing in the Bible where a prophet shares what God has revealed to them, whether it's a warning, encouragement, or promise. These texts help guide people in their faith and show God's plans for the future.
- A **prophetic voice** is someone who speaks out with courage to share God's message, often warning people and giving hope for the future.

Who was the prophet Amos?

- Amos calls the people of Israel to repent, or turn away from their sins, and return to God. He warns that if they don't change their ways, they will **face God's judgment**. True repentance means not just saying sorry but also changing how we live.
- Amos speaks strongly about how people should **care for the poor** and treat others fairly. He condemns those who take advantage of the weak. True worship of God includes **loving and helping those in need**.
- Amos warns against **worshipping false gods** or following practices from other nations that don't honour the one true God. He emphasizes that Israel should not mix their faith with the beliefs of other people.
- While many in Israel turn away from God, Amos promises that a **"faithful few"** (a small group of loyal believers) will be saved and restored by God. Even in difficult times, God will protect and bless those who remain faithful to Him.

The Prophet Jeremiah:

- Jeremiah was a prophet chosen by God to **warn the people** of Judah to turn away from sin and follow God's ways.
- Even though people ignored him and he faced hardship, Jeremiah **stayed faithful to God** and continued to share His message.

What is superstition?

- Superstition is the belief that certain actions, objects, or rituals can bring **good or bad luck**, even though they have no real power.
- The Catholic Church teaches that superstition goes against **trusting in God** because only He has the power to guide and protect us.



Year 8 Branch 2: Messengers of God

What do prophecies teach us?

- Prophets used images, like Jeremiah's vision of a potter shaping clay, to **show how God shapes and guides people's lives**.
- Parables, like Ezekiel's story of dry bones coming to life, **helped people understand God's power** to bring hope and renewal.
- Prophecies give warnings to help people **avoid bad consequences** when they disobey God.
- They also give promises of hope and blessings if people choose to follow God's ways.

Who is John the Baptist?

- John the Baptist told people to **turn away from their sins** and be baptized in the Jordan River to show they were ready to follow God.
- Even though John was a **great prophet**, he baptized Jesus in the Jordan River. This event showed Jesus' obedience to God's plan and was when God's voice spoke from heaven, saying, **"This is my Son, whom I love."**
- He spoke boldly about the need for people to live **righteous lives**, even when it made powerful leaders angry. John was eventually arrested because he spoke against King Herod's wrong actions.

What is the season of Advent?

- Advent is the four-week season before Christmas when Christians **prepare for the birth of Jesus** through prayer and reflection.
- The **Advent wreath** is an important symbol, with four candles representing **hope, peace, joy, and love**, which are lit each Sunday leading up to Christmas.
- A fifth candle, often white, is lit on Christmas Day to celebrate the birth of Jesus, the **Light of the World**.
- Christmas carols often contain **prophetic messages** by reminding people of the promises made about Jesus in the Bible, showing Him as the saviour.
- **O Come, O Come, Emmanuel** reflects the prophecy which speaks of a virgin giving birth to Emmanuel ("God with us"), showing that Jesus is the promised Messiah.

Who was St Oscar Romero?

- St. Oscar Romero was the **Archbishop of El Salvador** who spoke out against poverty, injustice, and human rights abuses. He defended the poor and criticized government violence.
- He was assassinated while celebrating Mass on March 24, 1980, for his efforts to promote justice. In 2018, he was made **a saint for his commitment to spreading God's love and justice**.

Branch 2: Messengers of God

1. Define the key term 'Prophet'.
2. Define the key term 'King'.
3. Define the key term 'Elijah'.
4. How are the terms 'Messianic' and 'Elijah' connected?
5. What is a prophetic text?
6. What is a prophetic voice?
7. What does Amos say true repentance means?
8. Give two examples of how Amos says we should treat others.
9. What does the Catholic Church teach about superstition?
10. List three examples of things prophecies have taught people.
11. Why was John the Baptist important?
12. Who spoke the words 'this is my son whom I love' and what does the quotation mean?
13. How does the Advent wreath help Christians prepare for Christmas and what do the candles represent?
14. What does the quote 'O Come, O Come, Emmanuel' teach Christians about Jesus?
15. Why did St Oscar Romero speak out against the government and what happened to him as a result?

Key Vocabulary	
microorganism	A microorganism is an organism that can only be seen using a microscope.
species	A species is a group of organisms with shared characteristics that can reproduce to produce fertile offspring.
characteristics	A characteristic is a particular feature or quality that is specific to an individual, species or group.
classification	Classification is the process of grouping living things according to their similarities.
classification key	A classification key is a set of questions used to identify and group living things. They are usually based on an organism's physical characteristics .
organism	' Organism ' is another way to refer to a living thing.



View more [Living Things and Their Habitats](#) planning resources.

visit [twinkl.com](https://www.twinkl.com)

Module 1 – Topic 1

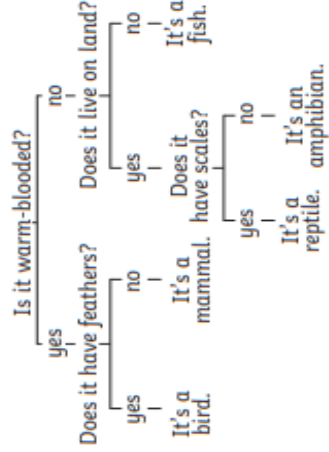
Living Things and Their Habitats

Microorganisms		
Microorganisms are microscopic organisms that can be found almost everywhere on Earth – including inside our bodies.		
Bacterium	Virus	Fungus
 cholera bacteria	 influenza virus	 honey fungus
single-celled microorganism	very simple structure	can be very small or very large
found almost everywhere on Earth	scientists often disagree about whether they are alive or not	often have a fruiting body and a network of threads
can be spherical, rod shaped or curved/spiral	require a host to reproduce	reproduce through releasing spores

Vertebrate Groups				
Mammal	Bird	Reptile	Amphibian	Fish
				
warm-blooded fur or hair give birth to live young produce milk	warm-blooded feathers lay eggs beak and wings	cold-blooded scales or scutes usually lay eggs	cold-blooded moist or slimy skin often undergo metamorphosis	cold-blooded live in water scales and fins gills
Some Invertebrate Groups				
Arthropod	Annelid	Mollusc	Echinoderm	
				
segmented legs include insects, crustaceans and arachnids	segmented bodies no legs include earthworms and leeches	segmented bodies no legs include slugs and octopuses	live in salt water tube feet include sea stars and sea urchins	

Classification

In the 1700s, Swedish scientist Carl Linnaeus published a system for classifying living things based on their observable **characteristics**, known as the Linnaean System. An adapted version of this system is still used today.



Taxonomists are scientists who sort, group and classify living things based on their similarities and differences. We can use a **classification key** to group and classify living things like a taxonomist does.

Flowering and Non-Flowering Plants

Plants can be sorted based on whether they are flowering or non-flowering. Flowering plants use flowers to produce seeds at some point in their life cycle, whereas non-flowering plants reproduce using cones, spores and fragmentation.

Flowering plants include deciduous trees, many types of herbs and crop plants.



Non-flowering plants include conifers, mosses, ferns and liverworts.



Key Vocabulary	
asexual reproduction	Asexual reproduction occurs when only one parent produces offspring that are nearly identical to the parent itself.
fertilisation	Fertilisation is the process of the male and female sex cells joining together.
life cycle	The series of changes a living thing goes through from its beginning to its end is called its life cycle .
living organism	Something that is alive is a living organism . It can move, use energy and reproduce.
offspring	Offspring are the young of a living organism .
placental	A placental mammal gives birth to live young that have fully developed inside the body.
sexual reproduction	Sexual reproduction occurs when two parents produce offspring that are similar to them but not identical.
species	A species is a group of living things with similar characteristics that can reproduce with other members of the same group to produce fertile offspring .
characteristic	A characteristic is a particular feature or quality that is specific to an individual or species .
metamorphosis	Metamorphosis is the process by which certain animals completely change their appearance and body structure.

Module 1 – Topic 2

Changes within an organism's lifetime Knowledge Organiser

Key Knowledge

All living things have a **life cycle** – they are born, grow, reproduce and eventually reach the end of their lives. **Reproduction** happens when male and female sex cells join to create **offspring**. The **life cycle** can vary slightly between different **species**.

Human Life Cycle

The diagram illustrates the human life cycle with illustrations of people at different ages: newborn, 0-1, 4-6, 7-9, 12-14, 16-25, 30-35, 40-55, and 60-70. Each stage is represented by a small figure and a corresponding age range below it.

Birds and Reptiles

Birds and most reptiles hatch from eggs.

A snake is a reptile that usually lays eggs.

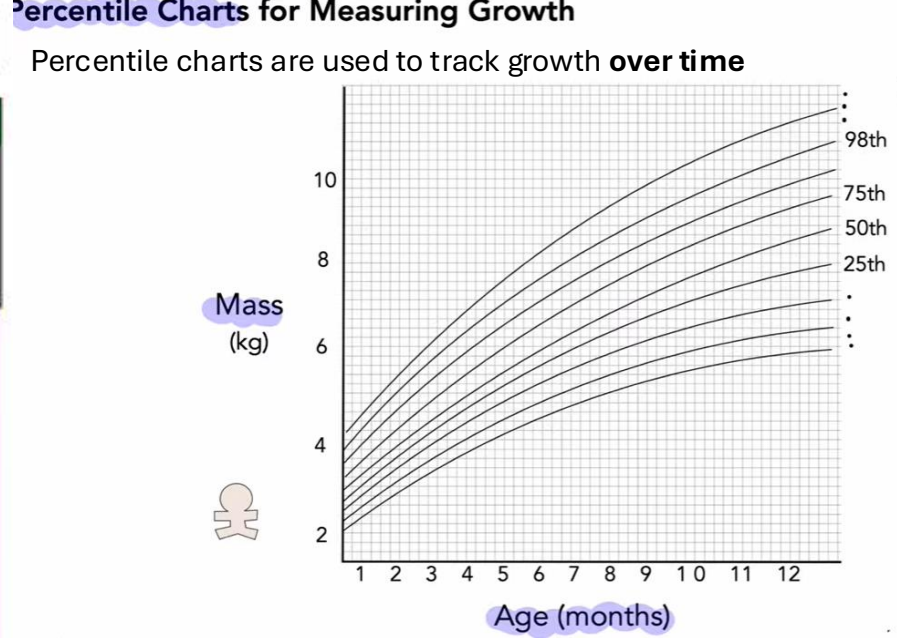
Birds lay eggs in a nest; they hatch when the chick is fully formed.

Amphibians and Insects

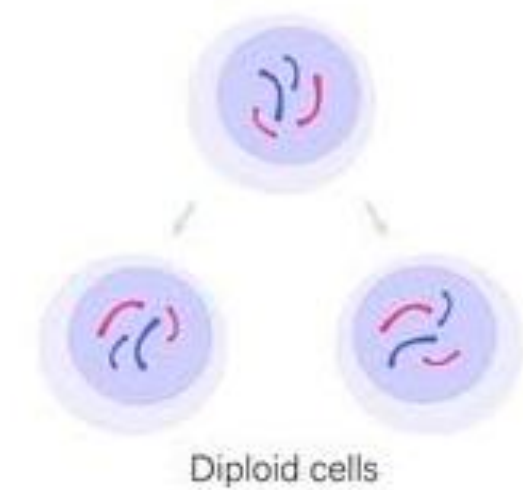
Amphibians and insects hatch from eggs and often go through **metamorphosis**, changing in appearance as they grow into adults.

The Life Cycle of a Frog

The Life Cycle of a Ladybird



Animals and plants grow by cell division. The type of cell division used is mitosis.



One cell divides to produce two. They are identical to the parent cell. This is useful for growing but also for healing cuts or replacing damaged cells in organisms. 49

Animal gametes

Sperm Cell Adaptations

The head is covered with an acrosome, which releases enzymes to digest the egg cell membrane.

The midpiece contains many mitochondria to release energy for movement.



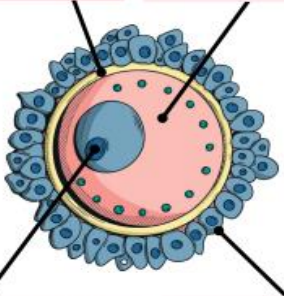
The nucleus contains genetic information from the father. The sperm cell carries half the genetic information that will be received by the offspring.

The sperm cell has a tail (flagellum) to allow it to move towards the egg cell to fertilise it.

Egg Cell Adaptations

The cell membrane changes after fertilisation so no more sperm cells can enter the egg.

The cytoplasm contains nutrients to support the developing embryo after fertilisation.

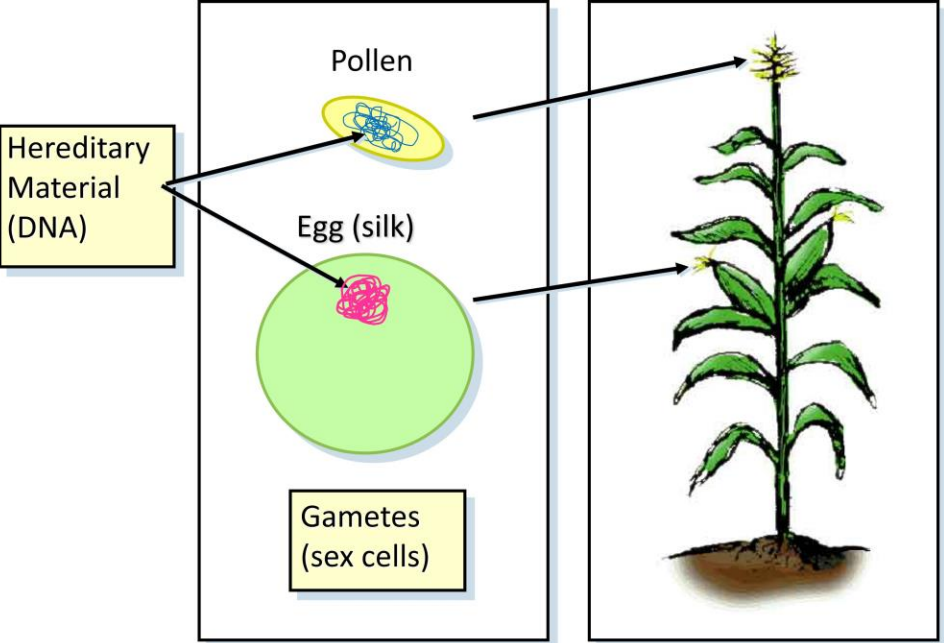
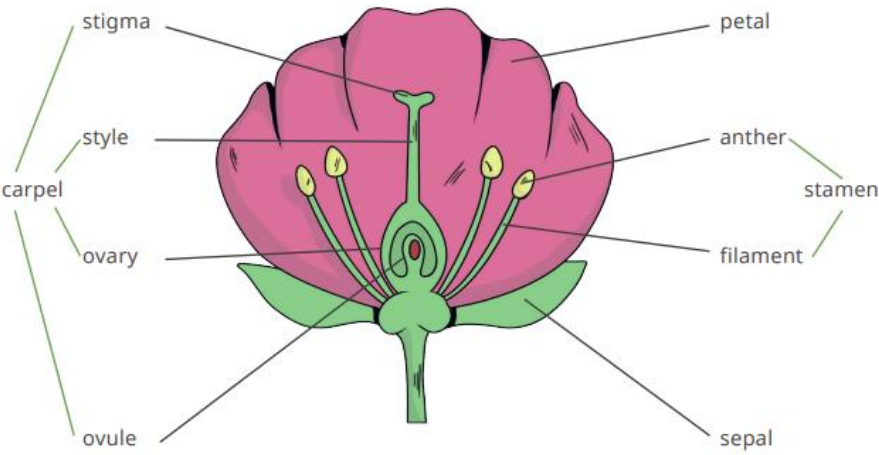


The nucleus contains genetic information from the mother. The egg cell carries half the genetic information that will be received by the offspring.

The large size of the egg cell increases the chance of it being fertilised and allows more space for nutrients to be stored.

Plant gametes and Reproduction

Parts of a Flower



Part of the Flower	Function
anther	Produces male sex cells (pollen grains).
carpel	The female reproductive part of the flower, consisting of the ovary, ovule, style and stigma.
filament	A stalk-like structure that supports the anther.
ovary	Produces female sex cells (eggs).
ovule	Develops into a seed after fertilisation.
petal	May be brightly coloured to attract insects.
sepal	These protect the flower before it is opened when it is still a bud. They are often green.
stamen	The male part of a flower consisting of an anther held up on a filament
stigma	The top of the female part of the flower, which is sticky, so pollen grains stick to it.
style	The tube connecting the stigma to the ovary which pollen travels down.

1

Diet

- Like all animals, humans need **food to survive**.
- In Biology, a **diet** means everything that you eat and drink.



2

Nutrients

- Nutrients are the **chemical elements** or compounds in foods.
- An organism uses **nutrients** to **grow**.
- Nutrients are found in different food types.



3

Food Types

- Carbohydrates 
- Proteins 
- Fats 
- Minerals 
- Vitamins 

4

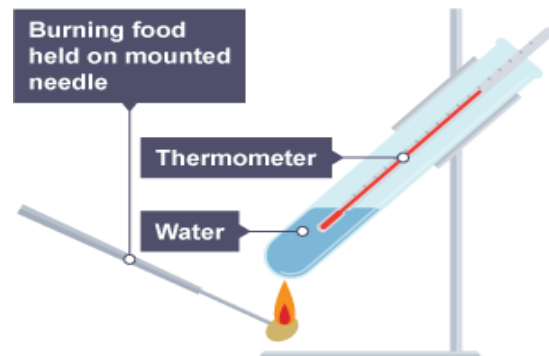
Balanced Diet

- A **balanced diet** has the right amount of all the **nutrients** we need.
- A balanced diet also needs **fibre** and **water**.



Calorimetry

The amount of energy in food can be found by burning the food and measuring the temperature change.
The energy in the food is released as heat.



Module 1 – Topic 3

Balanced and Unbalanced Diet

A **balanced diet** is a diet which contains adequate proportions of each food group.
If someone does not eat the correct amount of each nutrient, they are said to have an **unbalanced diet**.

Energy From Food

Food provides the **energy store** that our bodies need to function.
You need different amounts of energy depending on what you do each day.
Your body transfers energy when it keeps you warm, moves food through your gut, breathes, thinks, moves and talks.

Body Mass Index

Body mass index (BMI) is one way of estimating the proportion of body fat and the health of a person over the age of 18. It takes the height and mass of the person into account.
The result is used to indicate whether the person is obese, overweight, at a healthy weight or underweight.
BMI is calculated using the following equation:

$$\text{BMI (kg/m}^2\text{)} = \frac{\text{mass (kg)}}{\text{height}^2 \text{ (m}^2\text{)}}$$

BMI is sometimes **not** a suitable measure of body fat and health. This includes when a person:

- is an athlete
- is a child or adolescent
- is pregnant
- has health issues which can affect mass gain and loss
- has a condition affecting height or mobility

Food Groups

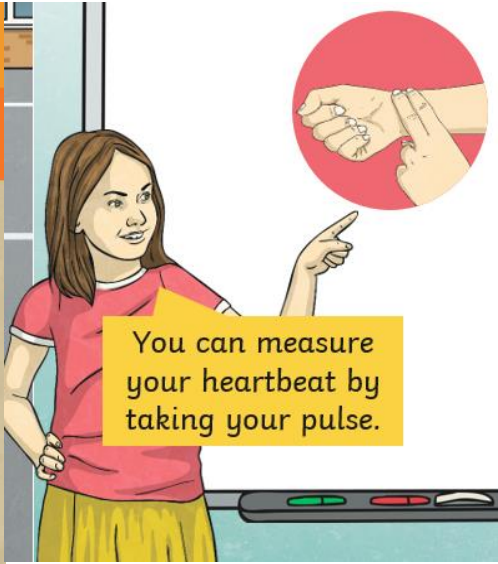
Name of Food Group	Function	Food Source in Diet	Consequences of Imbalance
carbohydrates	These provide a store of energy.	bread, cereals, pasta, potatoes and rice	A lack of carbohydrates can cause tiredness and fatigue. Glucose deficiency can lead to headaches, nausea, dizziness, bad breath and irritability.
fibre	This keeps the digestive system healthy.	beans, fruit, nuts, pulses, seeds, vegetables, wholegrain cereals and whole grain bread	A lack of fibre can cause constipation and has been linked to bowel cancer.
lipids (fats and oils)	They provide a store of energy, are used to make cell membranes and some hormones, protect internal organs and insulate the body.	butter, cheese, cream, nuts, olive oil and oily fish	A lack of fats and oils can cause scaly skin and reduced growth. Too much saturated fat can lead to high cholesterol levels in the blood, increasing the risk of heart disease.
minerals	They help to build strong bones, keep the blood healthy and ensure blood clots normally.	broccoli, cheese, leafy green vegetables, milk, nuts and tofu	Mineral deficiencies can cause health problems such as rickets and anaemia.
proteins	They are used to build new cells and tissues for growth and repair.	beans, eggs, cheese, fish, meat, milk and pulses	A lack of protein can cause the body to hold too much fluid, leading to swelling and an enlarged abdomen. Protein deficiency can cause poor growth, regular infections, cracked nails and brittle hair.
vitamins	They help to sustain vision in dim light, keep the immune system healthy, help wounds to heal and the body to make red blood cells.	broccoli, eggs, milk, oranges and red meat	Vitamin deficiencies can cause health problems such as anaemia, night blindness, scurvy and rickets.
water	This keeps cells working effectively, helps to regulate body temperature and acts as a solvent to dissolve nutrients.	drinking water, fruits and vegetables	Dehydration can cause headaches, an inability to concentrate, tiredness and fatigue.

Effects of exercise on the body

The heart and the lungs are both vital organs.

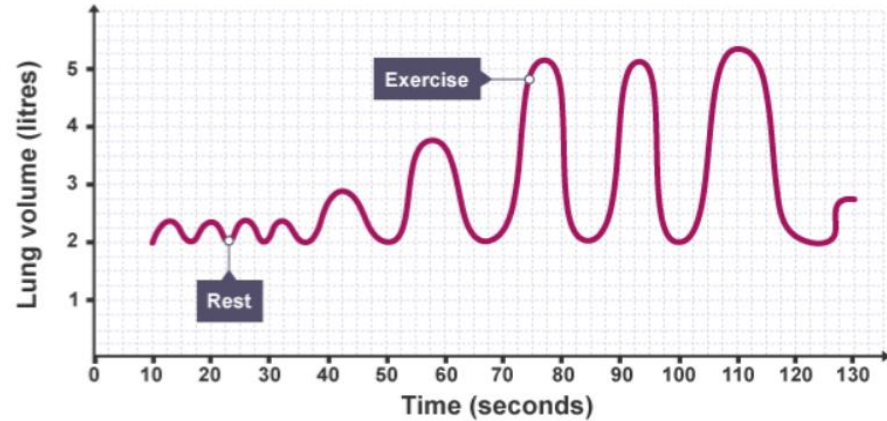
Can you describe the important job that they each do?

The heart pumps blood around the body to carry oxygen and other important things that the body needs.



During exercise the muscles need more oxygen in order to contract and they produce more carbon dioxide as a waste product. To meet this increased demand by the muscles, the following happens:

Breathing depth (tidal volume) and rate increase – this gets more oxygen into the lungs and removes more carbon dioxide out of the lungs.



When the heart beats faster, it pumps more oxygen to the brain.

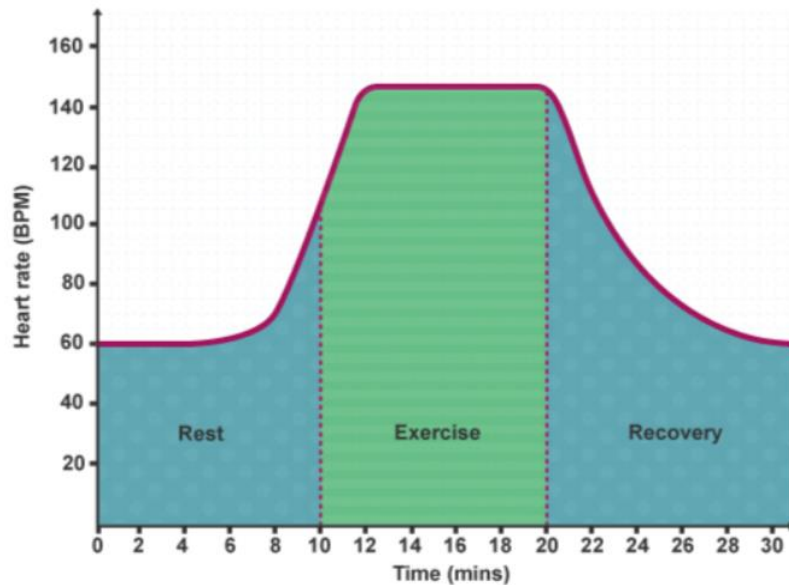
Movement helps people to concentrate better.

Exercise can also help to improve learning.



Source: UK Chief Medical Officers' Physical Activity Guidelines

Heart rate increases – this increases the rate that oxygen is transported from the blood to the working muscles and carbon dioxide is transported from the working muscles to the lungs.



Obesity

If a person continuously takes in **too much** energy from food, their **mass will increase**. People with a high excess of body fat could suffer from **obesity**.

A person who is obese could suffer serious health issues such as:

- **coronary heart disease**
- **type 2 diabetes**
- be more likely to develop some types of **cancer**
- depression
- **strokes**
- joint pain
- high blood pressure
- difficulties breathing

Regular exercise and eating less fat can reduce the risk of obesity

Key Questions P.48

1	What is a microorganism?
2	What is classification?
3	Give one feature of a mammal
4	If organisms are members of the same species, what are they able to do?
5	What is the difference between a vertebrate and an invertebrate?
6	Name three types of microorganism
7	What is the second part of an organism's scientific name called?
8	What is the scientific name for humans?
9	If an organism is warm-blooded and has feathers, which group does it belong to?
10	What is the name of a scientist that sorts organisms into groups and classifies living things?

Key Questions P.49

1	How many parents are required for sexual reproduction?
2	What does fertilisation mean?
3	What do we call the series of changes an organism goes through from the beginning of its life to its end?
4	Give the use of percentile charts
5	When one cell divides, how many cells are produced after one division?
6	Give two uses of cell division
7	If an organism reproduces asexually, what are the offspring like compared to the parent?
8	What is a gamete?
9	Name type of cell division organisms use to grow
10	Which method of reproduction do bacterial cells use to reproduce?

Key Questions P.50

1	Name the male and female gametes in humans
2	Give one adaptation of a sperm cell
3	Give one adaptation of an egg cell
4	Name the male and female gametes in plants
5	How much DNA does a gamete have compared to a normal body cell?
6	Name the part of the plant that produces male sex cells
7	Name the part of the plant that produces female sex cells
8	What does the plant ovule develop into after fertilisation?
9	Which structures are contained in the carpel of a flower?
10	Which structures are contained in the stamen of a flower?

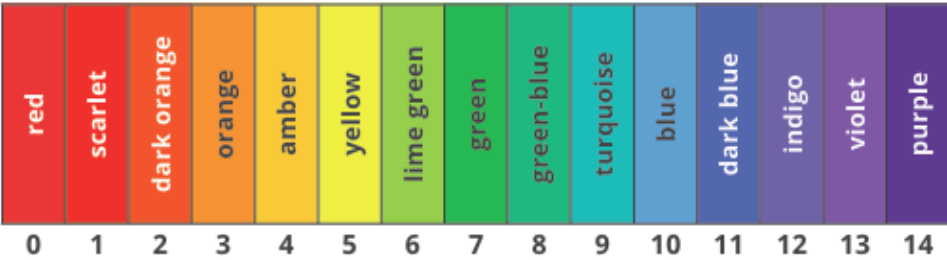
Key Questions P.51	
1	Name the seven food groups a balanced diet should include
2	What is meant by a balanced diet?
3	What does food provide the body?
4	State three foods that are a good source of protein
5	Which organ system does fibre help to keep healthy?
6	State the role of fats in the body
7	What happens if a person does not eat enough carbohydrates in their diet?
8	State the name of the technique used to investigate how much energy is in food
9	Describe how this technique works
10	Which equation can be used to determine if someone is underweight, healthy, overweight or obese?

Key Questions P.52	
1	State the role of the heart
2	Name the gas that muscles need more of during exercise
3	Why do muscles require more oxygen when a person is exercising
4	State the effect exercise has on heart rate
5	State the effect exercise has on breathing rate
6	State the effect exercise has on breathing depth
7	Describe how a person can measure their heart rate
8	What is obesity?
9	State two ways a person can decrease their risk of obesity
10	Describe how heart rate and breathing rate changes when a person stops exercising and begins to rest

Acids and Alkalis Knowledge Organiser

Key Words	
acid	A substance with a pH value lower than 7. The closer to pH 0, the more acidic a substance is.
alkali	A soluble base with a pH value higher than 7. The closer to pH 14, the more alkaline a substance is.
base	A substance that reacts with an acid to neutralise it.
chemical reaction	A process that involves the rearrangement of atoms to produce new substances.
indicator	A substance that changes colour when added to acidic or alkaline solutions.
litmus paper	A type of indicator paper used to test pH. Red paper turns blue in alkaline solutions and blue paper turns red in acidic solutions. It is bleached white in the presence of chlorine.
neutral	A substance with a pH value of 7.
neutralisation reaction	A reaction between an acid and a base or an acid and an alkali, forming a salt and water.
pH	A measure of the acidity or alkalinity of a substance on a scale of 0 to 14.
pH scale	A scale from 0 to 14 that is used to measure the acidity or alkalinity of a substance.
salt	A compound formed by the neutralisation of an acid by a base.
universal indicator	A mixture of dyes that changes colour gradually over a range of pH, used to test for acids and alkalis.

pH Scale



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

red scarlet dark orange orange amber yellow lime green green green-blue turquoise blue dark blue indigo violet purple

Substances with a pH between 0 and 6 are **acidic**. Substances closer to pH 0 are more acidic (stronger).

Substances with a pH of 7 are **neutral**.

Substances with a pH between 8 and 14 are **alkaline**. Substances closer to pH 14 are more alkaline (stronger).

Measuring pH

The pH of a substance can be measured in two ways:

- using an indicator
- using a pH meter

Indicators are substances that change colour when added to acidic, alkaline and neutral solutions.

pH meters are pieces of scientific equipment that give the pH as a numerical value.

Some plants contain a substance that changes colour when it is mixed with another substance with a different pH. These plants can be used as indicators.



Indicators

Universal indicator changes colour gradually over a range of pHs.

Red litmus paper stays red in acidic solutions and turns blue in alkaline solutions.

Blue litmus paper stays blue in alkaline solutions and turns red in acidic solutions.

Dangers of Acids and Alkalis

Hazard symbols are recognisable icons that warn about the dangers of a substance.

	corrosive A corrosive substance can react with other substances causing the destruction of materials. It could burn the skin or cause damage to the eyes.		moderate health hazard This may include irritants. These are substances that may cause redness or blistering if they come into contact with the skin.
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The hazards of acids and alkalis depend on the type of acid or alkali, and its concentration.

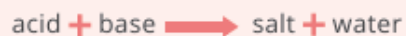
In **concentrated** solutions, there are more acid or alkali particles in a given volume. To make a concentrated solution, a large volume of the acid or alkali is mixed with a small volume of water. These acids and alkalis are corrosive.

In **dilute** solutions, there are fewer acid or alkali particles in a given volume. To make a dilute solution, a small volume of the acid or alkali is mixed with a large volume of water. These acids and alkalis are often irritants (moderate health hazards).

Question
Give the pH of a neutral substance.
Give the definition of a base.
Give the numbers on the pH scale that correspond to an acidic substance.
Give the numbers on the pH scale that correspond to an alkaline substance.
What colour will litmus paper turn in an acid?
What colour will litmus paper turn in an alkali?
What does this hazard symbol mean? 
Give a different way that pH can be measured that is not with an indicator.
What is the difference between a concentrated solution and a dilute solution?
What does this hazard symbol mean? 

Neutralisation Reactions

A neutralisation reaction is a reaction between an acid and a base or an acid and an alkali, forming a salt and water.



As the acid and alkali are mixed, the pH gets closer to 7. A neutral solution is made if the correct amount of acid and alkali are added together.

The salt that is produced is dependent on the acid and the base that reacts.

Naming Salts

The first part of the name of the salt comes from the name of the metal in the base taking part in the reaction.

The second part of the name of the salt comes from the name of the acid taking part in the reaction.

Hydrochloric acid produces a **chloride** salt.

Nitric acid produces a **nitrate** salt.

Sulfuric acid produces a **sulfate** salt.

Uses of Neutralisation



Acidic Soil and Lakes

Acid rain may absorb into soil or fall in lakes and areas of open water, lowering their pH. This can affect the survival of plants and animals living and growing in these areas. Slaked lime (calcium hydroxide) can be added to acidic soil and water to increase its pH.



Indigestion Tablets

Heartburn and acid reflux occur when stomach acid (hydrochloric acid) irritates the stomach lining or travels up towards the throat, causing a burning feeling. Indigestion tablets containing bases such as magnesium hydroxide and magnesium carbonate can be taken to treat these symptoms. The bases react with the acid in the stomach, neutralising it to form a salt and water.



Toothpaste

An acidic environment in the mouth, caused by the consumption of some food and drink, can lead to tooth enamel becoming weakened and eroded. Toothpaste contains alkalis such as sodium hydrogen carbonate (sodium bicarbonate), which can neutralise the acid, preventing tooth decay from occurring.



Treating Stings

Bee stings are slightly acidic, with a pH value between 4.5 and 5.5. They can be neutralised using baking soda containing sodium hydrogen carbonate, which is alkaline. Wasp stings are slightly alkaline and can be neutralised using vinegar which contains ethanoic acid.

Making Salts

Salts can be produced in the lab using the following method:

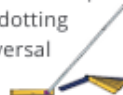
1 Use a measuring cylinder to measure the alkali into a beaker.



2 Add drops of the acid from a pipette to the alkali and stir.



3 Dip a stirring rod into the solution to take a small sample and test the pH by dotting it on a piece of universal indicator paper.



4 Compare the colour of the universal indicator paper with the universal indicator pH scale.



5 Continue to add the acid and test the pH of the solution until a neutral pH result is obtained (pH 7 – green).



6 Heat the neutral solution in an evaporating basin over a water bath until approximately 1/3 of the solution remains.



7 Leave the remaining solution in a warm place to evaporate completely, then observe the remaining crystals.



Analysis and Evaluation

A **mean** is calculated by adding a list of numbers and dividing by how many numbers are in the list.

An **anomalous result** is a result that does not fit the pattern shown by other results. Anomalous results should be identified and omitted from the data before the mean is calculated.

Scientific results are **valid** if the method ensures that the independent variable affects the dependent variable only. All other variables should be controlled.

Results are **repeatable** if the same experimenter repeats the investigation using the same method and equipment and gets the same result.

Question

Give the word equation for a neutralisation reaction.

What type of salt does hydrochloric acid produce?

What type of salt does nitric acid produce?

What type of salt does sulfuric acid produce?

How do you remove most of the water from a salt solution?

How do you remove the rest of the water to just leave crystals of a salt?

What is an anomalous result?

What does it mean if a result is repeatable?

Give a real-life use of neutralisation.

Question number	Question	Answer
1	Give the pH of a neutral substance.	
2	Give the definition of a base.	
3	Give the numbers on the pH scale that correspond to an acidic substance.	
4	Give the numbers on the pH scale that correspond to an alkaline substance.	
5	What colour will litmus paper turn in an acid?	
6	What colour will litmus paper turn in an alkali?	
7	What does this hazard symbol mean? 	
8	Give a different way that pH can be measured that is not with an indicator.	
9	What is the difference between a concentrated solution and a dilute solution?	
10	What does this hazard symbol mean? 	

Question number	Question	Answer
1	Give the word equation for a neutralisation reaction.	
2	What type of salt does hydrochloric acid produce?	
3	What type of salt does nitric acid produce?	
4	What type of salt does sulfuric acid produce?	
5	How do you remove most of the water from a salt solution?	
6	How do you remove the rest of the water to just leave crystals of salt?	
7	What is an anomalous result?	
8	What does it mean if a result is repeatable?	
9	Give a real-life use of neutralisation.	

Forces are pushes or pulls.

Forces can:

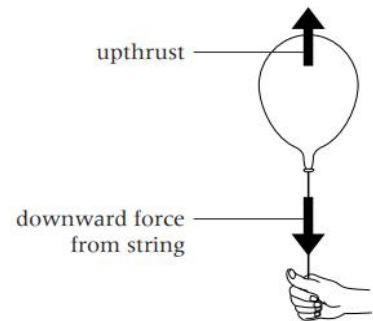
- change the shape or size of an object
- change the speed things are moving (make them move faster or slower)
- change the direction of a moving object.

The units for measuring force are **newtons (N)**.

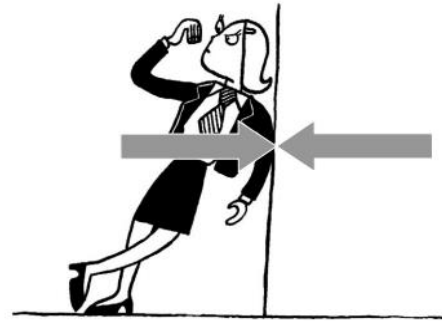
Friction is a force caused by two things rubbing together. **Air resistance** and **water resistance** are kinds of friction. They are sometimes called **drag**.

Upthrust pushes things up. Solid things, like your chair, give you upthrust. Things float in water because of upthrust.

Balanced forces



The upwards and downwards forces on this balloon are **balanced**. The balloon will not move.



The forces here are balanced. The girl will not move, and neither will the wall!

A rocket in space does not need to use its engine to keep moving. There is no air in space, so there is no air resistance to slow it down.

Friction

Friction is a contact force. Friction can:

- slow things down
- wear things away
- produce heat
- make a noise.

Friction is sometimes helpful, for instance:

- your shoes grip the floor because of friction
- tyres and brakes use friction
- pencils write because of friction.

Friction is not always helpful:

- parts of engines wear away because of friction
- friction makes bicycles harder to pedal.

Friction can be increased by using rough surfaces, or by using materials like rubber that have a lot of friction.

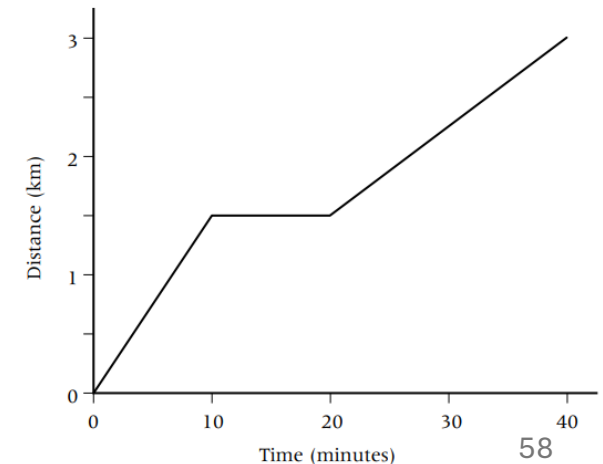
Friction can be reduced by using smooth surfaces, or by **lubrication**. Things like oil or grease are **lubricants**, and help things to move past each other easily.

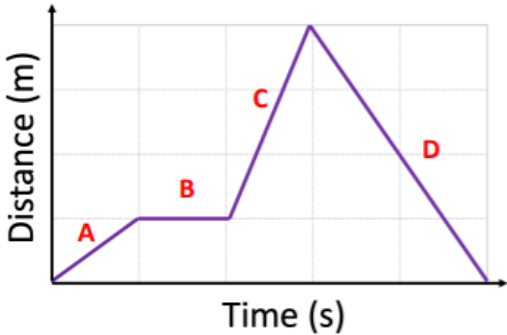
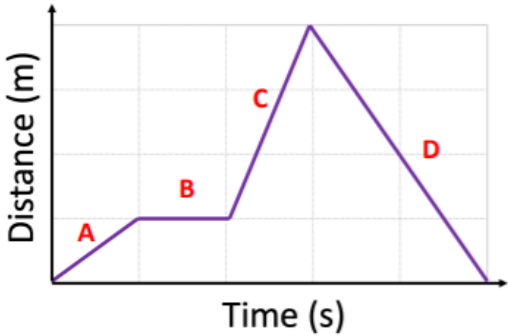
Speed

To measure how fast something is travelling you need to measure the distance it travels and the time taken. Units of speed are km/h or m/s or mph. The units for speed depend on the units you have used to measure the distance and the time.

Distance/time graphs

A journey can be shown on a distance/time graph. This graph shows a person running, then stopping for a rest, then walking slowly. The steeper the line on the graph, the faster they are moving.



Question	Answer
1. What three things can forces do to an object?	
2. What is the unit of force?	
3. What causes friction?	
4. What are the two other types of friction called?	
5. In which section is the person running away from the start?	
6. In which section is the person stationary?	

Question	Answer
7. Name one instance when friction is helpful.	
8. Name one instance when friction is unhelpful.	
9. Describe one way to reduce friction	
10. What two things need to be measured to be able to calculate speed.	
11. Suggest a unit for speed	
12. If forces are balanced, what could an objects motion be like?	

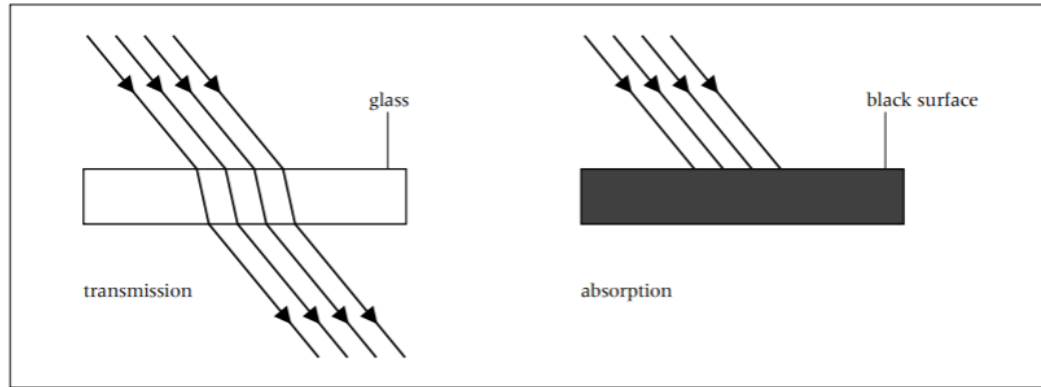
Light

Objects which create light are **luminous sources**. Light travels in *straight lines*.

Light waves travel through **transparent** objects but not through **opaque** objects. **Shadows** are made because light cannot travel through opaque objects. **Translucent** objects show a glow of light through them.

Transmission and absorption

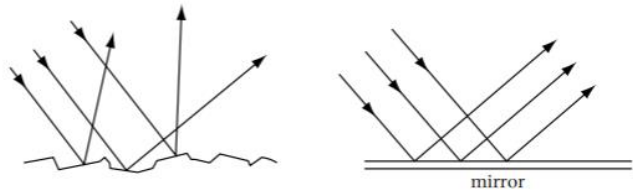
Transparent materials let light pass straight through. We say they **transmit** light. Opaque surfaces can **absorb** light. Black surfaces absorb light very well and reflect very little. This is why they look so dark.



Reflection

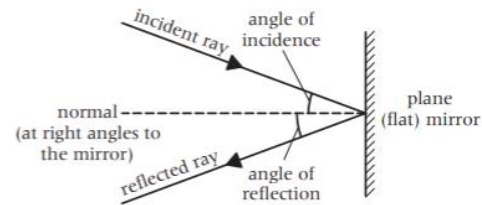
Light rays are **scattered** by rough surfaces, and a **reflection** cannot be seen.

A **plane** mirror is a flat mirror. Light is reflected evenly by a plane mirror.



The **angle of incidence** is equal to the **angle of reflection**.

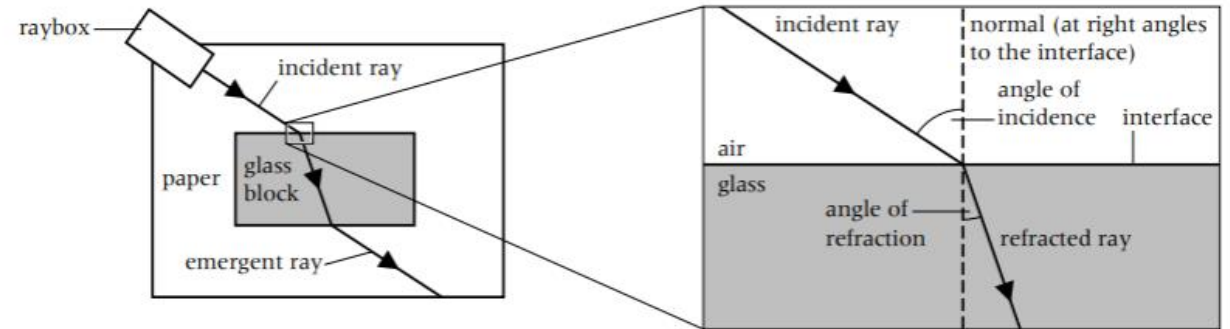
When light shines on to an object viewed in a mirror, the rays are **reflected** into the eye. They seem to come from a position behind the mirror. The **image** is the **same size** as the object and the **same distance** from the mirror. In the image left is right and right becomes left.



Refraction

When light hits something **transparent** it changes direction. This is called **refraction**.

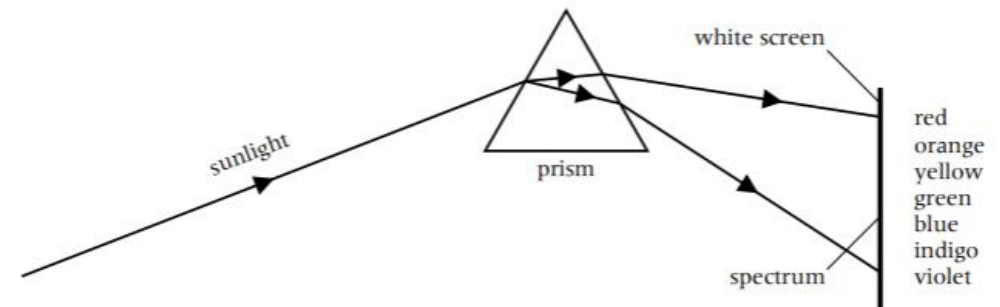
Refraction takes place at the **interface** between two substances. When light is transmitted through glass it slows down and bends towards the **normal**. When it travels back out it speeds up again and bends away from the normal.



Colour

White light is a mixture of colours. White light can be split up using a **prism** to give a **spectrum** of seven colours (red, orange, yellow, green, blue, indigo, violet).

The splitting of colour into a spectrum is called **dispersion**.



A **rainbow** is produced when water droplets in the air refract sunlight.

Physics Y10 Cycle 1: Topic 2 Making images

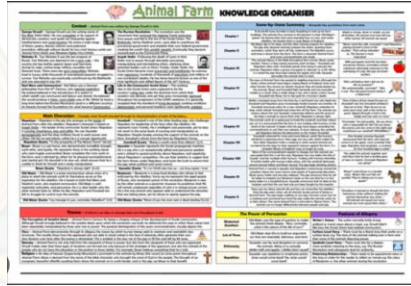
Question	Answer
1. Define the term transparent.	
2. Define the term opaque.	
3. Define the term translucent.	
4. Suggest a surface that would absorb light	
5. Complete the sentence to state the law of reflection.	The _____ is equal to the _____.
6. What is refraction?	

Retrieval Questions

Question	Answer
7. Where does refraction take place?	
8. In refraction, if light enters glass, what direction will it bend?	
9. What are all the colours of light? (7)	
10. What is dispersion?	

REVISION STRATEGY ONE: LOOK, COVER, WRITE, CHECK

Make sure you have a copy of your knowledge organiser or your exercise book for the subject you are revising.



Step 1
Read the information carefully



Step 2
Cover the page



Step 3
Write down as much information as you can remember. Focus on ideas, key vocabulary, dates, events and people



Step 4
Check your notes against the knowledge organiser. Make any corrections and then add to your notes

REVISION STRATEGY TWO: FOLDING NOTES

Step 1

Write a page of notes on A4 paper. Focus on key ideas, vocabulary, dates, events or people.



Fold in half



Step 2

Create a mindmap summarising your notes and only including the most important information.



Fold in half



Step 3

Write a list of only the most important key words for this topic.



Fold in half



Step 4

Dual code- summarise the topic with **only** symbols, diagrams or pictures.



REVISION STRATEGY THREE: FLASHCARDS

Step 1

Read through a page of notes in your exercise book or a topic from your knowledge organiser. Write the title of this topic on one side of a card.



Step 2

On the other side of the card summarise the topic in short bullet points focusing on:

- Key words
- Dates
- Events
- People



Step 3

Use images or diagrams to summarise key ideas or concepts to help you remember.

Step 4

Revise using your flashcards!

REVISION STRATEGY FOUR: SELF QUIZZING

Research surrounding effective revision tells us that one of the most effective techniques for revision is to self-test.

Self- quizzing requires you to recall information from memory. This not only highlights what you do or don't know but also strengthens your ability to recall that information.

There are many ways to test your knowledge

- Turn over / cover the section of the knowledge organiser you are studying and write as much as you can down from memory as accurately as you can.
- Then flip over / uncover the knowledge organiser and check the accuracy of what you have written down.
- Use a different coloured pen to correct any errors and fill in any gaps.
- Make your own quizzes and tests and return to them after a few days to check how much you can remember.



Look: Identify key vocabulary and fundamental knowledge from your knowledge organiser.

Look and write: write the key words, formulae or important information in the first column.

Cover and write: cover the look and write column. Try to repeat the information in the cover and write column.

Check: check your answer. Make any corrections in the final column in green pen.



Look and write	Cover and write	Check

Look: Read the key information in the look column.

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St. Wilfrid's
R.C. College

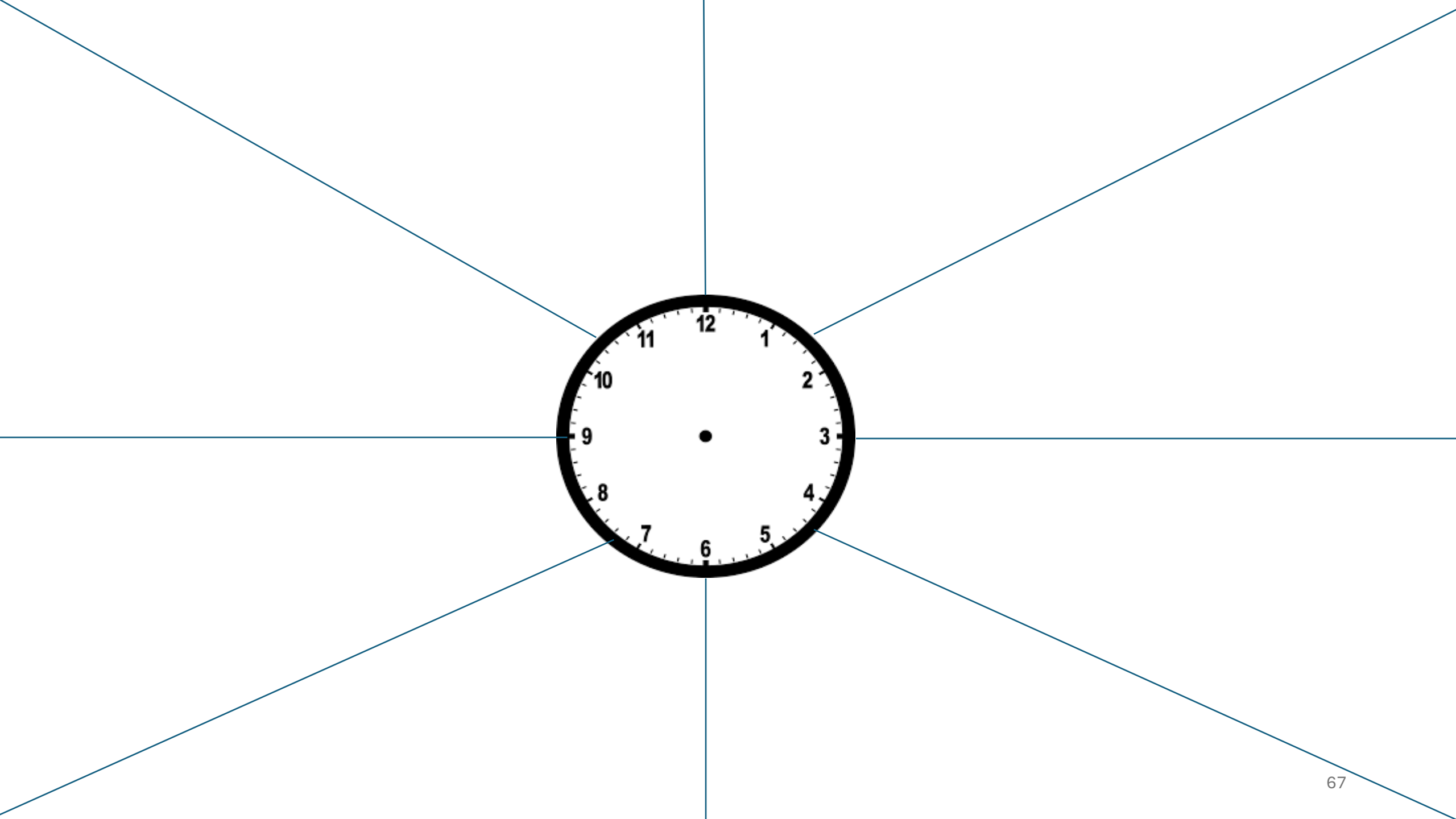
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Check

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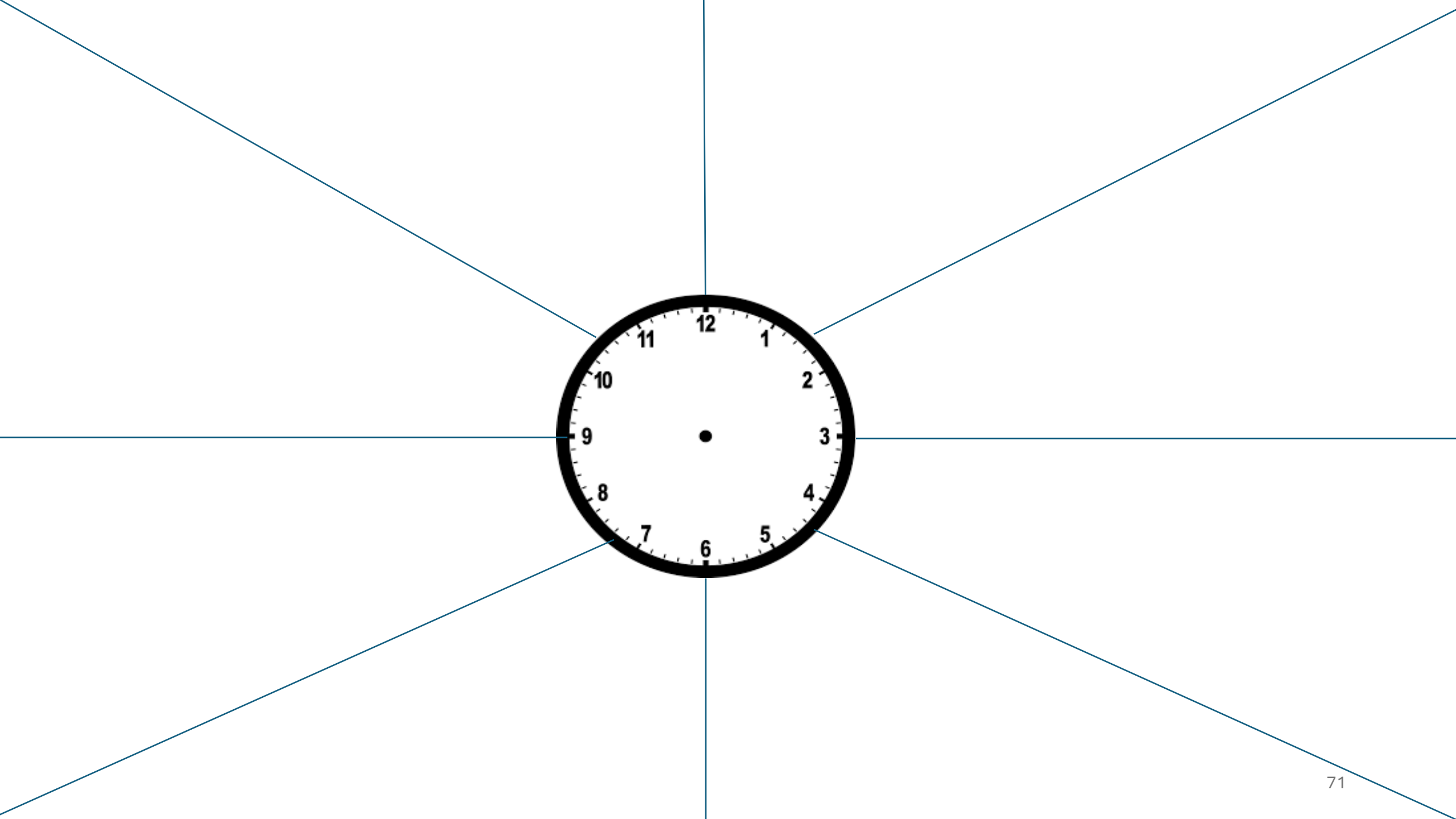
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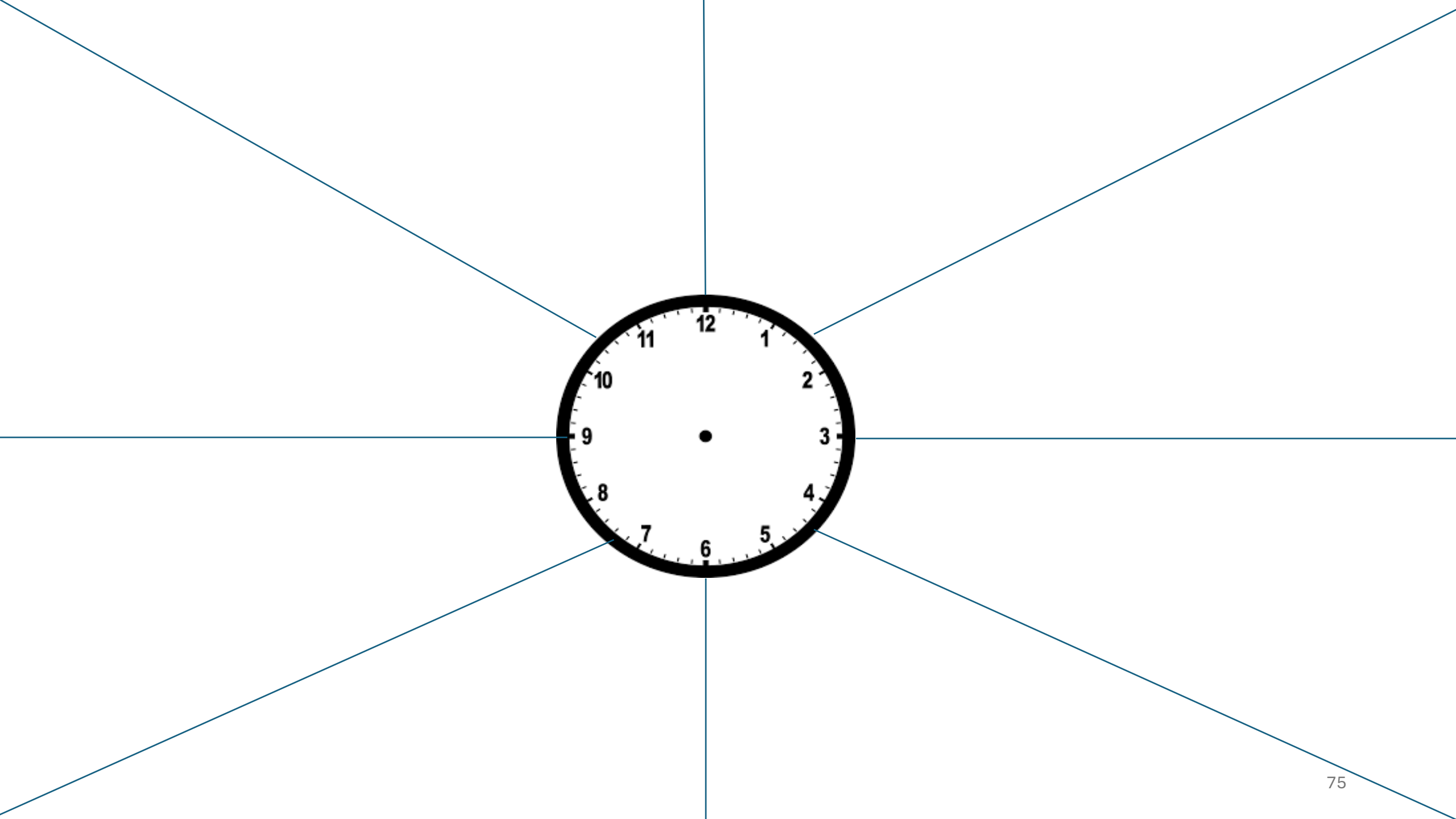
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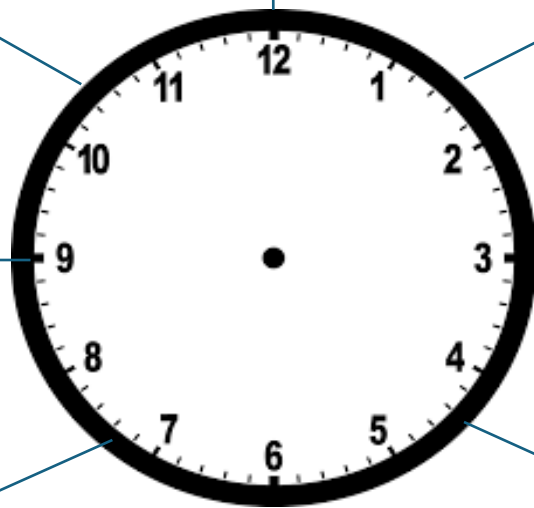
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