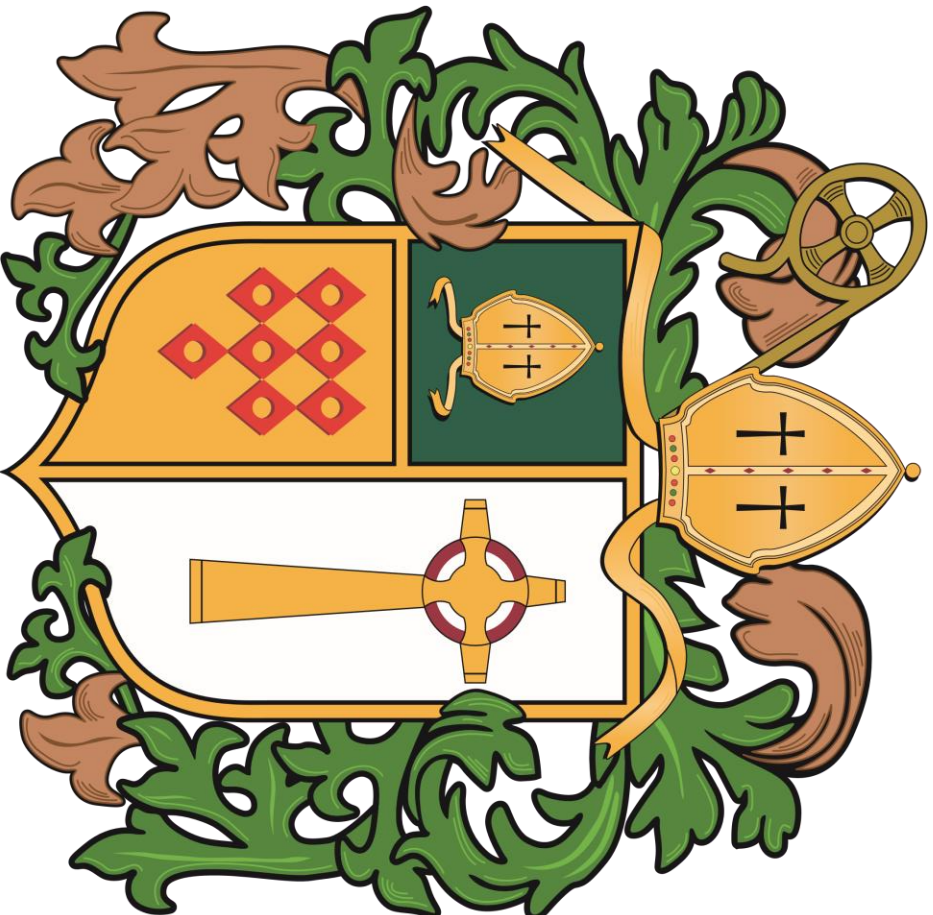


Cycle 1: Year 7



St Wilfrid's R.C. College

Name: _____

Form: _____

Tutor: _____

	Content
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
22-23	ICT
24-28	Maths
29-31	MFL
32	Music
33-38	PE
39-44	RE
45-58	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 7 HW Cycle 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Monday	Maths P.24 (Q1-5)	Maths P.25 (Q1-5)	Maths P.26 (Q1-5)	Maths P.27 (Q1-5)	Maths P.28 (Q1-5)	Maths P. 24 (Q6-10)
Tuesday	English P.12-13 (Q1-10)	English P.12-13 (Q11-20)	English P.12-13 (Q1-10)	English P.12-13 (Q11-20)	English P.12-23 (Q1-10)	English P.12-13 (Q11-20)
Wednesday	Science P.45Q1-5	Science P.49	Science P.53 FIRST SET OF QS	Science P.45 Q6-10	Science P.50	Science P.53 SECOND SET OF QS
Thursday	RE: P.39-41, questions 1-5	MFL: P.26, weeks 1-2, sentences 1-8	RE: P.39-41, questions 6-10	MFL: P.26, week 3, sentences 9-12	RE: P.39-41, questions 11-15	Music: P32
Friday	Geography P 15 7.1.1 Q1-5	History P.18-19 Q1-5	Geography P15 7.1.3 Q1-4	History P18-19 Q6-10	Geography P15 7.1.4 Q 1-5	DT: P.10-11
Year 7 HW Cycle 1	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Monday P. 25 (Q6-10)	Maths P. 26 (Q6-10)	Maths P. 27 (Q6-10)	Maths P. 28 (Q6-10)	Maths P. 24 & 25 (Q1-10)	Maths P. 26 & 27 (Q1-10)	Maths P. 28 (Q1-10)
Tuesday	English P.12-13 (Q1-10)	English P.12-13 (Q11-20)	English P.12-13 (Q1-10)	English P.12-13 (Q11-20)	English P.12-13 (Q1-10)	English P.12-13 (Q11-20)
Wednesday	Science P.47 Q1-5	Science P.55	Science P47 Q6-10	Science P.57 part 1	Science P.57 part 2	Science p.51
Thursday	RE: P.42-44, questions 1-5	MFL: P.27, weeks 5-7, sentences 1-15	RE: P.42-44, questions 6-10	MFL: P.28, weeks 9-10, sentences 1-10	RE: P.42-44, questions 11-14	Art Art: P8-9
Friday	History P.20-21 Q1-5	Geography P17 7.2.1 Q1-4	History P.20-21 Q6-10	Geography P17 7.2.3 Q1- 2 7.2.4 Q1-3	History P18-21	ICT p23, ICT 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

10/9/26	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

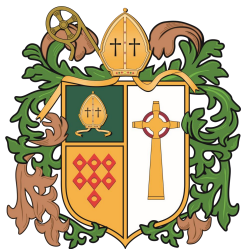
Be fully
equipped

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. Wilfrids RC College - Knowledge Organiser

Year 7 – Art & Design – Under the Sea

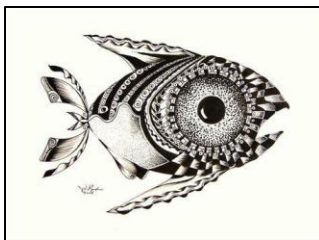
In this module you will learn how to analyse the work of an artist to help improve your drawing skills by:

- 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: Vincent Scarpace

Contemporary Artist. Born in 1971 Buffalo, New York. Best known for his abstract fish art, he describes his work as a personal journey through the use of basic visual elements: line, shape, and colour - resulting in a unique work of art which purposely resemble fish."



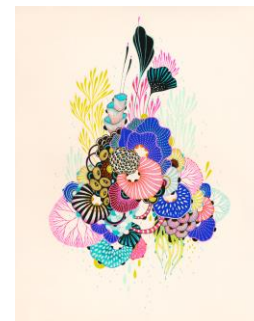
Artist: Yellena James

Yellena James grew up and attended art school in Sarajevo. Her colourful arrangements of organic shapes and tangled lines are at once floral and alien, organic and sci-fi. The intricacy and high detail, along with hints of existing organic shapes lend to the intimacy and believability of each new world. "



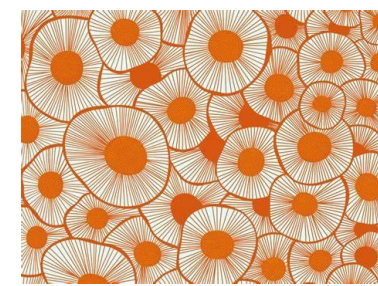
Key Words:

ACCURATE
COLOURFUL
COMPOSITION
SKETCHES
OBSERVATIONAL
EXPERIMENTAL
TONAL
SYMMETRY
REALISTIC



What is a geometric pattern?

A geometric pattern is a pattern consisting of lines and geometric figures, such as triangles, circles and squares, that are arranged in a repeated fashion. Geometric patterns are found in many places, including art and architecture, and they tend to be symmetrical.



What is organic pattern?

Organic patterns are the opposite of geometric patterns – think "growing" when you think of an organic pattern. Instead of straight lines, organic patterns utilize curves, scrolls, vines, leaves, flowers and other curvilinear features.



St. Wilfrids RC College - Knowledge Organiser

Year 7 – Art & Design – Under the Sea

- 1) What are organic shapes?**
- 2) What are geometric shapes?**
- 3) Compare geometric and organic patterns. How are they different?**
- 4) Which artist's work would be most useful for creating an underwater drawing using organic shapes and why?**
- 5) Give three examples of features commonly found in organic patterns.**
- 6) Design your own organic pattern.**
- 7) Design your own geometric pattern.**
- 8) What is tone?**
- 9) Why do we use tone in Art?**
- 10) Show an example of going light to dark using a pencil.**

Key word spellings.

- 1. Symmetry**
- 2. Organic**
- 3. Environment**
- 4. Geometric**
- 5. Experimental**

Knowledge Organiser: KS3 Graphics

3D sketching techniques

Key knowledge

There are a range of 3D sketching techniques which designers use to present their ideas. Each have different features and are used for different reasons.

Oblique

Oblique drawings are created using the front view of an object and then adding a 3D effect by drawing backwards at a 45 degree angle.



Isometric

Isometric is an industry-standard 3D drawing technique which uses vertical and 30 degree lines. No horizontal lines.



Exploded

An exploded drawing shows all parts of an assembly and how they fit together.



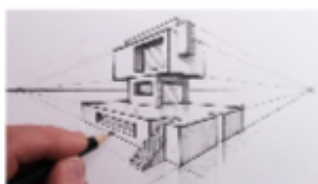
1 point perspective

A drawing has one-point perspective when it contains only one vanishing point on the horizon line.



2 point perspective

Two point perspective uses two points placed on the horizon line.



Sketching is a powerful process to use because it helps discover the best ideas and solutions to a design problem. It is a difficult task to 'freestyle' a complex design out of midair without hashing out the details. Sketching in 3D is important because a 3D sketch gives more information about what a product will look like and how it will function than 2D images. This is important in communicating designs effectively to other people.

Designers use scaled drawings to represent an accurate plan of what we are designing. Proportion is related to scale, it means that the dimensions of a sketch are correct in relation to each other. For example, the width and the height of a table are correctly represented. When something is appropriately scaled it means the designer considered the exact dimensions that are appropriate for that space or product. If this was not done accurately then the item might not fit together or might be too big or too small to work correctly. Scale can be hard to learn, but knowing how to manipulate something and drawing it accurately will give a far better result than haphazardly guessing something will be the right size when completed. You will definitely make fewer design mistakes if you understand the principal of scale.

Key words

Oblique
Isometric
Exploded
One point perspective
Two point perspective
Sketching
2D
3D
Assembly View
Design
Drawing
Horizon
Vanishing

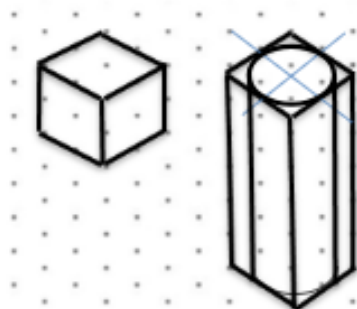
Curriculum Links

Literacy:
Annotation
Communication.
Numeracy:
Planning, dimensions, Scale, proportion
Careers:
Problem solving, sketching skills, communication skills.
Cultural Capital:
Communication, creativity.

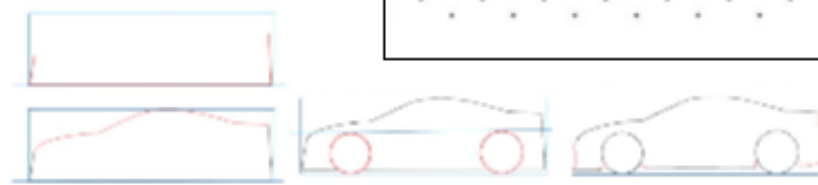
Isometric and Crating skills

Key skills

Isometric drawings are commonly used in technical drawing to show an item in 3D on a 2D page. Isometric drawings, sometimes called isometric projections, are a good way of showing measurements and how components fit together. Unlike perspective drawings, they don't get smaller as the lines go into the distance.



Crating: Using lightly drawn basic shapes to help draw a more complicated design. This can be used for 2D and 3D sketching.



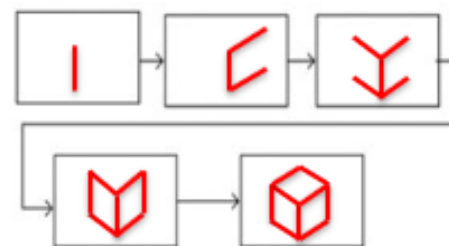
Key knowledge

Rules of Isometric:

- Angles all 30 degrees
- Horizontal lines don't exist
- Cubes create all other shapes – so make sure you are confident in them!
- Make sure you start with a central line – not a 2D shape!

Stages in drawing an isometric cube:

- Draw the first vertical line to the length required.
- Add in the base at 30° angles.
- Create the sides from two parallel, vertical lines the same length as the centre line.
- For the top draw two lines parallel to the two base lines connecting the centre line to the two sides.
- Add in the top back edges of the cube at 30° angles



Key words

Isometric
Crating
Projection
Dimensions
Sketching
2D
3D
Assembly View
Design
Drawing
Horizontal
Vertical
Vanishing
Angle
Parallel

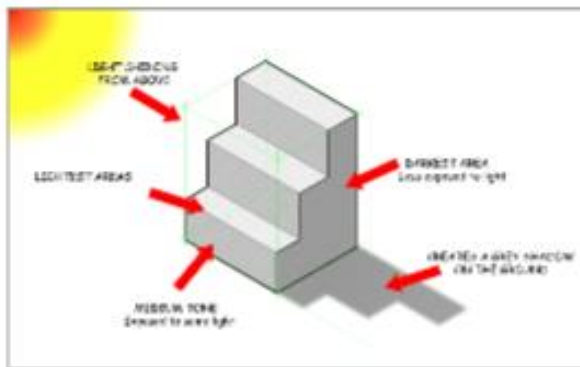
Curriculum Links

Literacy:
Annotation
Communication.
Numeracy:
Planning, dimensions, Scale, proportion
Careers:
Problem solving, sketching skills, communication skills.
Cultural Capital:
Communication, creativity.

Rendering and presentation skills

Key skills

Rendering is applying colour and tone to make sure a product/ design looks realistic. Tone is providing a range of light to dark by shading with pencil. You do that by applying pressure on the pencil in your drawing, by drawing in layers to achieve darker tone, or by using softer pencils for the darker tones.



Key knowledge

How to render materials and textures:

Top tips

- Metal, glass and plastic reflect light – leave white lines to show light in the material
- Wood has lines of grain to show the growth of the tree
- Fabrics have been woven – layer pencil marks in opposite directions to show this
- You can see through glass – don't just colour it all in blue!
- Rubber/silicones are often matt and have grips on them – don't leave white lines
- Make sure you consider where the light is hitting – regardless of material! It'll get darker the further away from the light, and paler close to the light!



Key words

Rendering
Tone
Shading
Pressure
Material
Texture
Reflect
Grain
Matt
Source
Shadow
Drawing
Sketching
Exposed
Opaque
Transparent

Curriculum
Links

Literacy: Annotation Communication. Numeracy: Planning, dimensions, Scale, proportion Careers: Problem solving, sketching skills, communication skills. Cultural Capital: Communication, creativity.
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Structuring your answers in Design Technology

P.E.E Chains

In Technology we use PEE chains to expand our answers so we are communicating our thoughts and ideas clearly. This makes sure that we say what we think and then back up, or justify, our thoughts with explanations and evidence from research which support them.

POINT	Say WHAT you think.	<i>I think the product should be...</i>
EXPLAIN	Say WHY you think it.	<i>This is because...</i>
EVIDENCE	Say what RESEARCH you've done to back this up.	<i>I know this from my research into...</i>

ACCESS FMM

ACCESS FM is an analysis and annotation tool which makes sure we consider all the important design criteria and the impact they have on products we are investigating, designing or evaluating,

A	Appearance	Where did the designer get their inspiration? Could the product look better? Do you think it looks attractive or ugly, Why? What does the product look like? <i>THINK</i> shape, form, materials, size, beauty, ugliness.
C	Cost	Is it affordable to your customer? Will it make a profit? Is it value for money? How much does it cost to make?
C	Customer	What impact would it have on a customers life? Why would a customer buy it? What makes it suitable for them? Who would buy it? Who would use it?
E	Environment	What is the products impact on the environment? <i>THINK</i> batteries, rethink, refuse, reduce, reuse, recycle, lifecycle. How would the product be disposed of? Is the product needed or wanted? How long will it last?
S	Safety	Is the product high quality? Does It meet safety standards? How has the designer considered safety? Could the product hurt anyone? Are there any sharp edges?
S	Size	Is it an appropriate size? Would it work better if it was bigger or smaller? Does it come in different sizes? How big is it?
F	Function	Does the product work? Could the product work better? How does the product work? Why is the product needed? What does the product do? Is it easy to use?
M	Materials/ Manufacture	What impact could the designer's choice of material have on the environment? Would a different material make it better? What material has it been made from? What process would be used to make it?



<i>Useful Context</i>	
Literary	<u>The Gothic</u>
	- Taste shifted from tales of romance and adventure to terror in the mid-18th century - A wide-ranging genre, including <i>Frankenstein</i>, <i>Dracula</i> and <i>Wuthering Heights</i>.
Historical	<u>WWII</u>
	- The story opens in 1943 in an unnamed city, as war is raging across Europe - Approximately 50 million people died in WWII - In Britain, approximately three million people were evacuated
Social	<u>Gender</u>
	- In the 1940s, gender roles were restrictive - Men made a living and were either bachelors or head of the household - Women usually filled the roles of housewife, mother and homemaker, or were single but always on the lookout for a husband.

The Prince of Mist

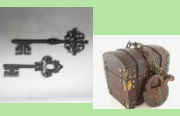
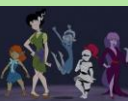
English Cycle 1 Knowledge Organiser



<i>About the...</i>	
Writer	Carlos Ruiz Zafón wrote seven novels, including the bestseller <i>The Prince of Mist</i> . His work has been published in more than fifty countries and honoured with numerous awards.
Text	<i>The Prince of Mist</i> was Zafón's debut novel. The mystery and horror young adult novel was originally published in Spanish in 1993.

<i>Themes</i>	
Theme: An idea that is repeated in a text.	
Theme	Links to Novel
Evil and retribution	This book is ultimately a reworking of the traditional tale of bargaining with the Devil known as a Faustian bargain . The Devil, however, always returns to collect his due.
Deception	The novel is full of plot twists ; characters continually attempt to outwit the Prince of Mist, whilst he tries to deceive his victims.
Time	The Prince of Mist says that 'Time...is an illusion' and he is able to cast his influence and exert his power across generations. Time can not protect those who have a debt with him.
Friendship	Friendship blossoms between Alicia, Max and Roland, only to become plagued by past events involving the Prince of Mist.

<i>Characters</i>	
Max Carver	Max is the protagonist (main character). He is the son of a watchmaker, has moved with his family from the city in order to get away from the war.
Roland	After the move, Roland befriends Max. Roland is older than Max and enjoys diving. His grandfather, Victor Kray, is central to the plot .
Alicia	Alicia is the eldest of Max's siblings (the younger being Irina). She is drives the romantic subplot and, to some extent, can be seen to embody gender stereotypes , especially in Gothic literature .
The Prince of Mist	The Prince of Mist goes by numerous names and is infamous for his wickedness. He is the supernatural villain and is often depicted using Satanic imagery ; he is evil personified .

<i>Gothic Conventions</i>		
<i>Literary Convention: Features of certain genres that readers understand, recognise and accept as techniques to facilitate the plot.</i>		
<u>Feature</u>	<u>Definition</u>	<u>Examples</u>
Stock Characters	A fictional character based on a common literary or social stereotype; an archetype .	
Setting	The surroundings or place in which something is put.	
Mysterious Object	An unusual object which is central to the plot .	
Multiple Perspectives	A story told from different points of view—this is often due to the use of the epistolary form (inclusion of letters).	
The Supernatural	Forces beyond scientific understanding often haunt Gothic texts.	

<i>Word Types</i>		
<u>Type</u>	<u>Definition</u>	<u>Examples</u>
Verb	A word you can 'do'	<i>Run, skip, sing, laugh</i>
Adjective	A describing word	<i>Beautiful, ugly, funny, kind</i>
Noun	Name of a thing, such as an object, a place, or a person.	<i>Chair, Newcastle, Mother</i>
Adverb	A word which describes the action	<i>Quickly, elegantly, cautiously</i>

<i>Language Techniques</i>		
<u>Technique</u>	<u>Definition</u>	<u>Examples</u>
Alliteration	Words that start with the same sound	<i>Precious pictures and paintings</i>
Foreshadowing	Receiving a warning of a future event	<i>A family notices a small dark spot on the ceiling, but ignore it. The pipe later bursts</i>
Metaphor	A descriptive technique that names a person, thing or action as something else.	<i>The circus was a magnet for the children</i>
Onomatopoeia	Words that sound a little like they mean.	<i>Crash, boom, bang</i>
Personification	A metaphor attributing human characteristics to an object.	<i>The sun smiled at the hills</i>
Pathetic fallacy	When the weather reflects the mood of a character	<i>The clouds crowded together suspiciously overhead as the sky darkened.</i>
Simile	A descriptive technique that compares two things using 'as' or 'like'	<i>The trees stood as tall as towers.</i>

<i>Ambitious Vocabulary</i>		
<u>Word</u>	<u>Definition</u>	<u>Examples</u>
Abyss	A deep hole that seems to have no end	<i>She found herself at the edge of an abyss.</i>
Bewilderment	A state of confusion	<i>He stared at his teacher in bewilderment.</i>
Corrupt	To use a position of power to get advantage	<i>The whole department was corrupt, I couldn't trust anyone.</i>
Malicious	Intended to harm or hurt other people	<i>She started a malicious rumour about the girl.</i>
Refuge	Protection or shelter from danger	<i>She fled to her car for refuge from the storm.</i>
Solemnly	In a formal and dignified manner	<i>I solemnly swear that I am up to no good.</i>
Spectre	A ghost	<i>The spectre's presence was apparent.</i>
Tranquil	Calm and peaceful	<i>During the six weeks, the school was tranquil.</i>

7.1a

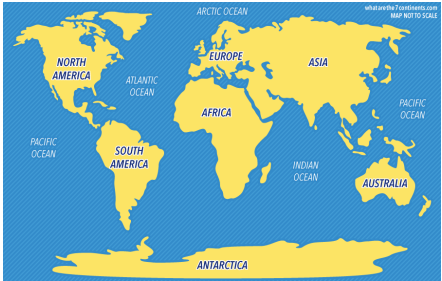
Is our view of the world accurate?



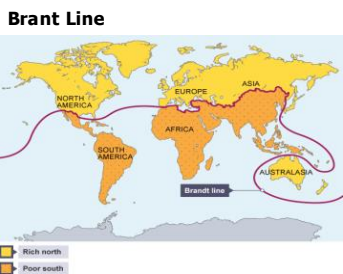
Geography Knowledge Organiser

7.1.1 View of the world and the UK

Continent: A continent is one of the Earth's main, large continuous landmasses.
Country: A country is a distinct political entity with its own government, defined territory, and population.
Ocean: An ocean is a vast body of saltwater, covering approximately 71% of the Earth's surface.
Sea: A sea is generally smaller than an ocean, and often partially or fully enclosed by land.



7.1.2 Classifying countries



HIC: Countries that have a high standard of living, advanced infrastructure, and strong economies.
NIC: Countries that are in the process of industrialising, with increased economic activity and improving living standards.
LIC: Countries with lower standards of living, often with high poverty rates and limited access to healthcare.
GDPpp: A measure of the total economic output of a country divided by its population.
Life expectancy: The average number of years a person is expected to live in a country.
Literacy rate: The percentage of people in a country who can read and write.

Country	GDP per Capita (\$)	Life Expectancy (years)	Literacy Rates (%)	HIC, NIC, or LIC?
USA	65,000	78	99	HIC
Brazil	10,000	75	93	NIC
Nigeria	3,000	54	70	LIC
India	2,000	69	74	LIC
Germany	55,000	81	99	HIC

Limitations of classifying countries:

- It often simplifies complex realities, neglecting income inequality within countries.
- It overlooking crucial factors beyond income like education, health, and social well-being.
- Classifications can be based on outdated data

7.1.3: Life in LICs

The World Bank classifies a LIC as a country with a gross national income per capita, below \$1,045 .

Reliance on agriculture: A significant portion of the economy and workforce is based on agriculture, often with traditional, low-productivity methods.
Low levels of education: Literacy rates and school enrolment, especially for girls, are often low.
Rapid population growth: High birth rates and population growth can strain resources and infrastructure.
Social inequality: Significant disparities in income and access to resources exist within the population.



Why do some countries develop slower than others?

Poor infrastructure (roads/electricity)	Limited access to education and healthcare
High rates of disease	Political instability or conflict
Environmental challenges	Low levels of industrialization
Dependence on farming	Lack of natural resources
Lack of investment	High levels of Debt



7.1.4: Life in HICs

The World Bank classifies a HIC as a country with a high gross national income per capita, typically over \$12,536.

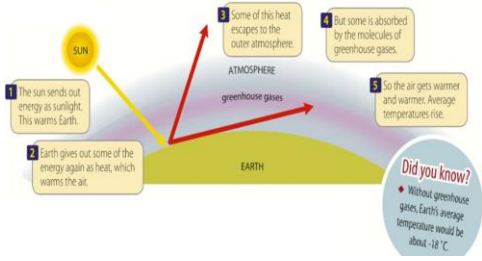
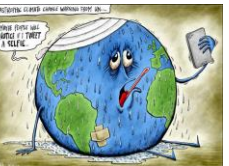
Features of a HIC:
Diversified Economy: Wide range of industries, including manufacturing, services, and technology.
Advanced Infrastructure: Well-developed transportation networks, communication systems, and utilities like electricity and water.
High levels of education and healthcare: Skilled workforce and a healthier population, contributing to long-term economic growth.

What is life like in London?

Many families in London live in overcrowded housing conditions, often in rented accommodation.	Children from low-income families in London are less likely to achieve high grades in school.
A lack of affordable housing in central London forces people to live in areas with limited job opportunities	Air pollution in certain parts of London causes respiratory problems, particularly in low-income areas.
A significant number of people in London are in low-wage, insecure jobs, leading to financial instability.	There are high levels of food insecurity in some of London's poorest boroughs, with people relying on food banks.
Crime rates are higher in areas of London with greater deprivation, often linked to lack of opportunity	Some parts of London have a shortage of green spaces and recreational facilities, making it difficult for families to enjoy outdoor activities.



7.1.5 Climate Change



Natural climate change vs Anthropogenic

Volcanic Eruptions release Co2 into the atmosphere.	Burning fossil fuels (coal, oil, natural gas) releases Co2.
Deforestation means less Co2 is absorbed.	Cattle farming produces methane.
Rotting waste from landfills produces methane gas.	Forest fires release Co2.
Decomposition of plants/animal's releases methane and Co2.	Factories release various greenhouse gases
Cement production releases Co2.	Oceans naturally release Co2 during warming periods.

Climate change facts:

- Climate change can affect all countries.
- The Arctic is warming faster than the rest of the world.
- Rising sea levels are caused by melting ice and warmer oceans.
- Humans have an overwhelming impact on climate change.
- Extreme weather events like hurricanes and droughts are becoming more frequent.
- Some countries contribute more to climate change than others.
- Some plants and animals are at risk of extinction due to climate change.
- Climate change will affect food production.

7.1a

Is our view of the world accurate?



Test yourself

7.1.1 View of the world and the UK

1. Identify on the map:
 - 7 Continents
 - 5 Oceans
2. What is the difference between a continent and a country?
3. What is the difference between an ocean and a sea?
4. Label on the map the countries of the UK
5. True or False:
 - a. Africa is a country
 - b. UK is a country
 - c. Cardiff is the capital of Wales
 - d. London is the capital of England
 - e. The Norfolk broads is in the Northeast of England
 - f. The Giant's Causeway is in Ireland



7.1.2 Classifying countries

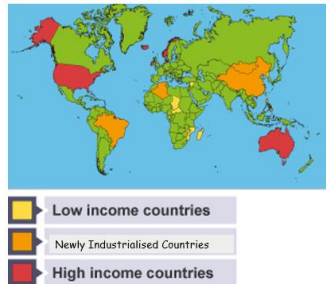
1. Give the definition of HIC.
2. Give the definition of LIC.
3. Give two differences between a LIC and a NIC?
4. Give two measures of development.
5. Give two reasons why the Brandt line is not appropriate anymore.
Success Criteria:
One point and explain why it is bad
One point and explain why it is bad



6. LIC or HIC:
 - a. Have spare food
 - b. Live until the age of 50
 - c. Die from starvation
 - d. Have most of the world's industry
 - e. Be able to read and write
 - f. Stand in a 2-day queue to see a doctor
 - g. Live until you are 70
 - h. Be overweight

7.1.3: Life in LICs

1. Describe the distribution of LICs
Success criteria:
Trend-General pattern
Examples-Highest and lowest
Anomalies-Doesn't fit the pattern



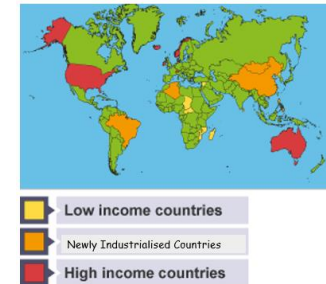
2. Give two features of a LIC.

3. Give two reasons why some countries are LICs.
Success criteria:
Give the factor
Explain how the factor means they cannot develop

4. Give two reasons why there are differences within LICs.
Success criteria:
Use Nigeria as a case study
Give one factor of why some areas are richer than others
Explain how the factor makes it more developed
Give another factor of why some areas are richer than others
Explain how the factor makes it more developed

7.1.4: Life in HICs

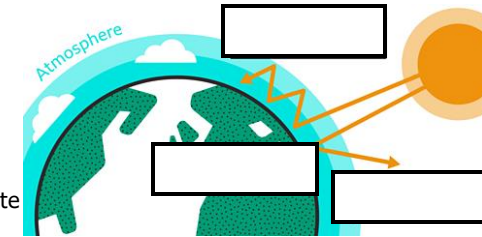
1. Give the definition of a HIC.
2. Describe the distribution of HICs
Success criteria:
Trend-General pattern
Examples-Highest and lowest
Anomalies-Doesn't fit the pattern
3. Give two features of a HIC.
4. Give two reasons why some countries are HICs.
Success criteria:
Give the factor
Explain how the factor means they cannot develop



5. Give two reasons why there are differences within HICs.
Success criteria:
Use London as a case study
Give one factor of why some areas are richer than others
Explain how the factor makes it more developed
Give another factor of why some areas are richer than others
Explain how the factor makes it more developed

7.1.5 Climate Change

1. Complete the diagram of natural climate change.
2. Give the definition of anthropogenic climate change.
3. Give two natural causes of climate change.
4. Give two human causes of climate change.
5. Explain two impacts of climate change on people.
Success criteria:
Give two impacts
Explain why each impact is bad for people
6. Explain two impacts of climate change on the environment.
Success criteria:
Give two impacts
Explain why each impact is bad for the environment.
7. Give two ways your life could be impacted by climate change.



7.1b

How is the UK changing?

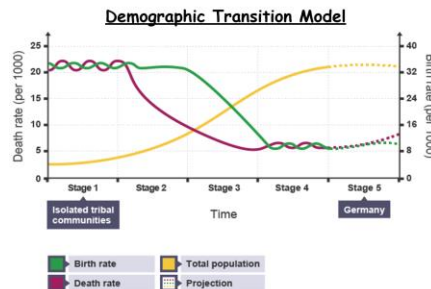


Geography Knowledge Organiser

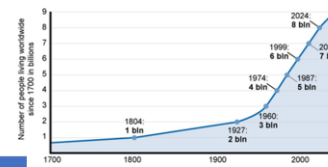
7.2.1 UK population

Change = When something becomes different over time
Population density = Number of people per square km
Natural increase = Higher birth rate than death rate
Birth rate = Number of live birth per 1000 per year
Life expectancy = The average age someone is expected to live
Death rate = Number of deaths per 1000 per year

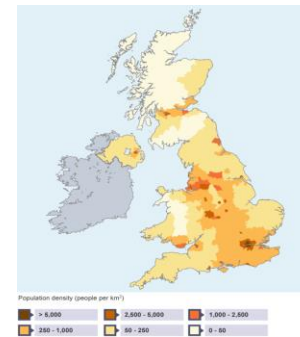
Densely populated	Sparsely populated
Pleasant climate Gentle slopes A good supply of food Raw materials in the ground Clean water supply Lowland, flat area Industry and jobs Good communication links	Dense forest in the area Very cold or very hot Area has natural hazards High crime rate Infertile (poor) soils Climate is very dry Only primary sector jobs Not much investment



World Population



Population density



7.2.2 Migration

Migrant - A person moving from one country to another, usually for economic gain
Immigration - Process where people move country
Emigration - Process where people leave a country
Push factors - Negative reasons to move from a country
Pull factors - Positive reasons to move to a country

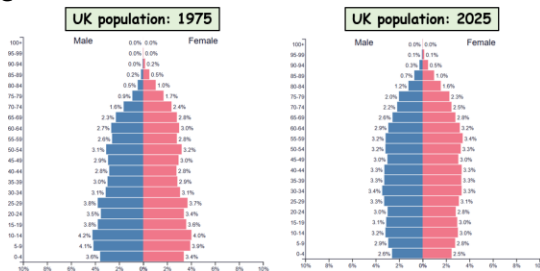
PUSH PULL

London is a big wealthy city. There are a lot of rich people living there. The night-life is amazing.	Unemployment is high in the source country (where people move from)
In the UK, healthcare is free because of the NHS.	You will receive a very good education in the UK.
There are more jobs available for semi-skilled workers who have worked in a factory before.	There are opportunities to earn more money in the UK, because the average incomes are higher.
Some people's monthly salary is not enough to support their family and enjoy a good quality of life.	It is easier to move because of the availability of low cost airlines and accessible airports.
The standard of living is better in the UK.	The minimum wage is twice as much in the UK (£12.21).
There are not many opportunities to develop skills needed for employment.	The working hours are much longer.
Even after the UK's departure from the EU, Europeans can still migrate by getting a UK visa.	Desire to experience life abroad and to learn the English language.

7.2.3: Population structure

Key changes:

- Falling birth rate
- Falling death rate
- Higher life expectancy
- Ageing population
- Decreasing working population



+ Benefits (Good)

- Challenges (Bad)

Many elderly people have disposable income which they are spending on leisure activities. This is called the 'Grey Pound'. This means that the economy grows.	Loneliness is not as big a problem in some cities as care homes and retirement resorts provide community-based activities for elderly people.
There is a challenge of who will look after the ageing population when they become too frail.	Retirement resorts and care homes are built which creates jobs for people in construction.
There are less people in the workforce as elderly people are retired, meaning not as much tax is being paid to pay for the pensions.	Current state pension are not paying enough because there are so many to pay, therefore elderly people are poor.
Deprivation (poverty) is being experienced by a growing number of pensioners.	Many elderly people go on holiday abroad and spend their money which can help some poorer countries.
UK shops make money from elderly spending their pensions.	It costs a lot of money for healthcare and other services that elderly people need.

Causes of an ageing population

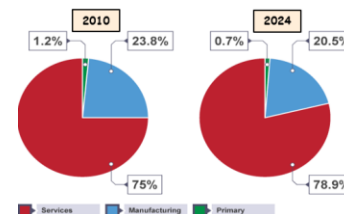
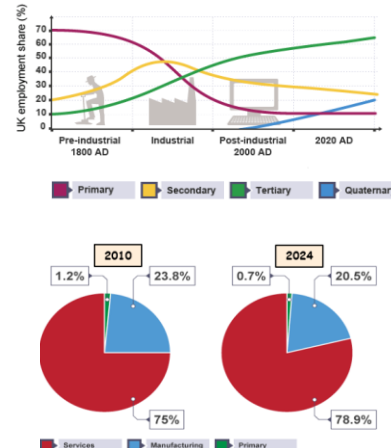
Improved healthcare
Lower fertility rates as women have careers
Improved living conditions = less deaths
Healthier diets = people living longer

7.2.4: Industry change

Economic activities:

Primary - collect materials from the earth e.g. farming
Secondary - making or manufacturing things e.g. cars
Tertiary - provide services e.g. teaching
Quaternary - hi-tech work like researching diseases

North South Divide



	The north	The south
Economic activity	Heavily dependent on the public sector.	Private sector dominant.
Incomes	Lower incomes, eg in 2018 the average household gross disposable income was £16,095 in the NE region. Benefits make up higher proportion of incomes.	Higher incomes, eg in 2018 the average household gross disposable income was £24,318 in London.
Unemployment	Higher unemployment, eg March 2022 - NE region = 5%.	Lower unemployment, eg SE region = 3.2%.
House prices	Lower house prices. Average prices in NE for May 2021 = £143,129.	Higher house prices. Average price in SE = £350,016.
Education	Pupils in the north are likelier to finish school with poorer grades than those in the south.	Pupils in the south are more likely to achieve top GCSE and A Level grades eg life expectancy in the SE in 2020 = 80.6.
Life expectancy	Lower life expectancy, eg life expectancy in the NE in 2020 = 77.6	

7.2.5 Environmental change and the future

Extreme weather - weather that is unusual or unexpected. This can be severe or unseasonal weather.

Case study: Extreme hot spell - June and July 2018

The Met Office reported that the summer of 2018 was one of the hottest and driest in the UK since 1910, when records began. Some regions received less than 10 per cent of their usual average rainfall.

Negative impacts:

- Water levels in reservoirs fell. This was a concern because reservoirs are an important source of water for the UK.
- A lack of water for crops led to poorer harvests.
- The heat also caused health issues, such as dehydration and heart failure. The number of people seeking hospital treatment during these months was the highest since records began in 2010.



Case study: Extreme cold spell - February 2021

An overnight temperature of -22.9 °C was recorded in Aberdeenshire, Scotland. This was the lowest UK recorded temperature since 1995.

Negative impacts:

- Snow and blizzards caused travel disruption across many parts of the UK.
- Waste collections were suspended as bins were not emptied.
- Wind speeds reached around 40 mph in coastal areas, causing dangerously high waves in places like Cornwall.
- Cold weather alerts were issued by NHS England and Public Health England.



7.1b

How is the UK changing?



Test yourself

7.2.1 UK population

1. Describe the population density of UK population

Success criteria:

- Trend
- Examples
- Anomalies

2. Give two reasons why some places are sparsely populated.

Success criteria:

Give the factor

Explain how the factor means less people live there

3. Give two reasons why some places are densely populated.

Success criteria:

Give the factor

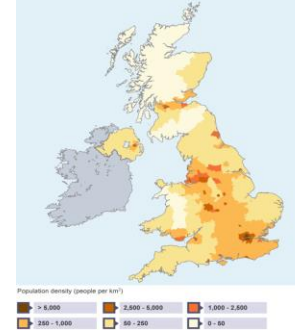
Explain how the factor means more people live there

4. Explain what the demographic transition model tells us about population.

Success criteria:

Describe the birth and death rate for each stage

Explain why the birth and death rate is for each stage



7.2.2 Migration

1. Give the definition of immigration

2. Give the definition of emigration.

3. Give two reasons why people migrate away from their country.

4. Give two reasons why people migrate to a new country.

7.2.3: Population structure

1. Annotate the UK's population pyramid

Success criteria:

Identify if the following is high or low

- Birth rate
- Death rate
- Life expectancy

Identify if it is an

-Youthful or ageing population

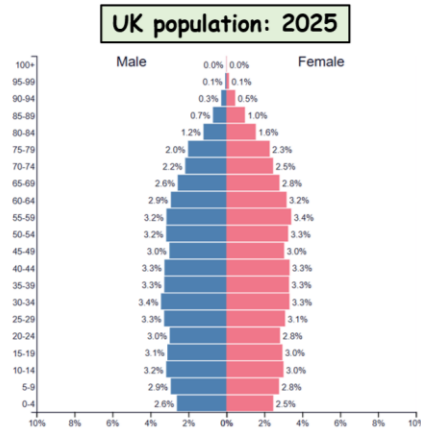
Explain why it is like this

2. What are the benefits and challenges of an ageing population?

Success criteria:

Give two challenges and explain why they are a challenge

Give two benefits and explain why they are a benefit



7.2.4: Industry change

1. Give an example of each economic sector:

- Primary
- Secondary
- Tertiary
- Quaternary

2. For each economic sector:

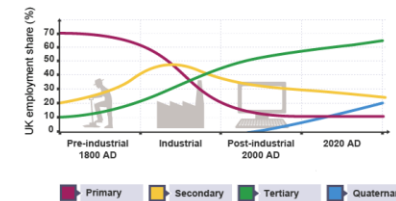
-Describe the trend

3. Give two reasons why there is a north/south divide.

Success criteria:

Give the factor

Explain how the factor caused the north/south divide

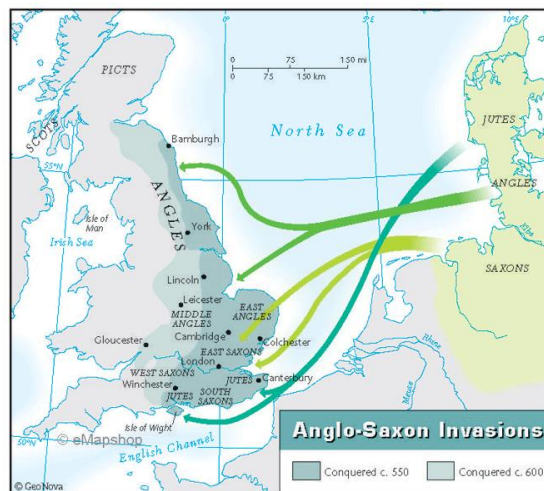


7.2.5 Environmental change and the future

1. Give an example of extreme weather event faced in the UK.

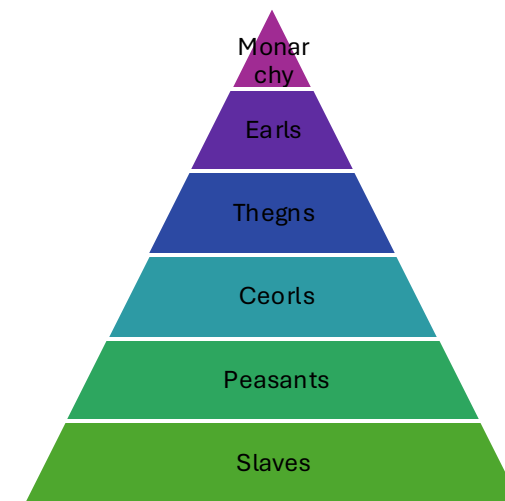
2. Give two reasons why the UK is facing more extreme weather events.

The Anglo Saxons Knowledge organiser



Law and order – Trial by ordeal

Trial by Cold Water	If sank = innocent
Trial by Hot Water	If arm healed after 3 days = innocent
Trial by Fire	If soles of feet healed = innocent



Angles/Saxons	people who came from Germany in the 5th century
Vikings	people who came from Scandinavia in the 8 th century
Witan	members of a council who made decisions e.g appoint King
Thegn	a person holding land in return for a service (farming)
Pagan	a set of religious beliefs
Ceorls	a person of the lowest class, below a thegn
Trial by Ordeal	a painful test to determine guilt/innocence
Wergild	money paid to relatives of a murder victim
Danelaw	law held by the Danes before the Norman Conquest
Tithings	a grouping of men, (10) for legal/security purposes
Dowager	a widow with a title from her late husband
Heir	a person legally entitled to the throne after a death
Advocate	a person who publicly supports a particular cause
Martyr	someone who is killed for their beliefs
Anglo Saxon Chronicle	a collection of accounts recording the history of the Anglo Saxons
Beowulf	an Anglo Saxon poem
Bard	a poet
Burhs	an Anglo Saxon fort or settlement

Golden Age? 👍

- ✓ Jewellery and riches found
- ✓ Art, books, poems, Anglo Saxon Chronicle, geography and astronomy
- ✓ Castles built, churches built
- ✓ Horse racing, board games, hunting, entertainment
- ✓ Children toys, balls, spinning tops
- ✓ Travel and trade routes

Dark Age? 👎

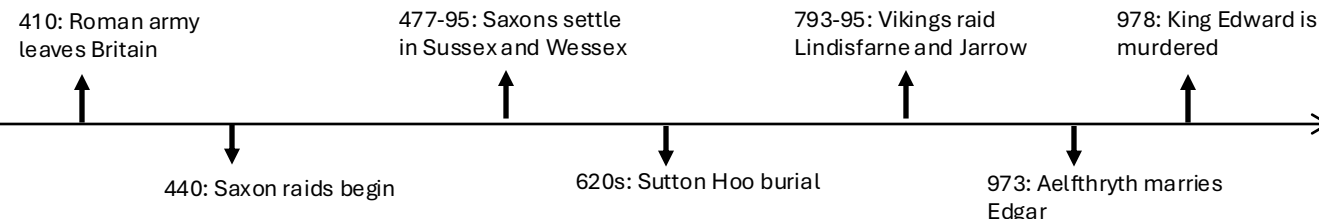
- ✗ Slavery
- ✗ Social inequality – feudal system
- ✗ Harsh punishments for small crimes
- ✗ Invasions and threat of invasion
- ✗ Risk when travelling, violence occurred
- ✗ Few people could read

From **43 AD until 410 AD** southern Britain was part of the Roman world.

After the last Roman soldiers left Britain, new people then came in ships across the North Sea. Historians call them **Anglo-Saxons**.

In the years 400-700 AD Britain was invaded and settled by different groups of people coming from northern Germany and southern Scandinavia. Some Anglo-Saxons came looking for land to farm. Their own lands often flooded, making it difficult to grow enough food.

Whole families crossed the North Sea in small boats. They brought their tools, weapons, belongings and farm animals with them to Britain. They founded many villages in Britain.



People wore woollen cloth or animal skins. Men wore tunics, with leggings and women wore long dresses.



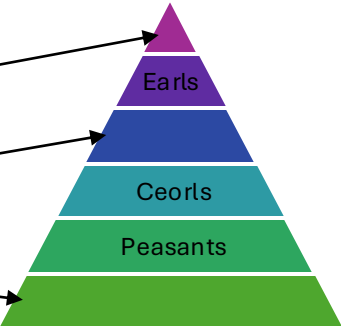
Houses built of wood and had thatched roofs



Augustine was sent from the Pope in Rome in 597 to persuade the King to become Christian

Y7 Cycle 1: Topic 1 The Anglo Saxons

Retrieval Questions

Question	Answer
1. In which century did the Angles and Saxons come to Britain?	
2. What was the name of the council that advised and chose the king?	
3. What was the name of the monk who was sent by the Pope in 597AD to spread Christianity in England?	
4. What religion were Anglo Saxons before they became Christian	
5. What were Anglo-Saxon houses made from?	
6. Fill in the gaps in the hierarchy of Anglo Saxon society 	
7. What is an heir?	

Question	Answer
8. Describe trials by ordeal	
9. Give two reasons why the Anglo Saxon period could be described as a 'golden age'	• •
10. Give two reasons why the Anglo Saxon period could be described as a 'dark age'	• •

The Normans Knowledge organiser

Did the Normans bring a 'truck-load of trouble' to England in 1066?
Simon Schama

Norman monarchs:



William I
1066-1087

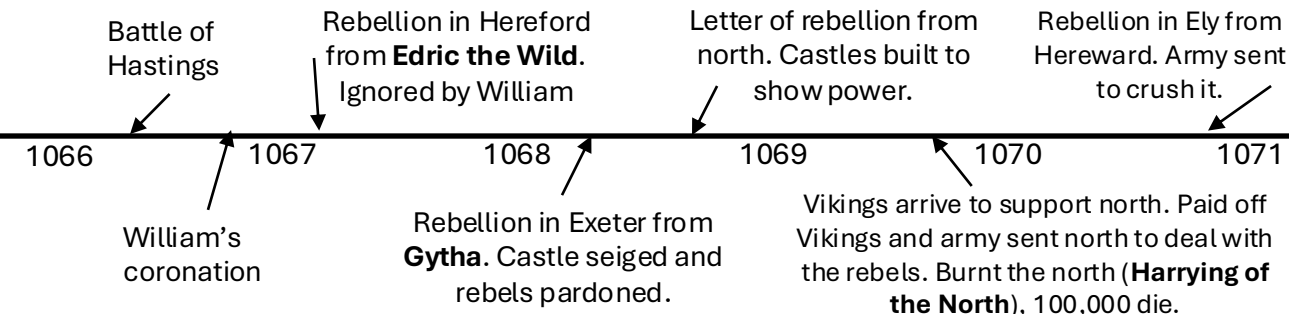


William II
1087-1100



Henry I
1100-1135

Between 1066-1071, the Normans asserted their authority by dealing with rebellions:



The events of 1066

- **Edward the Confessor** died with no heirs
- The Witan chose **Harold Godwinson** to be king

Claimants to the throne:

- **Harold Godwinson** – Edward's brother in law, Earl of Wessex, powerful
- **William, Duke of Normandy (in France)** – Cousin of Edward, Edward and William may have promised him the throne
- **Harald Hardrada** – King of Norway, Viking, lost Battle of Stamford Bridge against Harold Godwinson
- **Edgar Atheling** – Great-nephew of Edward, last Anglo-Saxon prince, only teenager.

William defeated **Harold Godwinson** (Anglo-Saxons) in the **Battle of Hastings**.

The Normans built a lot of castles:

- Some historians think they built over 1000.
- Most of these were **motte and bailey** castles and were made of wood.



- Some historians think they were built as **military fortresses**. Other historians think they were just **status symbols**.
- **Chepstow Castle** is one of the first stone structures. It has a great keep.
- **Old Sarum** is a very large motte and bailey. The bailey was so large it included a cathedral.

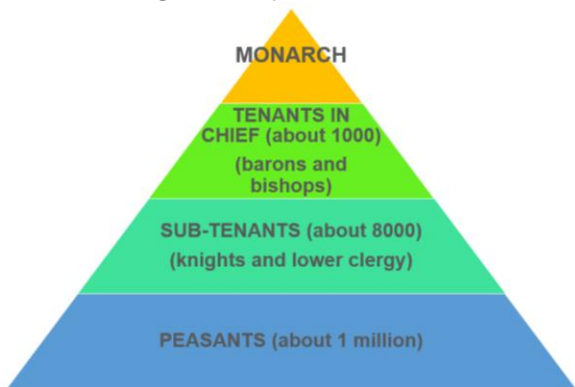
Key terms

Archbishop	A senior church leader
Authority	The power to give orders
Earl	A Norman lord
Feudal system	A system where land is loaned or rented in return for soldiers
Harrying	Meaning to burn or destroy
Monarch	A king or queen of a country
Monastery	A place where monks or nuns live
Peasant	A poor person who lives and works in the countryside
Sovereign	Another word for monarch

The impact of the Normans on society.

The Feudal System:

- Monarch rented land to **tenants-in-chief**
- **Tenants in chief** gave army to William
- **Sub-tenants** gave army to William



- Nearly all **land went to the Normans**. Of 1000 landowners, only 13 were English.
- Peasants: many **freemen became villeins** due to high tax. Only 14% were freemen in 1086.
- **Slavery** was abolished

Key aspects of Norman rule:

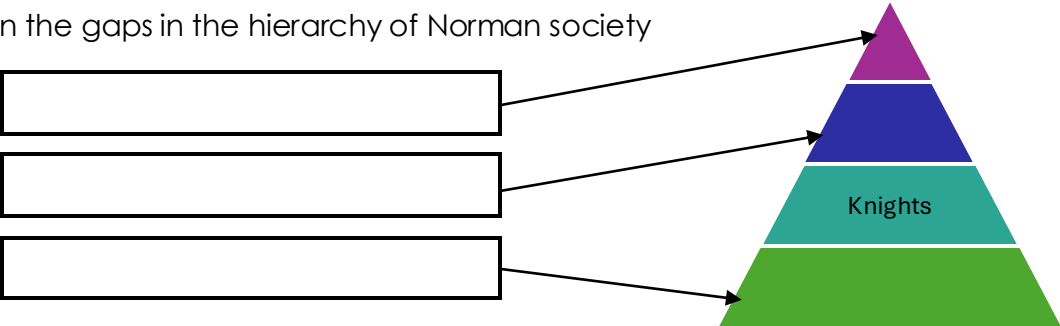
- The Normans tackled corruption in the Church. Stigand was replaced with **Lanfranc** as Archbishop of Canterbury. Only one English bishop remained.
- Lots of **new monasteries** were built.
- Normans used Anglo-Saxon government, but changed personnel and introduced **Latin**.
- New laws introduced, including **trial by combat** and **murdrum**.
- A survey was completed of landowners in England. This is known as the **Domesday Book**. It made tax effective.

The end of the Normans:

- Henry I's son William drowned on the White Ship in 1120.
- His daughter Matilda became queen in 1141, but the barons supported his nephew Stephen.
- Stephen & Matilda fought a civil war called 'the anarchy'
- Stephen died in 1154, Matilda's son Henry II became King – a Plantagenet.

Y7 Cycle 1: Topic 2 The Normans

Retrieval Questions

Question	Answer
1. Name two people who claimed the English throne in 1066.	
2. Give one example of "trouble" the Normans faced after 1066	
3. What was the Harrying of the North, and what impact did it have on people?	
4. Why did the Normans build so many castles?	
5. How did life change for peasants under Norman rule?	
6. Fill in the gaps in the hierarchy of Norman society	
	
7. What is a Sovereign?	

Question	Answer
8. What is a motte and bailey castle ? 	
9. Give two reasons why William built castles in England.	
10. Give two reasons why the Normans caused trouble in England after 1066.	

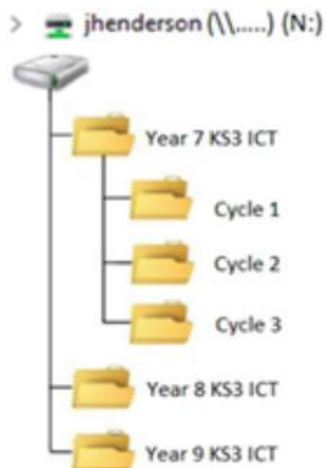
File and Folder Naming Conventions.

Naming your Folders and Files with descriptive names makes it easier to find information later.

- Stuff.jpg ❌
- Homework_2014_Nov.xls ✅
- ResearchTaskOnFrogspawn.doc ✅
- Document1.doc ❌

Folder Structure Conventions at KS3

Creating a simple Folder structure now with descriptive names makes it easier to find information later.



ICT & Computing Knowledge Organiser

Year 7 – Cycle 1 - Using Computers Safely, Responsibly and Effectively at St Wilfrid's School

Remember your school access username, password and school email address

St Wilfrids Computer Network Access Details

Your Name: John Smith Class: 7R1
 Your School Email Address: 11johnsmith@st-wilfrids.org
 Your School Username: 11johnsmith
 Your School Password:

Use your School Username to log onto the school computers.

Use your School Email Address to log onto Microsoft Teams.

Keyboard Short-Cuts

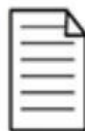
Copy	Ctrl-C
Paste	Ctrl-V
Save	Ctrl-S
Undo	Ctrl-Z

Phishing Awareness Tips

1. Make sure you read the full email address of the sender. If the email address looks suspicious, report it.
2. Hover over all URL links before clicking on them to make sure they are legitimate.
3. Any email with a URL or file attachment should be considered high risk.

AUP

An Acceptable Use Policy (AUP) is a document saying what a user can and can't do when using computers



Browsers

Use this software to access Teams and the Internet



Chrome



Edge

Key Software at KS3 ICT



Microsoft Teams

Word

PowerPoint

How to make your password secure (STRONG).

5 PARENT AND TEACHER TIPS FOR STRONG PASSWORDS

Ensure your password does not contain your name, birthday, or common items.

Do not use the same password for multiple online accounts.

Try using a longer, easier to remember, passphrase instead of a password.

Use a combination of characters, letters, and uppercase letters.

Avoid reusing, remixing, and sharing passwords with others.



Here are the **15 knowledge questions with answers** based on the image:

General Understanding of ICT

Q1. What does ICT stand for in the knowledge organiser?

Q2. What is the main theme or topic of this knowledge organiser?

File and Folder Naming

Q3. Why is it important to use descriptive names for files and folders?

Q4. Which of the following is a good example of a file name: *Stuff.jpg*,

Q5. What is one problem with naming a file "Document1.docx"?

Folder Structure

Q6. What is the purpose of creating a simple folder structure?

Q7. Name one example of a folder shown in the KS3 structure

Security and Passwords

Q8. What three pieces of information must you remember to access the

Q9. Give one tip for making a strong password?

Q10. Why should you avoid using the same password for multiple

Phishing Awareness

Q11. What should you check before trusting an email sender?

Q12. What should you do before clicking on a link in an email?

Q13. What type of email attachments should be treated as high risk?

Software and Shortcuts

Q14. Name the item of software used at KS3 ICT to manage files and

Q15. Name the keyboard shortcut for 'CUT'?

Q16. Name the keyboard shortcut for 'CUT'?

Q17. Name the keyboard shortcut for 'CUT'?

Q18. Name the keyboard shortcut for 'CUT'?

Year 7 : Unit 1 The Decimal Number System

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

- ❖ Understand place value and exchanging between columns in a place value grid
- ❖ Understand how to use place value grids to multiply and divide integers by powers of 10 and to interpret very large integers
- ❖ Understand how to use place value grids to interpret decimal numbers and to multiply and divide decimals by powers of 10
- ❖ Understand how to use number lines to represent positive decimal numbers and find numbers between numbers
- ❖ Understand written methods of addition and subtraction with positive

Keywords:

Base 10
Exchange
Integer
Digit
Multiply
Divide

Multiplying and dividing by 10s

Each position in the decimal number system is 10 x greater than the position to its right.
We can use this relationship to multiply and divide by 10, 100 and 1000.

Thousands are 100 times greater than tens because they are two places apart and $10 \times 10 = 100$.

Decimals and number lines

Decimals can be represented on a number line.

We can divide the length between 0 and 1 into 10, 100, 1000, 10000, ... equal parts.

Between any two decimal numbers, we can always find another decimal.

Base 10

We have a **decimal number system** based on the number 10.

We can use **base 10 blocks** to represent **integers** (whole numbers).

We sometimes need to **exchange** between place value columns to write numbers using the **decimal number system**.

Thousands	Hundreds	Tens	Ones
		10	
	1	0	0

Decimals

Decimals are parts of whole numbers (**integers**).

The **decimal point** shows us where the integers end, and the **decimal places** start.

When we perform operations on decimals we need to think about the position of the decimal point and the value of each **digit**.

Ones	Tenths	Hundredths	Thousandths
1	10	1	1

Adding and Subtracting

When adding, we **exchange** between the place value columns to correctly write the total.

When subtracting we sometimes need to **exchange** between place value columns.

Tens	Ones	Tenths	Hundredths
1	0	5	4
	4	5	6

1 5 1 0

Hundreds	Tens	Ones
4	14	8
3	5	6

1 9 2

Year 7 Unit 1 Homework Questions

- 1 What number is represented by these blocks?
- 2 Write 32 tens using the decimal numbers system
- 3 Write 300 012 004 in words
- 4 Write twelve million, six hundred and two in digits
- 5 Work out
 3040×10
 $60\,200 \div 100$
- 6 Order 5.74, 5.341, 5.5 from smallest to largest
- 7 Work out
 5.9×100
 $6.83 \div 10$
- 8 Which number is closest to zero? 0.12, 1.00 or 0.5
- 9 Work out
 $28.59 + 1.26$ $9.38 - 4.5$ $36 + 8.214$
- 10 Write two different decimal numbers between 0.4 and 0.5

Year 7 : Unit 2 Properties of Arithmetic

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

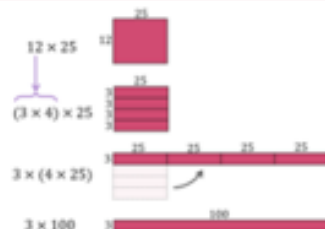
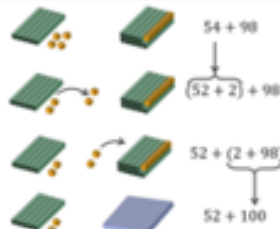
- Apply understanding of expressions as a combination of numbers and operators to compare, evaluate and identify equivalent expressions and that inverse operations 'undo' each other
- Use inverse operations to generate addition/subtraction and multiplication/division fact families with integers and decimals
- Understand that in sums and products the order of the numbers can be changed without affecting their value and using this to compare numerical expressions without calculating
- Use commutativity to rearrange and evaluate numerical expressions
- Use associativity to regroup and evaluate sums and products
- Evaluate numerical expressions by decomposing and using the distributive property
- Re-write and evaluating products in different ways using decomposition and the distributive property
- Deepen understanding of multiplication by multiplying multi-digit positive numbers using multiplication grids

Keywords:

Compare
Evaluate
Inverse
Product
Sum
Expression
Commutativity
Associativity
Decomposition
Distributivity

Decomposition

Using decomposition and the associative property can make calculations easier.



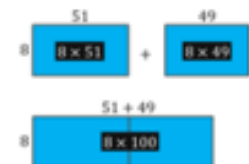
Distributivity

The distributive property tells us: $4 \times (3 + 5)$ has the same value as $4 \times 3 + 4 \times 5$

We can use the distributive property to make some expressions easier to evaluate.

$$4 \times 8 = 4 \times 4 + 4 \times 4$$

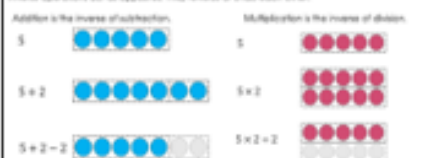
$$8 \times 51 + 8 \times 49 = 8 \times 100$$



Numerical expressions

A numerical expression is a combination of numbers and operators which can be calculated to find its value.

Inverse operations are opposites. They reverse or undo each other.



Fact Families

A fact family is a group of related facts that use the same three numbers (integers and decimals) and a pair of inverse operations.

We can have addition/subtraction fact families and multiplication/division fact families.



Commutativity

If an operation is commutative, the order of the numbers can be swapped without the result changing. $a + b = b + a$ and $a \times b = b \times a$ are commutative.



Rearranging

Commutativity means calculations can be rearranged without changing their values.

We can rearrange calculations to make them easier to work out.

$$142 + 67 + 58 + 33$$

$$= 142 + 58 + 67 + 33$$

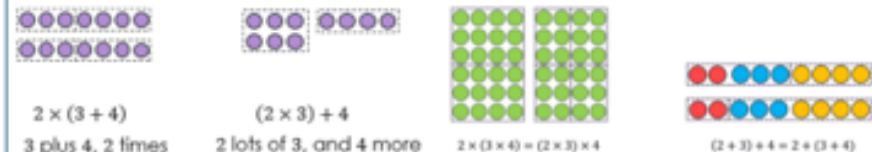
$$= 200 + 100$$

$$= 300$$

Associativity

Brackets are grouping symbols. Numerical expressions inside the brackets have **priority** over any operations outside the brackets.

If an operation is **associative**, the grouping of numbers can be changed **without** affecting the result.

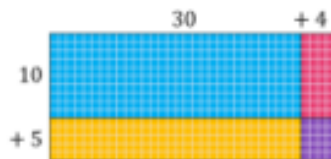


Methods of multiplication

We can decompose numbers and use distributivity to multiply multi-digit numbers more easily.

We can use multiplication grids to multiply numbers that have been decomposed.

$$34 \times 15 \text{ is the same as } (30 + 4) \times (10 + 5)$$



$\times$	30	+4
10	300	40
+5	150	20

$\rightarrow 340$
 $\rightarrow 170 +$
 510

Year 7 Unit 2 Homework Questions

- Write the expressions from smallest to largest: $3+4$, $4-3$, 3×4 , $4 \div 3$
- Rearrange these calculations to make them easier to work out.
 a) $25 \times 12 \times 4$ b) $5 \times 68 \times 20$
- Fill in the blanks
 $28 + 97$
 $= (25 + \dots) + 97$
 $= 25 + (\dots + 97)$
 $= 25 + \dots$
 $= \dots$
- Are these statements true or false?
 a) $(8-1)-5 = 8-(1-5)$
 b) $(2 \times 4) \times 5 = 2 \times (4 \times 5)$
- Use the distributive property to rewrite the expression and find its value.
 $a7 \times 92 + 7 \times 8 = 7 \times (\dots + \dots) = 7 \times \dots = \dots$
 b) $14 \times 48 + 14 \times 52 =$
- Work out
 a) 26×8 b) 24×93

Year 7 : Unit 3 Factors and Multiples

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

- Use knowledge of multiples to find common multiples of two numbers through listing or by organising the multiples in a Venn diagram
- Apply divisibility rules for 2, 3, 5, and 10 and understand a number is divisible by another if it can be divided exactly, leaving no remainder
- Use knowledge of factors to find common factors of two numbers through listing or by organising the factors into a Venn diagram
- Apply knowledge of factors pairs to decompose two-digit divisors and use repeated short division to evaluate the resulting calculation
- Understand the relationship between square numbers and square roots and how to calculate them both using mental methods and calculators
- Determine whether a number is prime by understanding that prime numbers have exactly two factors and applying divisibility rules up to the square root of the number
- Understand that every composite number can be written as a product of prime factors and using prime factor decomposition methods, such as factor trees, to express numbers in this way
- Use prime factor decomposition to find all factors of a number and to identify square numbers and square roots
- Know how to use Venn diagrams to organise prime factors and find the highest common factor of a pair of numbers by identifying and multiplying shared prime factors
- Understand what the lowest common multiple is and using prime factor decomposition, including Venn diagrams, to find it for a pair of numbers
- Apply strategies to interpret and solve contextualised HCF and LCM problems by identifying key information and selecting appropriate methods

Keywords:

Multiple
Factor
Square
Prime
Prime factor decomposition
Venn diagram
LCM
HCF
Decoding

Factors

Common factors of 60 and 36 are factors of both numbers.



Common factors of 60 and 36 are: 1, 2, 3, 4, 6 and 12

Venn diagrams can help us to organise sets of factors.



Common factors are represented in the intersection.

Square numbers

A square number is the result of multiplying an integer by itself.



Squaring and square rooting are inverse operations.



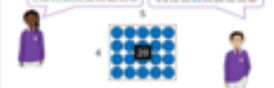
Multiples

A multiple is the product of two integers.

This means it is the result of multiplying a given integer by another.

A common multiple of 3 and 4 is a multiple of 3 and a multiple of 4.

We can find common multiples by listing.



The first 2 common multiples of 3 and 4 are 12 and 24.

Venn diagrams can help us to organise sets of multiples. This helps us to identify all the common multiples.



Common multiples of 3 and 4 are represented in the intersection.

Divisibility

If a number is divisible by another, it means it can be divided by that number exactly. We can also say it is a multiple of that number.

A number is divisible by 2 if the ones digit is 0, 2, 4, 6, 8.

A number is divisible by 10 if the ones digit is 0.

A number is divisible by 5 if the ones digit is 0 or 5.

If a number is divisible by 3, its digit sum is a multiple of 3.

Highest common factor

We can multiply combinations of common prime factors to find all common factors of two numbers.

When we multiply all the common prime factors together, we get the highest common factor (HCF) - the common factor with the greatest value.



All the common factors of 220 and 60 are

1, 2, 2 x 2, 5, 2 x 2 x 5, 11, 2 x 2 x 5 x 11

1, 2, 4, 10, 20

Lowest common multiple

The lowest common multiple (LCM) is the common multiple with the smallest value. We can multiply all prime factors in a Venn diagram to find the LCM.



Using HCF and LCM

We can tell if we need to find the highest common factor or lowest common multiple by decoding the question.

There are 60 girls and 32 boys who want to compete in the Year 7 athletics championship. If each team must have the same number of girls and boys, what is the greatest number of teams that can participate?

I can highlight the key information.

At the theme park, every 8th visitor gets a fast pass, and every 12th visitor gets a free t-shirt. After how many visitors will someone get a fast pass and a t-shirt?

Can a representation help me?

Prime numbers

A prime number has exactly two factors.

5 is a prime number. It has exactly two factors.



6 is not a prime number. It has more than two factors.



1 is not a prime number. It has one factor.



Using prime factor decomposition

We can multiply combinations of prime factors to find other factors.



If the product of prime factors of a number can be rearranged into two equal groups, the number is a square number. The primes in each group multiply to make the square root.

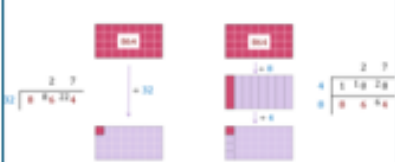


294 has 12 factors: 1, 2, 3, 6, 7, 14, 21, 42, 49, 98, 147, 294

$\sqrt{225} = 15$

Division methods

$$864 \div 32 = 27$$



Year 7 : Unit 4 Order of Operations

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

- Understand and applying the correct order of operations when evaluating expressions involving addition, subtraction, multiplication, and division.
- Understand that brackets take priority over the four basic operations in calculations and using them to structure and evaluate expressions accordingly.
- Apply knowledge of the order of operations to evaluate expressions involving indices, brackets, and the four basic operations, recognising that squares and square roots take priority.
- Use a calculator to evaluate and compare numerical expressions involving brackets, squares, square roots, and the four operations.

Keywords:

Equal and unequal priority
Brackets
Square and Square root
Evaluate
Expressions



Squares and square roots

Squaring and square rooting have equal priority. Squaring and square rooting have a higher priority than $+$, $-$, $\times$, $\div$. Brackets still tell us which parts of an expression to work out first.

$$\begin{aligned} \sqrt{9} \times 2^2 \\ &= 3 \times 2^2 \\ &= 3 \times 4 \\ &= 12 \end{aligned}$$

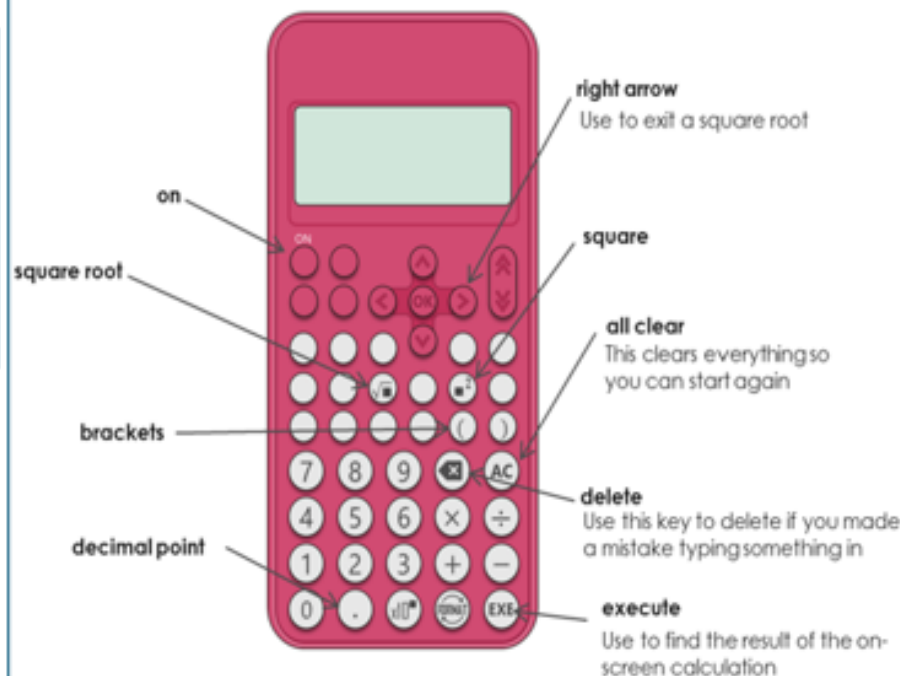


$$\begin{aligned} \sqrt{(2 \times 8)} \\ &= \sqrt{16} \\ &= 4 \end{aligned}$$



Using a calculator

We can use a calculator to calculate expressions. Calculators use the order of operations to perform calculations.



Equal and unequal priority

When two operations have **equal priority**, we can perform the calculations from **left to right**.

Addition and subtraction have **equal priority**.

$$\begin{aligned} 8 - 3 + 2 \\ 5 + 2 \\ 7 \end{aligned}$$

Multiplication and division have **equal priority**.

$$\begin{aligned} 8 \times 3 \div 4 \\ 24 \div 4 \\ 6 \end{aligned}$$

Multiplication and division have **higher priority** than addition and subtraction in calculations. This means we perform multiplication or division operations **before** addition or subtraction operations.

$$\begin{aligned} 4 \times 2 + 3 \times 2 \\ 8 + 6 \\ 14 \end{aligned}$$

$$\begin{aligned} 8 - 3 \times 2 \\ 8 - 6 \\ 2 \end{aligned}$$

Brackets

Brackets have a **higher priority** than $+$, $-$, $\times$, $\div$ when we perform calculations. This means that we perform any operations **inside** the brackets first.

$$\begin{aligned} 3 \times (5 + 6) \\ &= 3 \times 11 \\ &= 33 \end{aligned}$$



$$\begin{aligned} 5 + 6 \\ 11 \\ 3 \times 11 \\ 33 \end{aligned}$$

Year 7 Unit 4 Homework Questions

- What is the value of this expression $2 \times 5 + 2 \times 3$?
- Find the value of the expression $(6 + 10) \div 4$
- Which expression has the greatest value? $6 + 9 \div 3$ or $14 - 6 \div 2$
- Insert a single pair of brackets to make the calculation true
 $25 = 10 - 5 \times 5$
- Evaluate
a) $100 - 4 \times 3^2$ b) $5 \times (4 - 3)^2$

- 6 Evaluate the expressions

$$(31.4 + 4.99) \div (2 \times 5.1)^2$$

$$\sqrt{(4.5 \times 3.3)^2} \div (6.8 + 3.7)$$

Year 7 : Unit 5 Negative Numbers

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

- Be able to order directed numbers
- Understand addition of a negative number is the same as subtracting a positive number
- Be able to evaluate numerical expressions where negative numbers are being subtracted from a negative or positive number
- Be able to multiply and divide negative numbers by positive/negative numbers
- Be able to evaluate expressions involving positive integer powers of positive and negative numbers
- Be able to evaluate expressions involving positive and negative numbers, brackets, indices, and the four basic operations
- Be able to use a calculator to evaluate expressions involving positive and negative numbers, all four operations, brackets and indices
- Be able to solve problems involving negative numbers in context

Keywords:

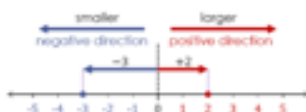
- Direction
- Evaluate
- Expression
- BIDMAS
- Indices

Directed numbers

Numbers have both **magnitude** (size) and **direction** (positive or negative).

Positive numbers are **greater** than zero.
Negative numbers are **less** than zero.

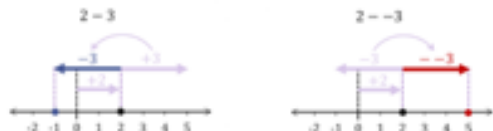
On a number line, numbers further in the positive direction are greater than numbers further in the negative direction.



Subtracting directed numbers

Subtraction is the **inverse** of addition.

When we **add** a number, we move in the direction of that number.
When we **subtract** a number, we are doing the **opposite** of adding so we move in the opposite direction to the number.

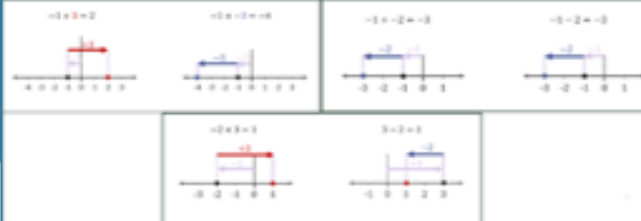


Adding directed numbers

When we add a number, we move in the direction of the number we are adding.

Adding a negative number is the same as subtracting a positive number with the same magnitude.

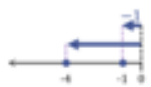
When adding directed numbers, we can use commutativity to make calculations easier.



Multiplying negative numbers

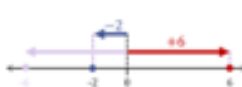
Multiplying by a positive number can change the **magnitude** of the number, but not its direction.

$$-1 \times 4$$



Multiplying by a negative number can change the **magnitude** and **always** changes the **direction** of the number.

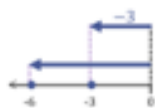
$$-2 \times -3 = 6$$



Dividing negative numbers

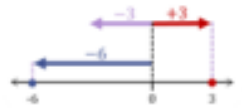
Dividing by a positive number can change the **magnitude** of the number.

$$-6 \div 2 = -3$$



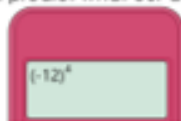
Dividing by a negative number can change the magnitude and always changes the **direction** of the number.

$$-6 \div -2 = 3$$



Using a calculator

We need to use brackets when calculating with negative numbers and indices. We can predict what our answer will be, so we know we haven't made a mistake.



Order of operations with negative numbers

We always follow the order of operations, whether the numbers are positive or negative numbers. Brackets can be used to give priority to operations in a calculation. Adding or removing brackets to a calculation can change the result.

$$\begin{aligned} & -4 - 2 \times 3^2 \\ & = -4 - 2 \times 9 \\ & = -4 - 18 \\ & = -22 \end{aligned}$$



$$\begin{aligned} & (-4 - 2) \times 3^2 \\ & = -6 \times 3^2 \\ & = -6 \times 9 \\ & = -54 \end{aligned}$$

Negative numbers and indices

Squaring a number means multiplying the number by itself.

The **index** tells us how many of the **base** are multiplying together.

$(-2)^2$ is read **negative two squared**.

2^5 is read **two to the power of five**.

$(-2)^5$ is read **negative two to the power of five**.

$$\begin{aligned} (-1)^2 &= -1 \times -1 \\ (-2)^2 &= -2 \times -2 \\ (-3)^2 &= -3 \times -3 \\ (-4)^2 &= -4 \times -4 \\ (-5)^2 &= -5 \times -5 \end{aligned}$$

$$\begin{aligned} 2^4 &= 2 \times 2 \times 2 \times 2 \\ (-2)^4 &= -2 \times -2 \times -2 \times -2 \end{aligned}$$

Year 7 Unit 5 Homework Questions

- Write these numbers in ascending order (from smallest to largest)
 $-3, 7, -5, 2, -1$
- Work out
a) $2 - 7 =$ b) $-6 + 7 =$ c) $-3 - 5 =$
- Work out
a) $13 - -6 =$ b) $-2 - -5 =$ c) $7 - \underline{\quad} = 9$ d) $\dots - -4 = 3$
- State whether the value of these expressions be positive or negative?
a) 341×-344 b) -511×-22
- Work out
a) $(-5)^2$ b) $(-2)^3$ c) $(-1)^6$
- Calculate
a) $-24 \div 4$ b) $16 \div -2$ c) $-30 \div -10$
- Calculate
a) $5 \times -3 + 2 \times -5$
b) $-4 \times (3 - 7)$
c) $(5 - 9)^2$

ÊTRE - to be, being

In French, the verb **être** means **to be / being**.

Verb ÊTRE (to be, being)	
je suis	I am
tu es	you are
il est	he is
elle est	she is
Je suis anglais. → I am English.	
Tu es petit. → You are small.	
Il est grand. → He is tall.	



Describing a thing or person

Vocabulaire

vb	être	to be / being
vb	je suis	I am
vb	elle est	she is
vb	il est	he is
vb	tu es	you are
adj	anglais(e)	English (m/f)
adj	cool	cool
adj	français(e)	French (m/f)
adj	grand(e)	tall / big (m/f)
adj	petit(e)	small (m/f)
conj	et	and



oui	yes
non	no
au revoir	goodbye
bonjour	hello

Adjectives

In French when an **adjective** describes a **feminine** noun, the **adjective's** spelling and sometimes its **sound** change.

The most common change is an 'e' on the end of the adjective. (for adjectives not already ending in 'e'.)

masculine	Il est intelligent.	He is intelligent.
	Je suis petit.	I (a boy) am small.
feminine	Elle est intelligente.	She is intelligent.
	Je suis petite.	I (a girl) am small.

Yes/no questions (raised intonation)

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

Statement	Elle est malade. She is ill.
Question	Elle est malade ? Is she ill?

Describing a thing or person [2]

Vocabulaire

adj	amusant(e)	funny (m/f)
adj	calme	quiet
adj	content(e)	glad, pleased (m/f)
adj	excellent(e)	excellent (m/f)
adj	intelligent(e)	intelligent (m/f)
adj	malade	ill
adj	méchant(e)	mean (m/f)
adj	triste	sad
adv	voilà	Here you go / here it is
conj	mais	but
conj	ou	or
conj	merci	thank you

Using the verb AVOIR

To talk in French about what you **have**, use the verb **avoir**.The pronoun **je** is 'j' before a vowel.avoir
j'ai
il a
elle ato have / having
I have
he has
she has

J'ai un animal. I have an animal (i.e., pet).
Il a un chien. He has a dog.
Elle a une idée. She has an idea.



Saying what people have

vb	avoir	to have, having
vb	j'ai	I have
vb	il a	he has
vb	elle a	she has
pron	ce / ça	this, that
pron	qui	who
nm	un animal	a pet / an animal
nf	une chambre	a bedroom
nm	un chien	a dog
nf	une chose	a thing
nf	une idée	an idea
nf	une liste	a list
nm	un livre	a book
nm	un portable	a mobile phone
nf	une règle	a ruler
det	un	a / an (masculine nouns)
det	une	a / an (feminine nouns)



Vocabulaire

Using the verb AVOIR

Remember, the verb **avoir** is French for **have**.

Do not say the final 's' → SILENT FINAL CONSONANT

avoir to have / having
j'ai I have
tu as you have
il a he has
elle a she has

J'ai un chien. I have a dog.
Elle a un chien. She has a dog.
Tu as un chien. You have a dog.

In English the adjective comes before the noun

Using adjectives

In French, many adjectives follow the noun:

un ordinateur puissant a powerful computer
un vélo cher an expensive bike
une machine moderne a modern machine
une voiture rapide a fast car

Note: The adjective changes its spelling and sound to match feminine nouns!

puissant → puissante



Developing my vocabulary 1 - 4:

	Sentences:
1	I am French.
2	He is small.
3	She is tall.
4	You are English.
5	I am intelligent
6	He is quiet
7	She is glad / pleased
8	Being naughty is funny!
9	I have an idea
10	He has a dog
11	I have a mobile phone
12	She has a book

Week 5 - Describing things			Vocabulaire
vb	tu as	you have	
nm	l'anglais	English language	
nf	une date	a date	
nm	le français	French language	
nf	une machine	a machine	
nm	un ordinateur	a computer	
nm	un titre	a title	
nm	un vélo	a bike, a bicycle	
nf	une voiture	a car	
adj	cher / chère	expensive (m/f)	
adj	moderne	modern	
adj	puissant(e)	powerful (m/f)	
adj	rapide	fast, quick	
prep	en	in	
	parle en français	speak in French	
	écrit en anglais	write in English	
	comment ça s'écrit ?	how is it written?	

Developing my vocabulary Page 2:

	Sentences
1	I have a bike
2	Do you have a computer?
3	I have a car
4	I have a fast car
5	Do you have a modern machine?
6	I have a teacher
7	I have a friend (f)
8	She is a friend
9	I have a nice friend
10	He is an interesting friend
11	The girl is nice
12	The doctor is good
13	The boy has a dog
14	The person speaks French
15	The girl has a doctor

19

Week 6			Grammaire
Using avoir and être			
Remember, to talk in French about having something, use the verb avoir.			
e.g.	avoir	to have / having	
	il a	he has	
	elle a	she has	
... and to talk in French about being something, use the verb être.			
e.g.	être	to be / being	
	il est	he is	
	elle est	she is	
For example:			
	Elle a un chien.	She has a dog.	
	Elle est grande.	She is tall.	

C'est + un / une

Remember, to say "It is a..." (If's a...)" in French to introduce something, use c'est... plus the indefinite article un or une (a), according to the gender of the noun introduced:

For example:		
C'est un livre.	It's a book.	(masculine)
		
C'est une règle.	It's a ruler.	(feminine)
		

17

Week 6 - Distinguishing between having and being			Vocabulaire
nm	un ami	a friend (m)	
nf	une amie	a friend (f)	
nm	un chanteur	a singer (m)	
nf	une chanteuse	a singer (f)	
nm	un professeur	a teacher (m)	
nf	une professeure	a teacher (f)	
nf	une femme	a woman	
adj	drôle	funny	
adj	intéressant(e)	interesting (m/f)	
adj	sympa, sympathique	nice	
	vrai	true	
	faux	false	



Vocabulary learning involves knowing different aspects of a word.

Use this checklist:

1. I have seen this word before.
2. I know what the word means.
3. I can read the word aloud.
4. I can spell the word correctly.
5. I can use the word in a sentence.
6. For nouns, I know the gender and the correct word for 'the'.

18

Week 7			Grammaire
Gender and singular nouns			
We already know that all nouns (e.g., words for things, people, countries) have a gender in French.			
All nouns are either masculine or feminine.			
masculine		feminine	
un chien	a dog	une chambre	a bedroom
le chien	the dog	la chambre	the bedroom
To say a or an before a noun, use un or une, according to whether the noun is masculine or feminine.			
To say the before a noun, use le or la, according to whether the noun is masculine or feminine.			

Making nouns and articles plural

To make a noun plural i.e. to talk about more than one thing, in French we add an s (most of the time), just the same as in English:

masculine		feminine	
les chiens	the dogs	les chambres	the bedrooms
les livres	the books	les choses	the things

'The' also changes to 'les', to match the plural noun.

'Les' (the) is the same for both masculine and feminine nouns.

You do not pronounce the -s on the end of the words. It is a silent final consonant (SFC).

20

Week 7 - Talking about a thing or person			Vocabulaire
nm	un acteur	actor (m)	
nf	une actrice	actor (f)	
nf	la fille	girl	
nm	le garçon	boy	
nm	un homme	a man	
nm	le médecin	doctor (m)	
nf	la médecin	doctor (f)	
nm	le mot	word	
nf	la personne	person	
nf	la phrase	sentence	
adj	bon	good (f)	
adj	bonne	good (f)	
der	le	the (m)	
der	la	the (f)	
der	les	the (pl)	



21

Week 9

Grammaire

The verb **faire**: to do / to make
In French we use the verb **faire** to say to do and to make.



je fais I do / make
il fait he does / makes
elle fait she does / makes



Talking about doing and making things

Vocabulaire

vb	faire	to do, make / doing, making
vb	je fais	I do, I make / I am doing, I am making
vb	il fait	he does, he makes / he is doing, he is making
vb	elle fait	she does, she makes / she is doing, she is making
pron	ça	that
nf	une activité	an activity
nf	les courses	grocery shopping
nf	la cuisine	cooking
nm	les devoirs	homework
nm	le lit	bed
nm	le ménage	housework
nm	le modèle	model
	d'accord	okay, alright



23

Week 10

Reading

nm	le ciel	sky
nf	la couleur	colour
nm	le rêve	dream
nf	la vague	wave
adj	bleu(e)	blue (m/f)
adj	jaune	yellow
adj	rouge	red
adj	vert(e)	green (m/f)
adv	comme	like



Week 12

Grammaire

FAIRE - to do / make

Reminder: in French we use the verb **faire** to say to do and to make.

verb FAIRE [to do, make]	
Je fais	I do
Tu fais	you do
Il / elle fait	he/she/it does

Je fais du sport. I do sport.
Tu fais le lit. You make the bed.
Que fait-il? What does he do?
Il fait du judo. He does karate.

However, **faire** is used with many other meanings in French:

faire un voyage to go on a journey

faire une promenade to go for a walk/ride



faire un tour to go on a tour



faire les magasins to do the shopping

faire beau to be nice weather



faire mauvais to be bad weather

4

Developing my vocabulary Page 3:

	Sentences
1	I am doing the cooking
2	I am making the bed
3	I do the shopping
4	I do the housework
5	I'm doing that!
6	Doing homework is interesting
7	J'ai un rêve
8	J'adore la couleur verte
9	Mon frère est rouge comme une tomate
10	La vague est vraiment bleue!
11	It is nice weather
12	It is bad weather
13	I go for a walk
14	You go shopping
15	He goes on a tour

24

Music Module 1

Singing and Musical Elements

We organise the musical elements using the acronym DR SMITH. These are the building blocks of music and what we use when we listen to music, perform, and compose. Below are the musical elements you will focus on in Module 1 of Year 7

DYNAMICS
RHYTHM &
TEMPO
STRUCTURE
MELODY
INSTRUMENTS
TEXTURE
HARMONY
AND
TONALITY



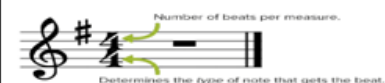
RHYTHM

Rhythm refers to **duration**: long and short notes and the patterns they form.

Note	Rest	Name	Beats
		semibreve	4
		dotted minim	3
		minim	2
		crotchet	1
		quaver	1/2
		semiquaver	1/4

Rhythms are for medium groups called bars,

according to the **time signature** (how many beats a bar adds up to)



TEMPO

Tempo is different to rhythm.

The TEMPO is how **fast** or **slow** the **pulse** of the music is.

Presto - very fast tempo

Allegro - fast tempo

Moderato - medium tempo

Andante - walking speed

Largo - slow tempo

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.

INSTRUMENTS - Voice

A **singers** voice can be described as

Soprano - high female

Treble - boy (before voice has broken)

Alto - low female

Tenor - high male

Bass - low male

Singers must warm up both their bodies and voices before singing to help produce the best sound and protect their voices.

Physical warm ups might include:

Stretching, shaking out tension, face massage and improving posture.

Vocal warm ups might include:

Humming, sirens, scales, vowel practice.

PITCH

Pitch is how high or low a note is.



The bigger the instrument the lower its pitch. E.g. the double bass is the biggest and lowest pitched instrument of the string family.



The smaller the instrument the higher its pitch. E.g. the piccolo is the smallest and highest pitched instrument of the

woodwind family.

MELODY

Melody is the organisation of **pitches** into a pattern.

We can also call a melody the **tune**.



We can describe melodies using the following vocabulary:

Ascending - going up

Descending - going down

Conjunct - most of the pitches are close together

Disjunct - the pitches jump around and are far apart

Year 7 Music Module 1 Homework Questions

- 1) What do dynamics describe in music? _____
- 2) What is the musical term for the loudest dynamic? _____
- 3) What is the term for the quietest dynamic? _____
- 4) What symbol do we draw in music for a crescendo? _____
- 5) What does tempo describe in music? _____
- 6) What does Largo mean? _____
- 7) What is the fastest tempo? _____
- 8) Name an instrument that is low pitched. _____
- 9) What is another term for melody? _____
- 10) What do we call a melody that uses notes that jump around and are far apart in pitch? _____
- 11) Draw a crotchet How many beats is it worth? _____
- 12) Draw a quaver How many beats is it worth? _____

Knowledge Organiser - Year 7 - Football



YEAR 7 CURRICULUM FOCUS: **CONTROL**

Control: "Understand the components of skills and be able to perform the techniques effectively."

Skill	Key teaching points To perform each skill with CONTROL you must ...	Skill	Key teaching points To perform each skill with CONTROL you must ...
General Ball Control	- Get in line with the movement of the ball. - Decide how you are going to control the ball and present the area of the body you will use to control the ball. - Relax the surface you will control the ball with to allow the ball to drop to the ground.	Shooting	- Place your non kicking foot by the side of the ball and your arms out for balance. - Keep your head still and eyes on the ball, lean your upper body slightly over the ball. - Swing your leg at the ball, making contact with the laces and following through with your kicking leg.
Side Foot Pass	- Place your non kicking foot by the side of the ball and your arms out for balance. - Keep your head still and eyes on the ball, leaning your upper body slightly over the ball. - Swing your leg at the ball, making contact with the side of the foot and following through with your kicking leg.	Heading	- Keep your eyes focused on the ball and move into the line of flight. - Use your neck muscles for power and your forehead for control. - Keep your arms out for balance and to keep opposition players away.
Dribbling	- Pupils keeping the ball close to their feet in tight areas and further away when running into space. - Using both feet, arms out for balance. - Leaning the body slightly over the ball.	Tackling	- Approach your opponent at speed but don't get too close. - Position yourself side on so you can turn at speed. - When you think you can win the ball transfer your weight forward to meet the ball with your leg, keeping your ankle and leg firm when making the tackle.

Basic rules	Explanation
Match	A match is decided after 90 minutes, and the team scoring the greater number of goals is the winner. If both teams score no goals or an equal number of goals the match is drawn.
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.
Goal	A goal is scored when the whole ball passes over the goal line, between the goalposts and under the crossbar, provided that no offence (foul) has been committed by the scoring team scoring.





Knowledge organiser - Year 7 - Handball



YEAR 7 CURRICULUM FOCUS: **CONTROL**

Control: "Understand the components of skills and be able to perform the techniques" effectively.

Skill	Key teaching points To perform each skill with CONTROL you must ...	Skill	Key teaching points To perform each skill with CONTROL you must ...
Ball familiarisation	- You must familiarise yourself with the ball shape so that you know where to put your hands. - Hands in a W when holding the ball. Extend arms, flick wrists and follow through in the direction that you want the ball to travel. - Use fingers to grip ball.	Dribbling/ travel	- 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.
Rules/Lines of the court	- No double dribble - You can't go into semi-circle - Goal keepers can't wear gloves - You can hold the ball for 3 seconds. - You can take 3 steps with the ball - formation rules (5 defend, 1 attack, 4 defend, 2 attack, person to person marking) - 7 per team.	Attacking/ defending	- Rotate shoulders square to the goal throwing arm forward. - Attacking: Get into space to shoot, move around the D, draw defender in to create space. 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. - Defending: Hands and arm up, on balls of the feet, closing any gaps before opponent gets opportunity to shoot - Land on take off foot.
Passing and Moving	- Hands in a W when holding the ball. Extend arms, flick wrists and follow through in the direction that you want the ball to travel. - When you have the ball you can take up to 3 steps with the ball before you pass or dribble.	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.

Basic rules	Explanation
Double Dribble	Handball players cannot receive the ball and bounce it, then hold the ball, and bounce it again. This is termed 'double dribble' and is against the rules.
Travel	If a handball player takes more than three steps without dribbling (bouncing the ball) or holds the ball for more than 3 seconds without bouncing it, shooting or passing, then that is deemed 'travelling' and possession is lost.



Health Related Fitness (HRF)

Physical Components of Fitness

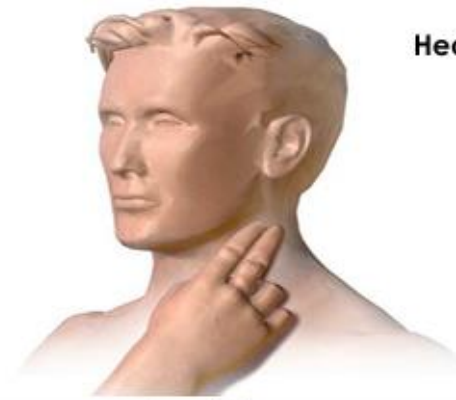
Aerobic Endurance	The heart and lungs working for a long period of time to supply oxygen to working muscles during physical activity.
Muscular Endurance	The muscles working for a long period of time against a fixed resistance.
Muscular Strength	The maximum force that can be generated by a muscle.
Speed	Distance divided by the time taken, measured in metres per second (m/s). The faster an athlete runs over a distance, the greater their speed.
Flexibility	The ability to move a joint fully and smoothly through its complete range of movement.
Body Composition	The ratio of fat mass to fat-free mass (vital organs, muscle, bone) in the body.

Skill Components of Fitness

Agility	The ability of a sports performer to change direction at speed without losing balance or time.
Balance	The ability to maintain centre of mass over a base of support, which can be dynamic (on the move) or static (stationary).
Co-ordination	The ability to use two parts of the body to perform a task smoothly and accurately, e.g. hand-eye co-ordination.
Power	An action that is a product of speed and strength, so it is fast and strong.
Reaction Time	The time taken for a sports performer to respond to a something occurring, e.g. starting gun in the 100m and the athlete sprinting.

Warm Up & Cool Down

Warm Up	Light continuous physical activity to prepare the body for exercise... • Dynamic stretches (stretches whilst moving). • Pulse raising activities, e.g. gentle jogging, knees up, side steps etc. • Sport specific activities, e.g. passing for football/netball/basketball.
Cool Down	Light, continuous physical activity to reduce heart rate and remove lactic acid from the muscles. • Static stretches (stretches whilst stationary). • Pulse reducing activities, e.g. gentle jogging to steady breathing.



Carotid

Heart Rate – Test Sites



Radial

Heart Rate (measured in beats per minute... 'bpm')

During exercise... your working muscles require oxygen therefore your heart rate increases so that the oxygen within the blood can be supplied to the muscles.

Heart Rate Maximum (bpm) = $220 - \text{age (years)}$.

To estimate your heart rate... you can use the 'Borg Scale' which is a rating from 6-20 (with 6 being low and 20 being high). You use this to estimate how hard you are working... multiply it by 10 and that is an estimate of your heart rate.

When exercising... it is recommended that an individual's heart rate is between 60–85% of their maximum heart rate to improve cardiovascular health and fitness.



Knowledge organiser - Year 7 - Netball



YEAR 7 CURRICULUM FOCUS: CONTROL

Control: "Understand the components of skills and be able to perform the techniques" effectively.

Skill	Key teaching points To perform each skill with CONTROL you must ...	Skill	Key teaching points To perform each skill with CONTROL you must ...
Ball familiarisation and 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	Dodging (Single dodge)	- Stand with your feet shoulder width apart, on the balls of your feet - Place your foot as if you are running in one direction, then quickly change direction and run in the opposite direction
Passing (Chest/bounce pass)	- Stand with your feet shoulder width apart - Hold the ball with your hands in a W position close to your chest - You then extend your arms forward passing the ball towards your partners chest	Positions	Attacking positions – WA, GA, GS Defending positions – WD, GD, GK Centre court positions C
Defending the ball	- You must stand 1m away from your opponent - Feet will be shoulder width apart - Place your arms in the air to make yourself as big as possible - You can lean towards your partner, but don't move your feet and closer	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, so the ball goes towards the net

Basic rules	Explanation
Offside	Each position has a certain area in which they are allowed to be in during the game. If the player goes into an area they aren't allowed to be in then the other team will get the ball.
Distance	When your opponent has the ball you have to stay 1m away from them when marking. If you get too close to them, they will be given a free pass.
Footwork	When you catch the ball, your landing foot must remain on the floor until you have passed the ball. If you move this foot, it will be footwork and the other team will get the ball.





Knowledge organiser - Year 7 - Rugby



YEAR 7 CURRICULUM FOCUS: CONTROL

Control: "Understand the components of skills and be able to perform the techniques" effectively.

Skill	Key teaching points To perform each skill with CONTROL you must ...	Skill	Key teaching points To perform each skill with CONTROL you must ...
Ball familiarisation	- You must familiarise yourself with the ball shape so that you know where to put your hands. - Spread your hands across the fat part of the ball. Hand soft hands as you catch, then grip tight with the ends of the fingers and thumb.	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
Passing	- 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 keeps your elbows slightly bend 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	Basic Positioning	-Full back -Wing (x2) - Centre -Scum Half -Forward

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 7 - Trampolining

YEAR 7 CURRICULUM FOCUS: **CONTROL**

Control: "Understand the components of skills and be able to perform the techniques" effectively.

Skill	Key teaching points To perform each skill with CONTROL you must ...	Example	Skill	Key teaching points To perform each skill with CONTROL you must ...	Example
Straight bouncing	- Body straight showing body tension - Arms up when going up, arms down when coming down - Eyes looking forward - Legs together, toes pointed		Pike jump	- Legs together with toes pointed - Straight legs - Hands touching toes - Hips and legs at a 90-degree angle	
Killing the bed	- Bend knees on landing - Arms out in front for additional balance - Eyes looking forward		Straddle jump	- Legs wide with toes pointed - Straight legs - Hands touching toes - Hips and legs at a 90-degree angle	
Tuck jump	- Eyes looking forward - Toes pointed - Hands grasp the shins (should hear a slight slapping sound) - Knees brought up to the chest, bent and together		Twists – Half and full twists	Half-twists: Straight bounding, once in the air, rotate head and shoulders in the direction of the twist. Arms move up and around to come back down on landing. Full twist: Straight bounding, once in the air, rotate head and shoulders in the direction of the twist for 360 degrees. Arms move up and around to come back down on landing.	

Branch 1: Creation Key terms

<u>Key word</u>	<u>Definition</u>	<u>Image</u>
God	The <u>one supreme being</u> , who creates and sustains everything	
Literal Sense	The meaning of the text as the author intended it to be; this is different to reading a passage literally which means accepting it as <u>word-for-word truth</u> .	
Literary form	The <u>style of writing used</u> , for example a letter or a poem.	
Creation	The act of <u>bringing something into existence</u> ; or the universe and everything in it (which Catholics believe God created).	
Creationism	The belief that the Bible accounts of creation are <u>literally true</u> .	
Scientism	The belief that <u>science can provide all of the answers</u> in life.	
Prayer	The way in which humans <u>communicate with God</u> .	
Stewardship	The duty to care for something. Catholics believe that <u>God gave them the duty to care for the earth</u> and everything in it.	



What does the Bible teach Catholics?	
• The Bible is the holy book for Christians. It contains God's Word. • For Christians, the Bible is a form of revelation, which is the way in which God is made known to humans, which Catholics believe is most perfectly done through Jesus. • Catholics believe the Bible is inspired. This means they believe that the Holy Spirit guided humans to write down the truth from God by inspiring them. • Most Catholics do not read the Bible literally. Instead, they aim to understand the message that God wanted to communicate to them.	
What is Catholic Social Teaching?	
• The Catholic Church teaches that we should try to reduce human suffering and increase cooperation and friendship between all people: Catholic Social Teaching • The four core principles of Catholic Social Teaching are: 1) Dignity of the human person 2) The common good, 3) Subsidiarity, and 4) Solidarity. • Catholics believe they have a duty to care for the world and everything in it (stewardship). • Pope Francis describes stewardship as responding to 'the cry of the earth and the cry of the poor' (Laudato Si').	
How can Catholics practice stewardship?	
• Sister Dorothy Stang worked to protect the Amazon rainforest and help bring settler farmers together to give them greater power in challenging deforestation. • She did this because she believed that God gave all humans the duty to be stewards of creation.	
Why do Catholics pray?	
• Prayer is the way in which people communicate with God. It is a response to God's revelation. • When Catholics pray, they lift their hearts and minds to God. It is a way of walking with God throughout their lives. • Jesus taught the Our Father prayer to his disciples which contains different types of prayer. This includes adoration, confession, thanksgiving and supplication (ACTS)	
How does artwork teach about creation?	
• Genesis Frontispiece by Donald Jackson shows each day of creation as a vertical stripe to reflect the order of creation and the beauty of God's world. • The Creation of Adam by Michelangelo shows God as the omnipotent, transcendent creator of Adam the first human.	



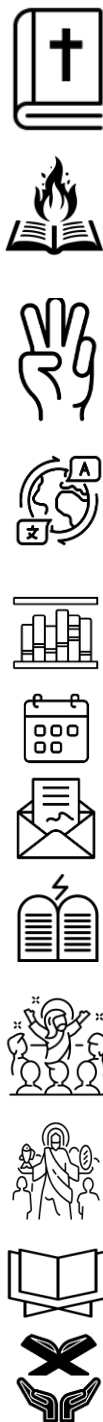
Branch 1: Creation	
What does Genesis 1 teach?	What does Genesis 2 teach?
• In the first creation story God creates the universe and everything in it in six days; God creates using spoken word; God creates ex nihilo(out of nothing). • This story teaches that God is eternal (has no beginning or end); • transcendent (outside of space and time); and omnipotent (all powerful). • It teaches that creation is good. • It teaches that humans are created imago Dei; they have a responsibility to be stewards of creation • Catholics interpret this as a symbolic story to help answer the questions 'Where did everything come from?' and 'Why are we here?'	• In the second creation story God orders chaos and creates harmony; man is created by God from the earth and God breathes life into him; woman is created by God from man's rib. • This story teaches that God is immanent (close to humans and acting in the world). • It teaches that creation is lovingly made for humans to live together in a relationship with the world and with each other. • It teaches that humans have a responsibility to be stewards of creation. • Catholics interpret this as a symbolic story to help answer the question 'What is our purpose?'
What are the scientific theories of creation?	
• The Big Bang theory says that the universe began around 15 billion years ago from a hot, dense point of energy. • The Big Bang theory was initially proposed by a Catholic priest called Gerge LeMaitre • The theory of evolution suggests that all living things change over many generations to suit their environment, and that this happens because of natural selection. This was proposed by Charles Darwin • Most Catholics believe 'there is no conflict between science and religion' The two can work together. Science explains the how, religion explains the why, • Catholics believe that God is still the omnipotent creator of the universe but rather than creating the world in 6 days, he was the cause of the Big Bang and evolution.	

Branch 1: Creation

1. What does the term revelation mean?
2. Define the key term literal sense.
3. Define the key term stewardship.
4. Catholics believe the Bible is inspired. What does this mean?
5. What is Catholic Social Teaching?
6. What is the name of the (encyclical) letter that Pope Francis wrote on caring for the environment?
7. What is prayer and why is it important for Catholics?
8. Jesus taught his disciples the Our Father. What 4 types of prayer does it contain?
9. What does the painting 'The Creation of Adam' show?
10. What happens in Genesis 1?
11. What does the Latin term 'ex nihilo' mean?
12. Name TWO things that Genesis 1 teaches Catholics.
13. In Genesis 2, how does God create man and woman?
14. Name TWO things that Genesis 2 teaches Catholics.
15. What is the Big Bang theory? Who first proposed it?
16. What does Charles Darwin's Theory of Evolution teach?

Branch 2: God's Word Key terms

<u>Key word</u>	<u>Definition</u>	<u>Image</u>
Dei Verbum	The Latin phrase for ' <u>Word of God</u> '; also, a document from the Second Vatican Council explaining how Jesus is the Word of God.	
Scripture	The holy book(s) of a religion; in Christianity it is <u>the Bible</u> .	
Tradition	Also known as <u>Apostolic Tradition</u> , these are actions and teachings of Jesus <u>faithfully passed on</u> from one generation of bishops to the next.	
Magisterium	From the Latin term magister, meaning teacher or master; it is the <u>authority of the Church to teach</u>	
Inspired	<u>God breathed</u> '; the belief that the Holy Spirit guides an individual to act or write what is good and true.	
Canon	The <u>agreed list of books</u> that make up the Catholic Bible	
Old Testament	The books of the first half of the Bible showing the <u>creation of the world and God's relationship with the Jewish people</u> .	
New Testament	The books of the second half of the Bible which tell the story of <u>Jesus' life, ministry and death, and the establishment of the early Church</u> .	
Tenakh	The <u>Jewish Bible</u> .	
Liturgy of the Word	The part of Mass where the <u>word of God is proclaimed</u> (announced).	



What is the history of the Bible?

- Bible references are made up of **book, chapter and verse**. They help Catholics to find specific passages.
- Catholics believe the Bible's writers were **inspired by the Holy Spirit**, so the true author of the Bible is God.
- **The Tanakh (the Jewish Bible)** and the Old Testament share many of the same books, however Jews and Christians arrange and interpret them differently.

Why is the Bible read in translation?

- **The Bible was not originally written in English** – it was first written in three ancient languages: **Hebrew, Aramaic and Greek**.
- **The Bible is read in translation** because it has been **changed into different languages so people around the world can understand it**.
- **There are different types of translations** – some try to keep the original words and grammar, while others focus on making the meaning **easier to understand today**.

What is the structure of the Bible?

- The Bible is a collection of books – it is called a “library” because it contains many **different literary forms**, not just one single book.
- The books were written by **different authors at different times** – they were written over hundreds of years in different places and situations.
- The Bible includes **different types of writing (genres)** – such as history, poetry, laws, letters and stories, each with a different purpose and style.

What are the Old Testament and The New Testament ?

- The Bible has two main parts: **the Old Testament and the New Testament**. The Old Testament is before Jesus, and the New Testament is about Jesus and his followers.
- The Old Testament tells **the story of God's promises and the history of the Jewish people**. It includes important stories like Creation, Moses, and the Ten Commandments.
- The New Testament shows **how Jesus fulfilled God's promises**. It includes his life, teachings, death, resurrection, and the start of the Church.

How do other religions show reverence to scripture?

- Muslims treat **the Qur'an** with great respect – they keep it clean, place it on a high shelf, and perform **wudu (washing)** before touching it.
- Sikhs show respect to the **Guru Granth Sahib** – it is kept in a special place in the Gurdwara, covered with cloths, and people bow to it as a sign of respect.



Branch 2: God's Word

How is God's message revealed to Catholics?

Sacred Scripture:

- The Bible is also known as sacred scripture. Christians believe it is how **God reveals information** that will aid humanity's salvation.
- Together, the Old Testament and New Testament explain the **history of salvation**.
- The Old Testament reveals prophecies about Jesus and key information about God's plan for salvation. In the New Testament, the **prophecies and promises** in the Old Testament are fulfilled through Jesus.
- The Catechism teaches that the Old Testament has '**intrinsic value**', meaning that it is essential and valuable.
- Catholics believe scripture is **without error**, which means that through it, God speaks to us and reveals information.

Sacred Tradition:

- **Dei Verbum 9** teaches that Sacred Tradition and Scripture are both the Word of God and equally important.
- Tradition comes from **the apostles**, who received authority through the Holy Spirit at Pentecost.
- It has shaped key Church teachings like the **sacraments**, the Mass, and the **Creeds**.
- Tradition is living and grows as the Church grows and **responds** to new times.

The Magisterium:

- The Magisterium is the **teaching authority** of the Catholic Church, which has been given to the Pope and the bishops so they can faithfully teach Catholics how to follow the word of God.
- The authority was given to **St Peter and the apostles** who founded the early Church and started sacred tradition.
- This authority is passed down to every **Pope and the bishops**, who use it to teach the word of God.

How is scripture used by Catholics today?

- The Catholic Church uses scripture (the Bible) in the Mass.
- In the **Liturgy of the Word**, Catholics hear Bible readings that help them to feel closer to God and to understand what God expects of them.
- Catholics use scripture in **prayer**, for example in **the Rosary**, which is connected to key events in the Gospels. Catholics meditate on events in **the Gospels** when they pray the Mysteries of the Rosary.

What is the Book of Kells?

- The Book of Kells is a beautifully decorated handwritten Bible – **it was created by monks around 800 AD** and is famous for its detailed illustrations and patterns.
- It shows the importance of the Bible in Christianity – the careful artwork and effort show how special and sacred the Bible was to early Christians.

Branch 2: God's Word

1. Define the key term tradition.
2. Define the key term Dei Verbum.
3. Define the key term canon.
4. What does it mean to say the Bible is read in translation?
5. Why is the Bible called a library and what genres of books does it include?
6. What story does the Old Testament tell? Name TWO important stories that are included in it.
7. What story does the New Testament tell? Name TWO important stories that are included in it.
8. How are the Old Testament and New Testament linked? (Clue: Jesus)
9. What does Dei Verbum 9 teach?
10. Where does tradition come from?
11. What is the Magisterium?
12. Who founded the Early Church and started sacred tradition?
13. During the Liturgy of the Word, what do Catholics hear and why is it important?
14. What is the Book of Kells?

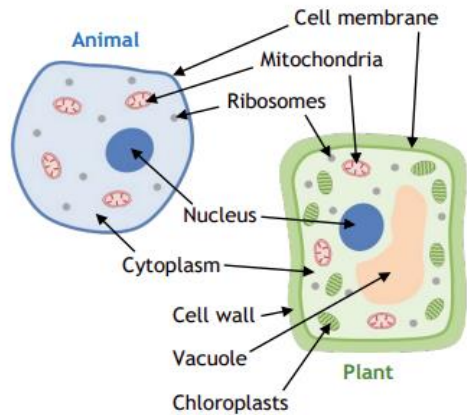
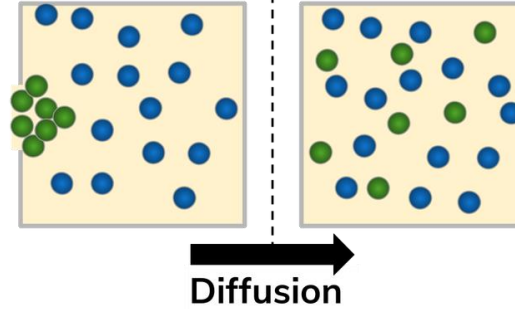
Year 7 Biology Module 1 Knowledge Organiser



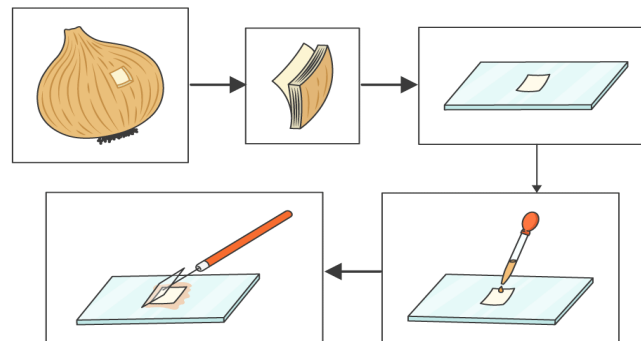
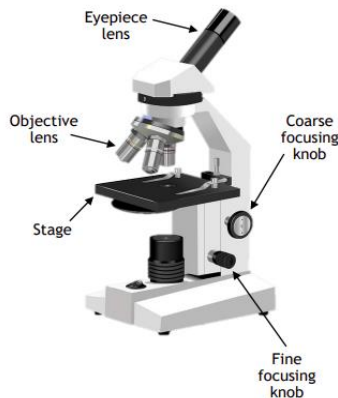
Movement
Respiration
Sensitivity

Growth
Reproduction
Excretion
Nutrition

MRS GREN



Part	Function
Specimen	The object being observed
Glass slide	What the specimen is placed onto, covered with a coverslip
Stain	A chemical that makes the specimen easier to see
Magnification	How much bigger the image is than the object. To find the total magnification, multiply the magnification of the two lenses together.



Using a microscope

- Always start with the **lowest magnification** to obtain the largest field of view
- Increase the magnification and use the **focusing wheels** to ensure the image is clear.

Preparing a slide

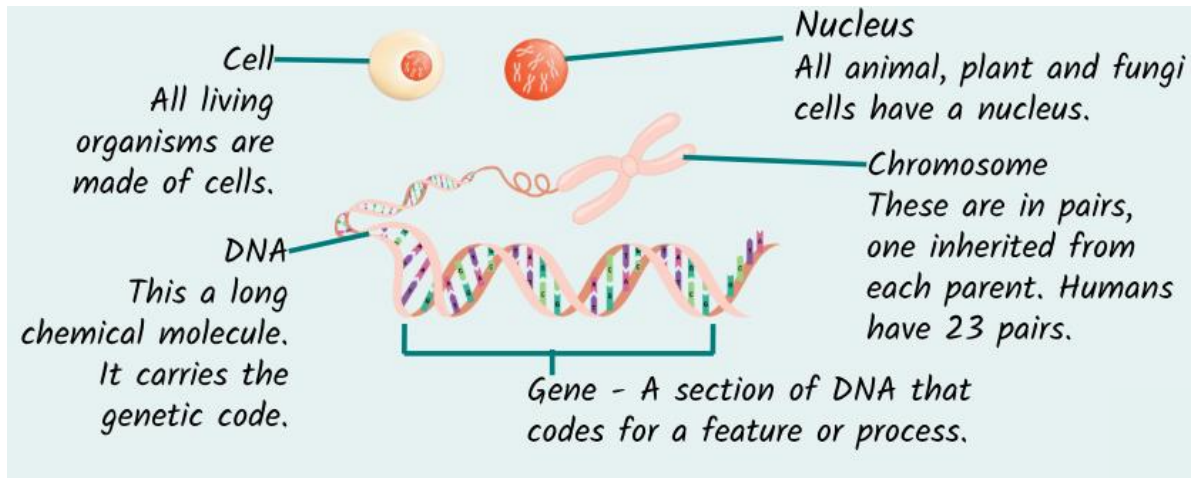
- Take a **thin** layer of your specimen
- Place a drop of **water** on slide and add specimen
- Add a **stain** like iodine
- Place a **coverslip** on top

Key word	Definition
Cytoplasm	A gel – like substance where chemical reactions occur
Nucleus	Stores DNA and controls activities in the cell
Ribosome	Makes proteins
Mitochondria	Releases energy from respiration
Cell membrane	Controls what goes in and out of the cell
Chloroplast	Where photosynthesis happens
Vacuole	Contains cell sap and provides structure and support of cell
Cell wall	Structure and support of cell
Diffusion	Movement of particles from a high concentration to a low concentration

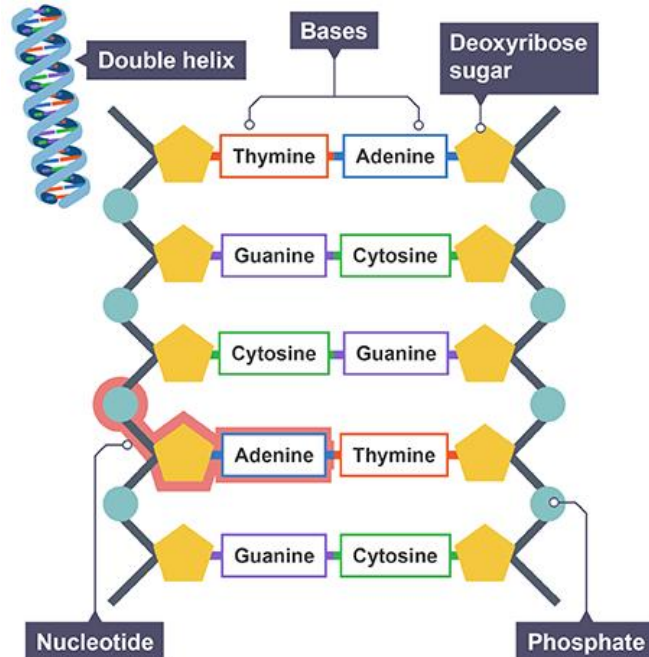
Sperm cell	Function: to swim to and enter the egg Adaptation: tail for swimming; many mitochondria in the head
Egg cell	Function: to fuse with a sperm cell to develop into an embryo Adaptation: a large cell containing a lot of cytoplasm
Ciliated epithelial cell	Function: to move fluids, e.g. up the trachea from the lungs Adaptation: short cilia (hairs) that can move
Root hair cell	Function: to absorb water and nutrients from the soil Adaptation: large surface area

Key Question		Answer
1	Name the 7 life processes all living organisms can do	
2	Which organelle contains DNA and controls activities in the cell?	
3	Name 3 parts that plant cells have but animal cells do not	
4	Why would someone add a stain to cells when viewing them under the microscope?	
5	Give the definition of diffusion	
6	What happens in the mitochondria?	
7	Give the function of an egg cell	
8	Give one adaptation of a sperm cell	
9	In which organelle does photosynthesis take place in a plant cell?	
10	Give the definition of magnification	

Year 7 Biology Module 1 Knowledge Organiser

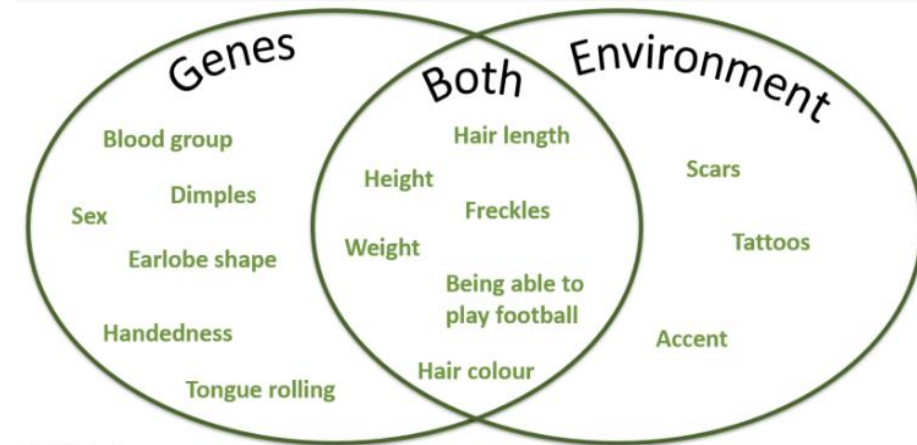


Key word	Definition
Genome	All of an organism's DNA
Gene	A section of DNA that codes for an organism's protein / characteristic
DNA	A long molecule that contains the genetic code
Chromosome	Coiled up lengths of DNA
Variation	Differences between organisms
Environmental variation	Features that are caused by factors in the environment
Genetic variation	Features that are caused by the genes/ alleles that you inherit from your parents



We can extract DNA from fruit using washing up liquid, salt and ethanol.

The DNA appears to be a white colour.



Key Question		Answer
1	What is the definition of the genome?	
2	What is a gene?	
3	What is the shape of DNA?	
4	What are the four bases of DNA, and which bases pair together?	
5	Which word is used to describe the differences between organisms?	
6	State the two causes of variation	
7	How many pairs of chromosomes do humans have in their nucleus?	
8	Give one example of a characteristic that is caused by genetic variation	
9	Why is height a characteristic that can be caused by both genes and the environment?	
10	What colour does DNA appear when it is extracted from fruit?	

Y7 Module 1: Investigative skills knowledge organiser

A science laboratory is used for carrying out practical investigations. This can involve using hazardous chemicals and equipment such as Bunsen burners.

Some practical equipment, such as test tubes, are easily breakable so care must be taken.

Thinking about the students' and teacher's health and safety is very important so that no one gets hurt.

Laboratory Safety Rules

Your teacher will have made the safety rules for the laboratory very clear. Below are some important safety rules, which should always be followed, but there may be others which you need to consider in addition to these.

- Always wear eye protection during a practical.
- Carry out a practical while standing up.
- Do not eat or drink in the laboratory.
- Tie long hair back and tuck loose clothing in during practicals.
- If something is spilled or broken, tell the teacher.
- Ensure that the floor and work space is clear of obstacles.



Hazard Symbols

Hazard symbols show people how dangerous a chemical is, and what care should be taken when handling them.

Symbols can be used all over the world and are immediately recognisable, so it does not matter which language is used.

flammable	acute toxicity	corrosive	explosive
moderate health hazard	serious health hazard	harmful to the environment	

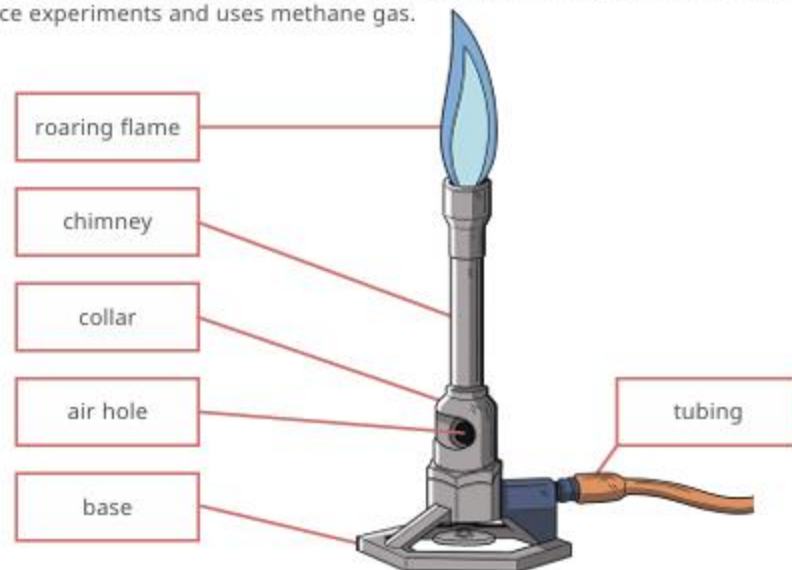
Scientific Equipment

Diagrams are used when drawing practical equipment to make it easier and quicker to draw.

beaker	Bunsen burner	tripod	evaporating basin	clamp stand, boss and clamp	conical flask
test tube	funnel	measuring cylinder	thermometer	heatproof mat	gauze
					XXXXXXXXXXXXXX

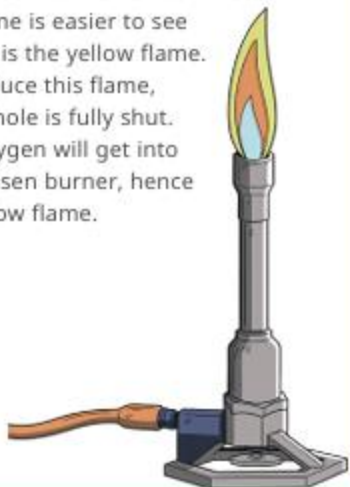
Bunsen Burner

The Bunsen burner is an important piece of scientific equipment. It is used in many science experiments and uses methane gas.



The Safety Flame

The safety flame is used when the Bunsen burner is not in use. The flame is easier to see when it is the yellow flame. To produce this flame, the air hole is fully shut. Less oxygen will get into the Bunsen burner, hence the yellow flame.



The Roaring Flame

The roaring flame is used to heat things quickly. To produce this flame, the air hole must be fully open. More oxygen will get into the Bunsen burner, hence the blue flame.



Investigation Skills

Independent variable: The variable that you change or select the values for.

Dependent variable: The variable that is measured for each change of the independent variable.

Control variable: A variable that may, in addition to the independent variable, affect the outcome of the investigation and therefore must be kept constant.

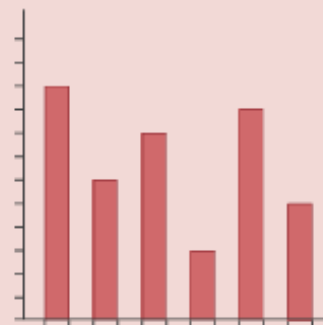
Prediction: What you think will happen and why.

Risk assessment: Identify hazards, the harms they can do and how you will minimise any risks in a practical investigation.

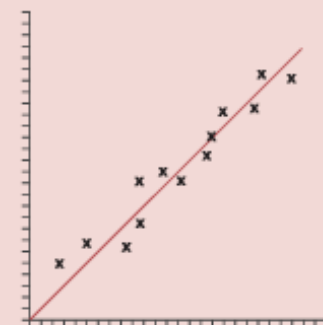
Method: Step-by-step instructions for how to carry out a practical investigation.

Results table: As the practical is carried out, write the results in a table.

Bar chart: used to display data when at least one variable is discrete or categoric.



Scatter graph: used to display data when both the independent and the dependent variables are continuous.



Conclusion: An explanation of what you found out in your investigation.

Evaluation: Where you consider the quality of your method and the data you collected.

KS3 States of Matter Knowledge Organiser

Three States of Matter

There are three main states of matter: **solid**, **liquid** and **gas**.

All matter is made up of tiny parts called particles. How they are arranged determines the state of matter and the properties of the material.

	Solid	Liquid	Gas
particle model diagram			
particle arrangement	regular structure no space between particles	irregular structure very little space between particles	irregular structure large space between particles
volume and shape	fixed volume fixed shape	fixed volume shape changes to fill bottom of container	volume increases to fill capacity shape changes to fill capacity
able to flow	no (forces between particles are very strong and hold them in fixed positions)	yes (forces between particles are weak and particles slide over one another)	yes (forces between particles are very weak and particles move randomly and rapidly)
density	high cannot be compressed (particles are already tightly packed)	high cannot be compressed (particles are already tightly packed)	low can be compressed (particles are forced closer together)
particle energy levels	low (particles vibrate around a fixed point only)	moderate (particles can move and flow but slowly)	high (particles moving rapidly and freely)
examples	wood, metal, stone, plastic	water, milk, bleach, acid	air, oxygen, carbon dioxide

matter - any substance that has mass and takes up space (volume)

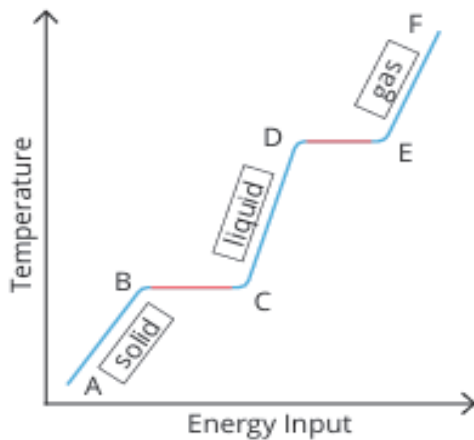
properties - characteristics or features

density - the mass of a substance per volume (**density = mass ÷ volume**)

Melting and Boiling Points

B – C When a solid substance is heated, the particles gain energy and begin to move around more.

When a solid reaches its melting point, the particles begin to break off from the uniform structure and are free to flow. The solid melts into a liquid.



D – E When a liquid substance is heated, the particles gain energy and begin to move around more. When a liquid reaches its boiling point, evaporation occurs and the liquid boils. Liquid particles break free and evaporate into a gas.

Every pure substance has a specific melting and boiling point. The purity of a substance can be checked for using knowledge of these specific melting and boiling points.

For example, pure water boils at 100°C whereas pure ethanol boils at 78°C.

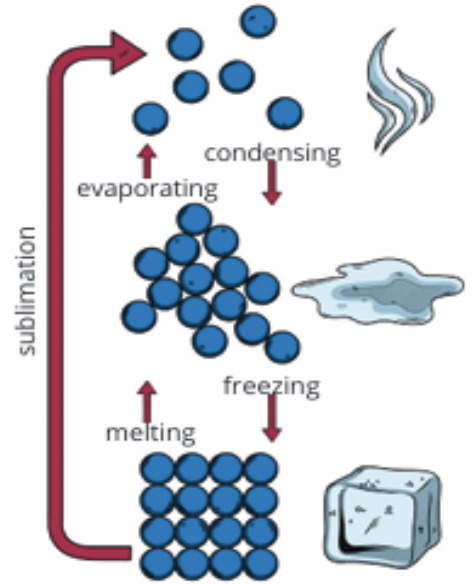
Ice melts at 0°C, and iron has a melting point of 1538 °C.

If a substance contains any impurities (dissolved solids), then its melting and boiling point will extend over a range of temperatures.

Changes of State

The arrangement of particles changes when the substance changes state.

Sublimation is when a solid changes to a gas, without going through the liquid phase.



Gas Pressure

Gas pressure is the force exerted by the gas particles on the wall of the container it is in. The more frequently air particles hit the walls, the higher the pressure rises.

Gas pressure is affected by:

- amount of gas;
- volume of container;
- temperature.

High gas pressure can be created by a high volume of particles in a small space, or with a high temperature.

An inflated balloon will shrink if placed in ice water and expand when placed in hot water.

Question
Name the hazard shown by this symbol:

Name the hazard shown by this symbol:

Name the hazard shown by this symbol:

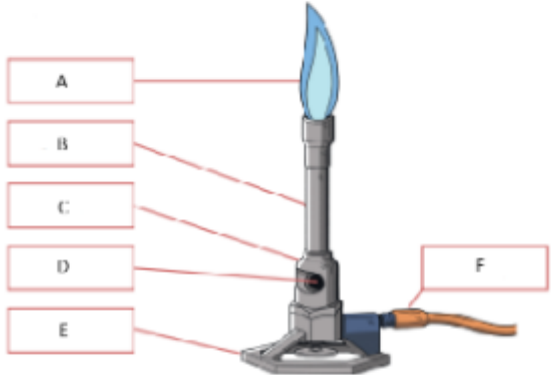
Name the hazard shown by this symbol:

Name the hazard shown by this symbol:


Name the hazard shown by this symbol:

Name the hazard shown by this symbol:

Draw a correct scientific diagram for a conical flask.
Draw a correct scientific diagram for a test tube.
Draw a correct scientific diagram for a <u>measuring cylinder</u> .

Question
Using the diagram below, name the parts of the <u>bunsen</u> burner labelled:
a)
b)
c)
d)
e)
f)

Describe how to make a safety flame.
Describe the flame that will be produced if the airhole is open.
What is the independent variable of an experiment?
What is the dependent variable of an experiment?
What is the control variable of an experiment?
What is a risk assessment?
What is a <u>conclusion</u> ?
What is an evaluation?
Describe when we would draw a scatter graph.

Question
Draw the particle model for a liquid.
What word can be used to describe the <u>arrangement</u> of particles in a solid?
Name the states in which particles can flow.
Name the state in which particles have the most energy.
Name the change of state when a liquid turns into a gas.
Name the change of state when a gas turns into a liquid.
Name three factors that affect gas pressure.
What type of substance has a specific melting point?
What will happen to the melting point of a substance if it contains impurities?
Give an example of a change of state that involves a decrease in energy.

Year 7 Physics Module 1: Unit 1 - Forces

Knowledge Organiser



The units for measuring force are newtons (N).

Friction and drag

- Friction** is a force which will slow down a moving object due to two surfaces rubbing on one another
- The greater the friction, the faster an object will slow down, or the greater the force it will need to overcome the force of friction. For example, it is easier to push a block on ice than on concrete, as the ice is smoother and causes less friction

- When an object is moving through a fluid, either liquid or gas, the force which slows it down is known as **drag**
- The fluid particles will collide with the moving object and slow it down, meaning that more force is needed to overcome this
- Both drag and friction are **contact forces** as the two surfaces in friction, and the object and fluid particles in drag, come into contact with one another
- Both drag and friction are forces so they are measured in **Newtons (N)**



A solid moves through a gas.



A solid moves through a liquid.

Reaction and upthrust

The **reaction force** is the upwards contact force that stops objects from falling through whatever they are **standing on**. It is always **equal** in size to the object's **weight**.



The **upthrust force** is the upwards contact force due to the gas or liquid surrounding an object. If the upthrust is **greater** than the object's **weight**, the object will float.

Measuring forces

Elastic materials will stretch with a force and then return to their original shape when the force is taken away.

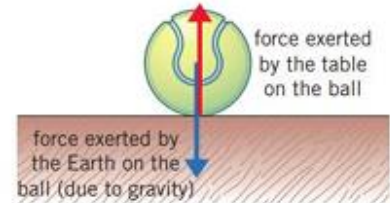
Materials like Plasticine will stretch with a force but they will not return to their original shape afterwards. Plasticine is not elastic.

Springs are used to measure the size of a force because they are elastic. A big force stretches a spring further than a small force. **Force meters** have springs inside them.

This force meter is measuring a force of 1 N.



- Forces always act in pairs, we call these **interaction pairs** e.g. the tennis ball exerts a downward force of **weight** onto the table, the table exerts an equal and opposite reaction force onto the ball



Energy

- Energy** is needed to make things happen
- It is measured in **joules** or **kilojoules**
- The **law of conservation of energy** says that energy cannot be created or destroyed, only transferred
- This means that the total energy before a change is always equal to the total energy after a change

Energy can be in different energy **stores**, including:

- Chemical** – to do with food, fuels and batteries
- Thermal** – to do with hot objects
- Kinetic** – to do with moving objects
- Gravitational potential** – to do with the position in a gravitational field
- Elastic potential** – to do with changing shape, squashing and stretching

Forces are pushes or pulls that 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

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

Contact forces need to touch the thing that they are affecting. Examples of contact forces are:

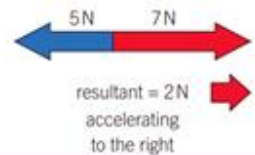
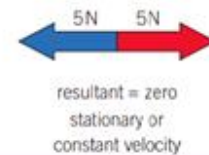
- friction
- air resistance
- water resistance
- upthrust

Some forces do not need to touch the thing that they are affecting. They are called non-contact forces. There are three non-contact forces:

- magnetism
- weight
- static electricity

Balanced and unbalanced forces

- When forces acting on an object are the same size, but acting in different directions, we say that they are **balanced**
- When forces are balanced, the object is either not moving (stationary) or moving at a constant **speed**
- When the two forces acting on an object are not the same size, we say that the forces are **unbalanced**
- When forces are **unbalanced**, the object will either be in **acceleration** or **deceleration**
- The **resultant force** is the difference between the two unbalanced forces



Forces Basics (KO pg 1)

Q	Question
1	What is a force?
2	Name one effect a force can have on an object.
3	What unit is used to measure force?
4	What does upthrust do?
5	Give one example of a contact force.
6	Which of these is a non-contact force? A) friction B) magnetism C) air resistance
7	What force slows objects moving through air?
8	What force acts between magnets?
9	What happens to an object if forces are balanced? (1 sentence)
10	Give two non-contact forces.

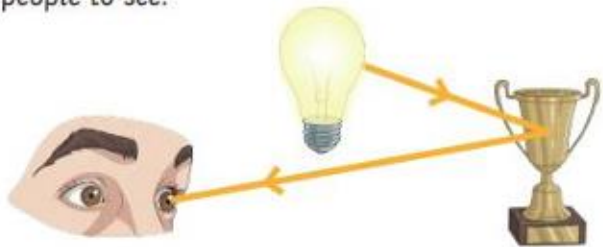
Q	Question
1	What is friction?
2	Name the force that slows objects in water.
3	What type of force is air resistance?
4	Do contact forces require touching?
5	Which force pulls objects toward Earth?
6	Which is NOT a contact force? A) water resistance B) weight C) friction
7	Name two non-contact forces
8	Describe what happens when friction increases. (1 sentence)
9	What force helps objects float?
10	Name two contact forces.

Year 7 Physics Module 1: Unit 1 - Sound and Light Knowledge Organiser



Light and Vision

Light is needed for the eye to see things. It travels in straight lines from a **light source** and is **reflected** by objects in the environment. This **reflected light** then enters the eye, enabling people to see.



Light Sources

A **light source** can be either naturally occurring or human-made. Natural **light sources** include the Sun, lightning and bioluminescence. Artificial **light sources** include lightbulbs, electronic devices and fireworks.

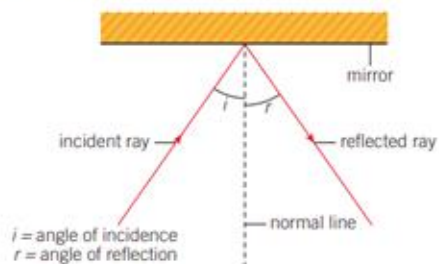
Mirrors

Mirrors are not **light sources**. They **reflect light** because they are **shiny**. **Light** bounces off their surfaces.



Reflection

- The **law of reflection** states that the **angle of incidence** will be equal to the **angle of reflection**



- For light reflecting off a smooth surface will form an image is called **specular reflection**
- Reflection off of a rough surface will not form an image and is known as **diffuse scattering**



Light Sources

Light comes from a **light source**. **Light sources** can be **natural** or **artificial**.

Natural light sources are found in nature.



The Sun and lightning are **natural light sources**. Some living things, such as anglerfish, produce light. This is known as bioluminescence.

Natural light sources are found in nature.



Torches, screens on devices and candles are all examples of **artificial light sources**.

Reflection

Reflection occurs when **light** bounces off an object.



Light Basics (KO pg 2)

Q	Question
1	What is light?
2	What is the main source of light on Earth?
3	What happens when light hits a mirror?
4	What is reflection?
5	Which travels faster: light or sound?
6	Which of these is transparent? A) glass B) wood C) metal
7	What does opaque mean?
8	Give one example of a light source.
9	What happens when light cannot pass through an object?
10	Describe reflection in one sentence.

Q	Question
1	What is a shadow?
2	How are shadows formed?
3	What material lets some light through?
4	What direction does light travel in?
5	Which is translucent? A) glass B) frosted glass C) brick
6	What happens when light is blocked?
7	Define transparent.
8	What is the angle of reflection equal to?
9	Give one use of reflection.
10	Explain how shadows change size. (1 sentence)

Year 7 Physics Module 1: Unit 1 - Sound and Light Knowledge Organiser



Sound and Vibrations

All sounds are created by **vibrations**. You might not be able to see **vibrations** but when an object **vibrates**, the air around the object also **vibrates**. These **vibrations** travel through the air particles into our **ears**. When they reach the **eardrum** and inner **ear**, sounds can be heard. These **vibrations** are called **sound waves** and can travel through any medium, including solids, liquids and gases.

Absorbing Sound

When we don't want a sound to be heard, we can try to **absorb** the **sound waves** or **vibrations**. If the **vibrations** are **absorbed**, the sound is muffled. Different materials can be used to **absorb** sound and these materials can be used in **ear** defenders or **ear** plugs. It is even possible to **soundproof** a whole room, such as a music studio.

Ear defenders can be used to reduce unwanted noise from reaching our **ears**. Some people find it difficult to hear loud noises, constant background noise or strange sounds so **ear** defenders help them.

Sound Over Distance

The closer a sound source is, the louder it will be. It is easier to hear someone talking when they are near you than when they are at a **distance**. This is because the sound loses energy over a **distance**.



Key Vocabulary

absorb	'Absorb' means to take in or keep inside.
amplitude	Amplitude is a measure of the greatest distance that a vibration moves across and the height of the sound wave it produces.
sound wave	A sound wave is the movement of energy created by the vibration of a sound source.
soundproof	Soundproof objects and materials do not allow sound to pass into or through them.
eardrum	The eardrum is the piece of thin, stretched skin inside the ear that is moved by vibrations .

Sounds in Solids



The **vibrations** that create sound move from particle to particle. The particles in a solid are closely held together. This means that it is easier for sound to travel through a solid object than through other states of matter.

Sounds in Liquids



In a liquid, the particles are quite close together and can move freely over each other. This means that the **vibrations** from a sound can't travel as easily as in a solid. Sound can still travel through liquids but not as well as in a solid.

Sounds in Gases



Gas particles are spread far apart. It is more difficult for **vibrations** to travel through a gas than through a liquid or a solid. Sound can still travel through gases. Most of what we hear travels through the air.

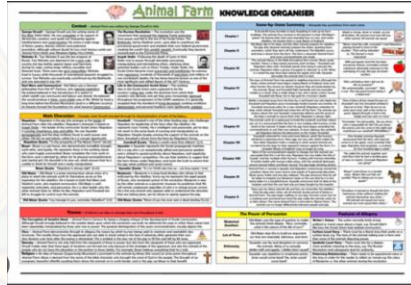
Sound Basics (KO pg 3)

Q	Question
1	What causes sound?
2	What medium does sound travel through?
3	Can sound travel in a vacuum? (Yes/No)
4	What is pitch?
5	What is volume?
6	Which has a higher pitch: fast or slow vibrations?
7	What happens to sound as distance increases?
8	Give one example of how sound is produced.
9	What type of wave is sound?
10	Describe vibration in one sentence.

Q	Question
1	What happens when vibrations increase?
2	What affects loudness?
3	What is an echo?
4	What surface reflects sound best?
5	Which travels faster in solids or gases?
6	What is absorbed sound?
7	Give one example of sound insulation.
8	Why are walls sometimes padded in studios? (1 sentence)
9	What happens to sound energy when absorbed?
10	Define frequency.

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.



St. Wilfrid's
R.C. College

Look and write	Cover and write	Check

Look: Read the key information in the look column.

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

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St. Wilfrid's
R.C. College

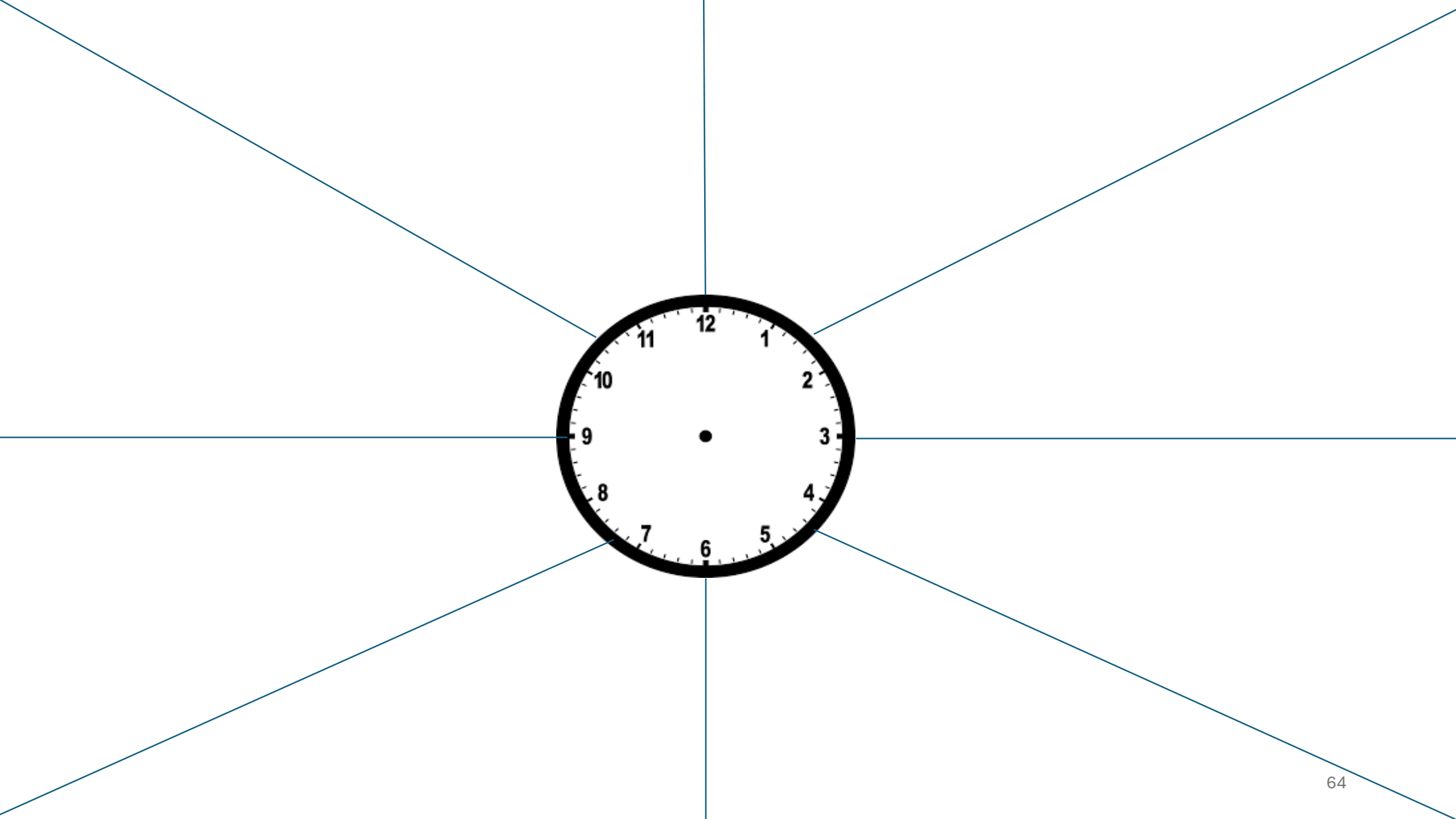
Look

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write**

Cover and write

Check

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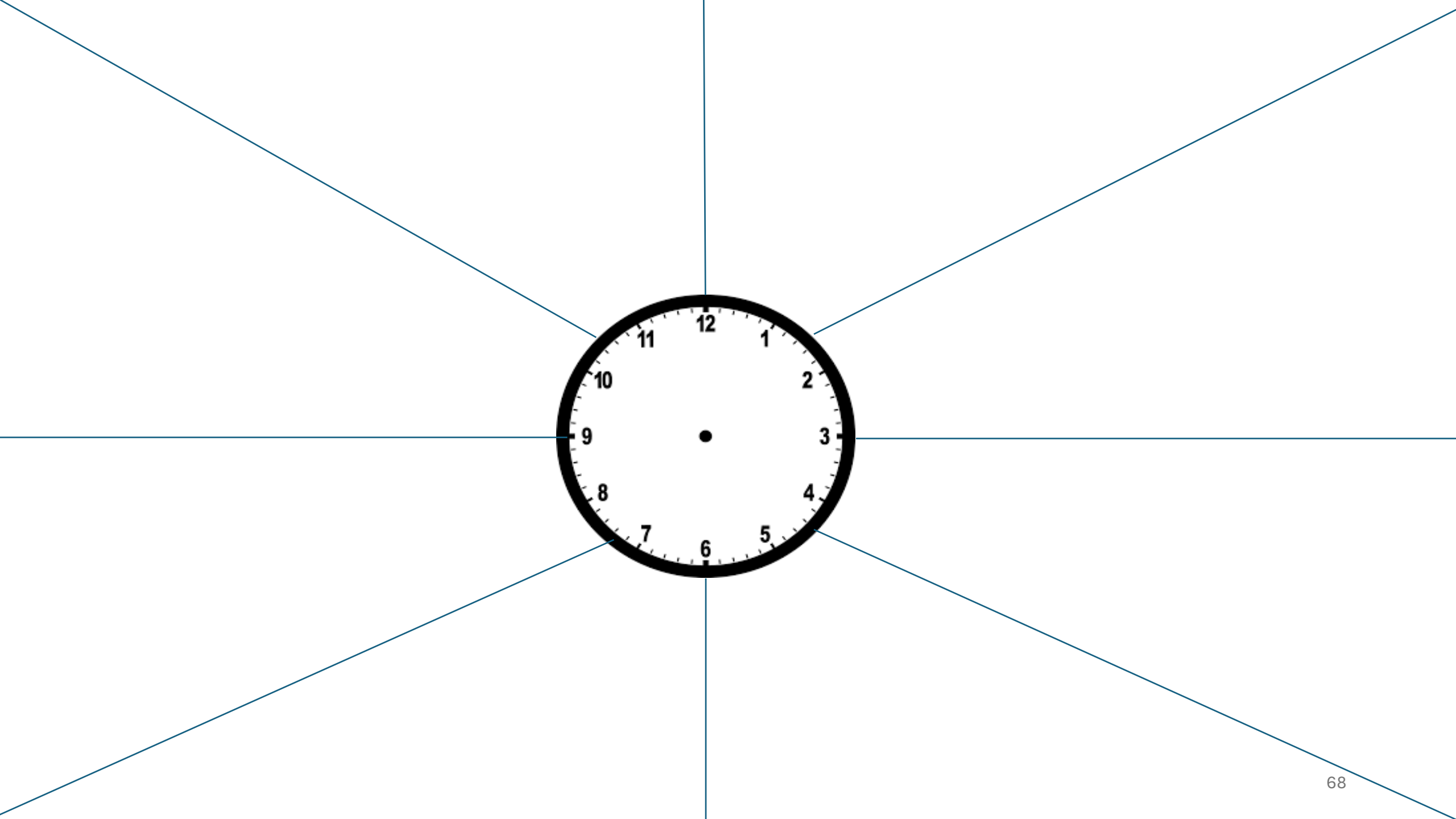
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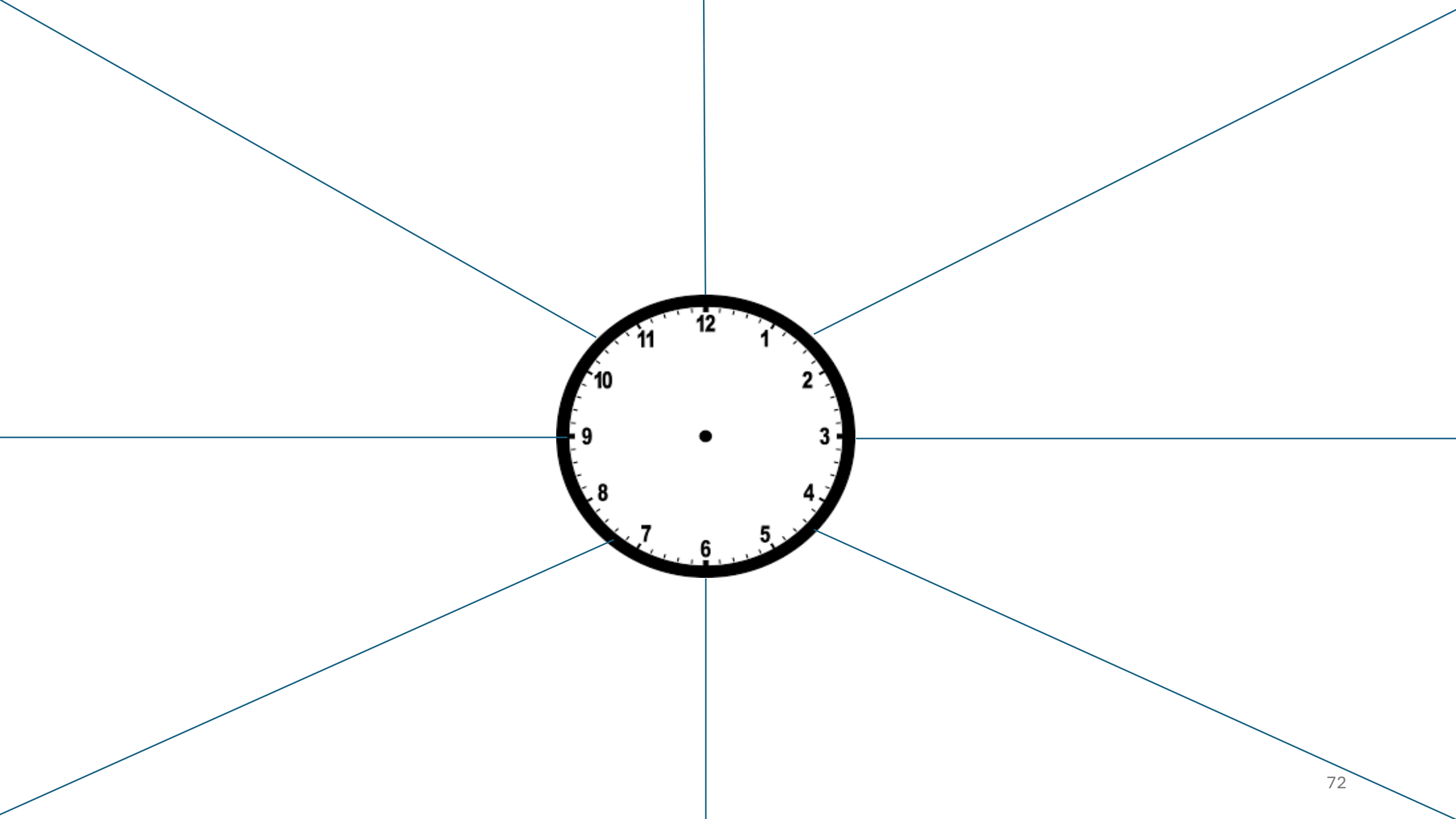
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