READY RESPECTFUL SAFE

UNITY

UNITY
ACADEMY BLACKPOOL

KNOWLEDGE PREP

YEAR 11

HALF TERM 2

NAME	
TUTOR GROUP	
ACADEMIC YEAR	

RRS STICKERS

Knowledge Organisers and Homestudy

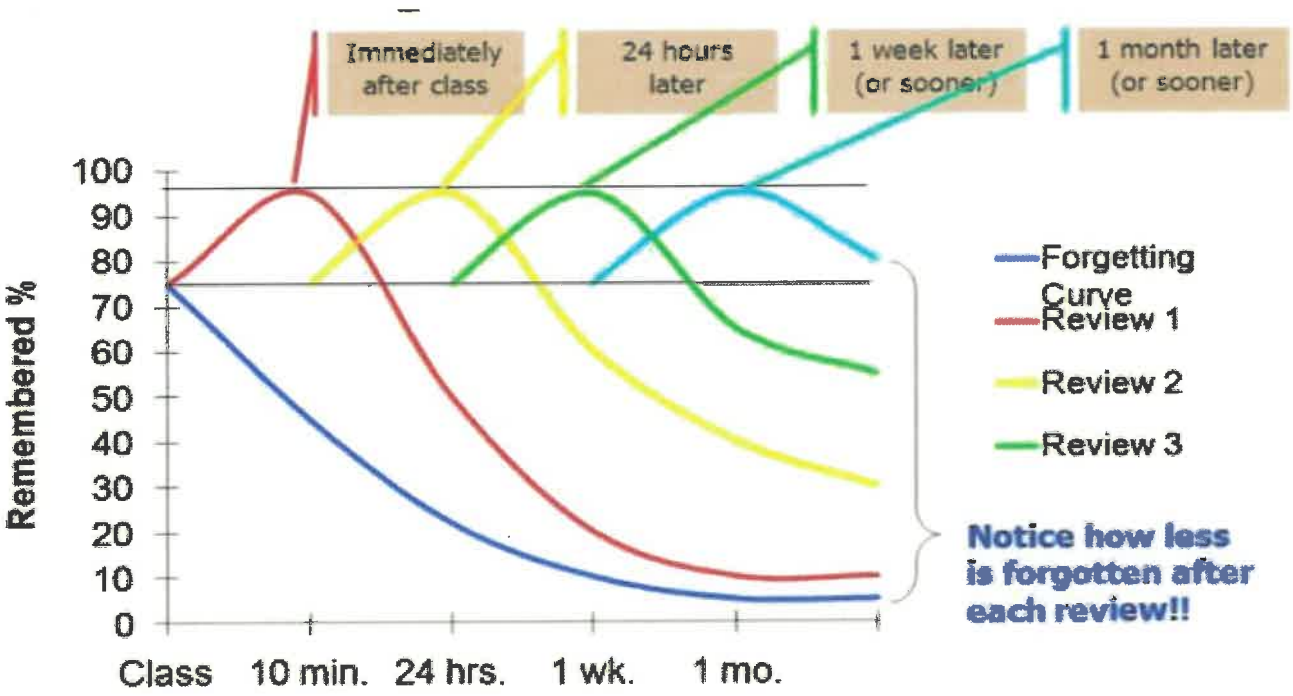
What is a knowledge organiser?

All subjects at Unity Academy produce knowledge organisers for each year group, each half term. A knowledge organiser sets out the Key vocabulary, prior learning links and essential knowledge from a topic on a single page. It is expected that every student will learn and commit this information to memory.

Why do we use knowledge organisers?

The concept of knowledge organisers and retrieval practice is based on vast amounts of scientific research and studies considering how our memory works and how we best learn. They also support in the fact that the curriculum is a knowledge rich curriculum which requires our pupils to gain a wide range of knowledge. When we talk about knowledge, we do not mean knowledge for the purpose of recalling lots of facts but to ensure that learners can retrieve these facts and then apply them to unfamiliar situations or to solve problems.

What does the science say?



The forgetting curve above, is a concept introduced by the German psychologist Hermann Ebbinghaus in the late 19th century. It illustrates the decline of memory retention over time.

If we learn something new, but then make no attempt to relearn that information, we remember less and less of it as the hours, days and weeks go by.

Without regularly reviewing and reinforcing our learning, our ability to retain the information plummets. This decline in memory is not linear, it follows a curve, emphasizing the need for timely reinforcement to counteract the natural fading of memories.

Knowledge Organisers and Home-study

How do you ensure that pupils know and remember the essential knowledge?

Students will be given a hard copy of the knowledge organiser booklet at the start of the half term. They are expected to have this with them as part of their equipment at all times. Staff will likely ask them to use their knowledge organiser within lessons. Students will regularly be 'quizzed' on this knowledge in assembly, during lessons through low stakes quizzing, knowledge checks, home-study and 'Do Now' tasks.

What does Homework look like for Y7-9 at Unity Academy?

At Unity Academy, we have an approach to homework that is based on knowledge organisers. For homework, students are expected to learn the information in one or more boxes from the knowledge organiser. They can do this in a variety of ways. By developing these learning techniques, students are not only learning important information, but developing strategies that will help them with their revision for important examinations. Research shows that the regular completion of quality homework can improve student progress by 5 months (EEF Research).

Teachers may choose to direct you to complete a particular section of the current knowledge organiser or may even ask you to revise/retrieve information from the previous half terms booklet, so it is important that you keep them safe.

As the purpose of the knowledge organiser homework is for students to develop their own knowledge, teachers do not mark the work they have done. However, teachers will sign to show they have checked that the homework has been completed. If the homework task has not been completed, parents can be contacted by text. The evidence of learning comes in two forms - low-stakes quizzes in lessons and formal assessments. Students who regularly use the knowledge organisers effectively have a better chance of achieving their target grades.

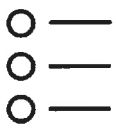
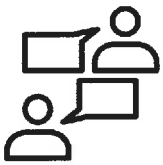
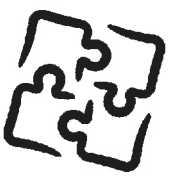
Students in Y10-11 are expected to complete at least 1 hour of home-study per night across three different subjects (20 minutes each) as outlined below.

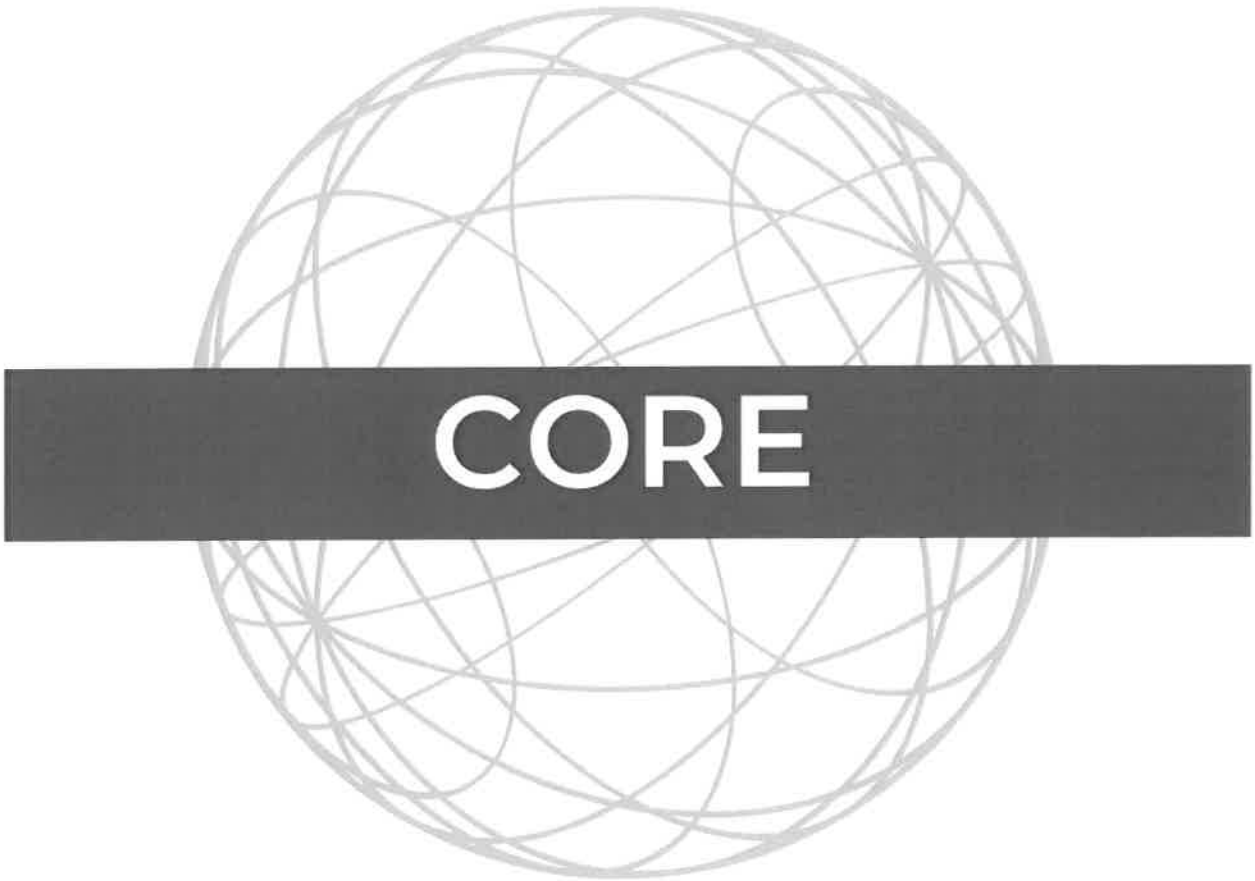
	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1					
Subject 2					
Subject 3					

How to use your Knowledge Organiser

The aim of the knowledge organiser is to ensure that **ESSENTIAL KNOWLEDGE** is stored and retrieved over a long period of time.

You need to ensure that you keep your knowledge organiser in your bag, ready for revision, quizzing and to refer to at any time in all of your subjects.

	Look, Cover, Write, Check	Definitions to Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your knowledge organiser 	Write down the key words and definitions. 	Use your knowledge organiser condense and write down key facts and/or information on your flash cards. 	Read through a specific area of your knowledge organiser 	Create a mind map with all the information that you can remember from your knowledge organiser. 	Ask a partner or someone at home to have the quiz questions or flash cards in their hands. 
Step 2	Flip the knowledge organiser and write everything you can remember. 	Try not to use the solutions to help you. 	Add diagrams or pictures if appropriate. Write the solutions on the back of the cards. 	Turn over and answer the questions related to that area. 	Check your knowledge organiser to correct or improve your mind map. 	Ask them to test you by asking questions on the section you have chosen from your knowledge organiser. 
Step 3	Check what you have written. Correct mistakes and add extra information. Repeat. 	Check your work. Correct using red pen and add more information if appropriate. 	Self quiz using the cards or ask some to help by quizzing you. 	Turn back over and mark your quiz. Keep quizzing until you get all questions correct. 	Try to make connections that links information together. 	Either say or write down you answers. 


CORE

English – Year 10 Unit 1 A Christmas Carol

Essential knowledge

The Poor Law
The Victorian Era, Poverty and Social Class.
Symbolism, character and narrative voice
Symbolism, religion, Social responsibility
Symbolism, Poverty and Family
Character, symbolism and redemption
Transformation and redemption
Critical responses to 'A Christmas Carol'
Symbolism

Prior learning links

Allegory Year 8
The Text is a Construct Year 7
Realism Unit 1 year 9
Symbolism year 7 & 8
Capitalism & Socialism Year 8
Characterisation Year 7
Narrative voice Year 7
Themes year 7, 8, 9
Morality Year 7 Antigone, year Crucible

Key vocabulary - Poverty; The Poor Law; Social Class; Redemption; Novella; Embodies; Construct; Allegory; Isolation

Context

Poverty 	Poverty: Dickens had a comfortable childhood until the age of twelve, when his father was sent to a debtors' prison and Charles had to work in a factory. The harsh conditions made a lasting impression: through his works of social criticism, he sought to draw attention to the plight of the poor.
The Poor Law 	The Poor Law: In order to deter people from claiming financial help, the government made claimants live in workhouses –essentially prisons for the poor. Dickens spent 1843 touring factories and mines in England and wished to highlight the situation facing the poor. 'A Christmas Carol' was published in December of that year. "Are there no Prisons?...and the Union workhouses?"
The Victorian Era 	The Victorian era was between 1837 and 1901 (most of Dickens' life). Whilst this was a time of industrial revolution, it was also an extremely harsh time to live, with huge differences between the lifestyles of the rich and poor. The Victorian era was a period of great change. In this time, the population of England doubled –from 16.8 million 1851 to over 30 million in 1901. Rapid population growth fuels concerns that there would not be enough food to go around: "If they would rather die," said Scrooge, "they had better do it, and decrease the surplus population."
Social Class 	Social Class: Despite industrial changes altering the social landscape, there were still relatively distinct social classes in operation: the nobility upper class, the middle class, and the working class. Life was terrible for the poorest: lack of money resulted in a negligible food supply. For some working families, money was so tight that they required their children to work in order to survive.

Knowledge Links

Allegory 	A story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one.
The text is a construct 	Don't forget! **Nobody in the novella is real**: every character has been created by Dickens in order to make a specific point or serve a purpose. For example, Fred ***embodies*** the ideas of kindness, generosity and the importance of family that Dickens was eager to communicate.

English – Year 10 Unit 1 A Christmas Carol

Essential knowledge

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Key vocabulary - Poverty; The Poor Law; Social Class; Redemption; Novella; Embodies; Construct; Allegory; Isolation

Big Ideas

Poverty and Greed 	Dickens wanted to highlight the plight of the poor in Victorian England, and how they are exploited by the greed of the wealthy. He used the harshness of winter to further emphasise this. He also uses Scrooge as a vehicle to show that financial wealth does not mean contentment; Scrooge is impoverished in other ways (family, friends, happiness). "Darkness was cheap, and Scrooge liked it."
Redemption 	Characters like Fred and Bob demonstrate compassion and forgiveness towards Scrooge; both are seen to live happy lives –they demonstrate the path to Scrooge's redemption. Scrooge's kindness towards Bob Cratchit in Stave 5 is the antithesis of his treatment of Bob in Stave 1, with each act emphasising his redemption. "I am as light as a feather, I am a happy as an angel, I am as merry as a school-boy. I am as giddy as a drunken man."
Isolation Vs Family 	Scrooge is "solitary as an oyster"–isolated and unhappy. Scrooge was Marley's "sole friend and sole mourner". The warmth and emotional richness of families is used as a contrast to Scrooge's self-determined isolation. The disruption to Scrooge's childhood and family life may also have contributed to his future behaviour. Dickens' message may be that family is the cornerstone of a happy society.

Key Quotes

Hard and sharp as flint" (Description of Scrooge, Stave 1)

"I wear the chain I forged in life" (Jacob Marley, Stave 1)

"From the crown of its head there sprung a bright clear jet of light" (Stave 2)

"…the master passion, Gain, engrosses you." (Belle to Scrooge, Stave 2) "Scrooge entered timidly, and hung his head before this spirit." (Stave 3)

"The boy is Ignorance. The girl is Want. Beware them both." (Ghost of Christmas Present, Stave 3)

"Avarice, hard dealing, griping cares? They have brought him to a rich end, truly!" (Scrooge, Stave 4)

"I will not shut out the lessons that they teach." (Scrooge, Stave 4)

English – Year 10 Unit 1 A Christmas Carol

Context

What happened to Dickens' father when Dickens was 12?
- In what year was 'A Christmas Carol' published?
- What did the Poor Law require of people who claimed financial support?
- What happened to the population of England during the Victorian era?
- Briefly describe living conditions for the poorest families in Victorian England.
- Research Thomas Malthus and his views on population growth. How do his ideas relate to 'A Christmas Carol'?

Big Ideas

Poverty and Greed 	• What does Dickens use the character of Scrooge to show? • How does the setting in Stave 1 reflect Scrooge's own attitudes?
Redemption 	• What is the significance of the characters of Bob Cratchit and Fred? • Examine Scrooge's treatment of Bob Cratchit in Stave 1. Compare this with his actions in Stave 5. What do you notice? • Using a page of your reflection log, write down all the factors that influence Scrooge's redemption. At what point does he begin to change? Which spirit do you think has the most impact? Why?
Isolation Vs Family 	• Why does Scrooge live in isolation? What are the events in his life that have caused this? • In what way do Scrooge's attitudes differ to Fred's in Stave 1? • Describe Scrooge's experience of childhood. How might this have influenced his actions as an adult? • Write a page of your reflection log on the Cratchit family. How do their ideas and attitudes differ to Scrooge's? What point might Dickens be making? • Re-read Stave 3. How does Dickens show that family and friendships are vital?

Knowledge Links

Allegory	What is an allegory? How does this term apply to 'A Christmas Carol'?
The text is a construct	• Explain what is meant by this phrase. • For each character, explain why they have been constructed –what might Dickens have wanted to achieve through each one?

Key Quotes

Recall the key quotes you have been learning. Explode the quotes – explain which character or theme it is about and what you discuss in an essay about each quote.

Extra Research : Challengers

Write a page of your reflection log on the character of Fred and what he represents.
- How is Bob Cratchit treated in Stave 1? How does this compare with Scrooge's treatment of him in Stave 5?
- Write a page of your reflection log on the characters of Belle, Fan and Mrs Cratchit –how are the women in the text presented by Dickens?
- How does Fezziwig contrast with Scrooge as an employer?
- What is meant by 'The boy is Ignorance. The girl is Want.' What does this say about Victorian society?

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Year 11 – Using Number
Types of number and sequences

Essential knowledge
- Factors and multiples
- Express numbers as a product of primes
- Find the HCF and LCM
- Describe, continue and explore sequences
- Find the nth term of a linear sequence

Key Vocabulary
Factor: numbers we multiply together to make another number
Multiple: the result of multiplying a number by an integer.
HCF: highest common factor. The biggest factor that numbers share.
LCM: lowest common multiple. The first multiple numbers share.
Arithmetic: a sequence where the difference between the terms is constant.
Geometric: a sequence where each term is found by multiplying the previous term by a fixed, non-zero number.
Sequence: items or numbers put in a pre-determined order

Prior learning links
Sequences (Y8)
Testing Conjectures (Y9)
Prime numbers and proofs (Y7)

Prime numbers
A prime number is an integer that has only two factors, itself and 1.

2, 3, 5, 7, 11, 13, 17, 19, 23, 29 …

2 is the only even prime number.

Multiples
Multiples are the 'times table' of a given number.

3, 6, 9, 12, 15, …

These are the first 5 multiples of 3.

Factors
A factor is one of two or more numbers that divides into a number without a remainder.

Factors of 10
1, 2, 5, 10

Factors of 24
1, 2, 3, 4, 6, 8, 12, 24

Arithmetic and Geometric sequences
Arithmetic Sequences change by a common difference. This is found by addition or subtraction between terms (e.g. 3, 7, 11, 15 …).

Geometric Sequences change by a common ratio. This is found by multiplication or division between terms (e.g. 2, 4, 8, 16, 32 …).

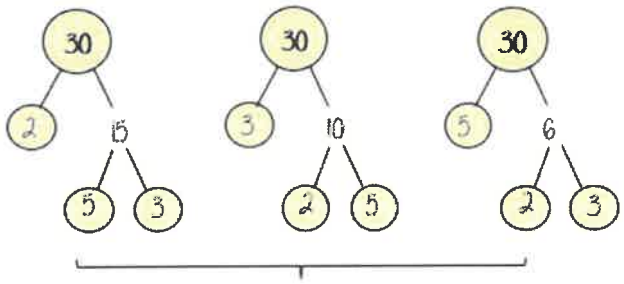
Term to term rule – How you get from one term (number in the sequence) to the text term.

LCM – Lowest Common Multiple
The lowest common multiple is the lowest multiple shared by two or more numbers

LCM of 18 and 30

18: 18, 36, 54, 72, 90
30: 30, 60, 90

The LCM of 18 and 30 is 90.

Product of prime factors


All three prime factor trees represent the same decomposition, i.e. the prime factors that multiply together to make the original number, e.g. $30 = 2 \times 3 \times 5$

HCF – Highest Common factor
The HCF of two numbers is the largest number which will divide exactly into both of them.

HCF of 18 and 30

18: 1, 2, 3, 6, 9, 18
30: 1, 2, 3, 5, 6, 10, 15, 30

The HCF of 18 and 30 is 6.

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Year 11 – Using Number
Types of number and sequences

Prior learning links

c is an integer. Are the following even, odd, or is it impossible to tell?

$10c$ | $2c + 2$ | $c + 7$ | $6c + 3$

Generate the first 5 terms of the sequences using the position-to-term rule given.

The 3 times-table

1	2	3	4	5

2 less than the 3 times-table

1	2	3	4	5

Key Vocabulary

Use cover, look, write, check to write the definitions …

Factor:
Multiple:
Highest Common Factor:
Lowest Common Multiple:
Sequence:
Arithmetic Sequence:
Geometric Sequence:

Prime Numbers

1. Which is the only even prime number?
2. List all the prime numbers less than 30.
3. How many factors does a prime number have?
4. What is the product of the first 3 prime numbers?

Multiples

1. List the first five multiples of 6.
2. What is the 5th multiple of 5?
3. What is the 8th multiple of 3?
4. The 5th multiple of 4 is the same as which multiple of 10?

Factors

1. List the factors of 32.
2. List the factors of 64.
3. The factors of an odd number are all odd. True or false?

Arithmetic and Geometric sequences

What are the term to term rules of the following sequences, and what are the next two terms in each sequence?

1. 5, 12, 19, 26 …
2. 69, 57, 45, 33 …
3. 3, 9, 27, 81, 243 …
4. 128, 64, 32, 16, 8 …

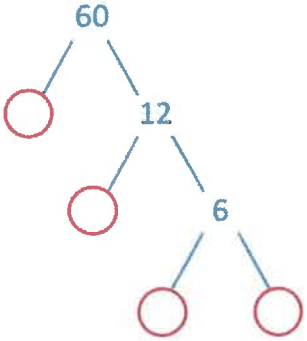
Create examples of arithmetic and geometric sequences of your own.

LCM – Lowest Common Multiple

1. What is the LCM of 6 and 8?
2. What is the LCM of 15 and 45?
3. What is the LCM of 12, 20 and 44?
4. A toad croaks every 8 seconds. A frog croaks every 6 seconds. They both croak at the same time. After how many seconds will they next both croak at the same time?
5. The lowest common multiple of two numbers is 70. Both numbers are less than 20. Write down two possible numbers.

Product of prime factors

Complete the prime factorisation tree to find the prime factors of 60.



Use the same method to find the prime factors of:

1. 20
2. 64
3. 120
4. 180
5. 420

HCF – Highest Common Factor

1. What is the HCF of 18 and 32?
2. What is the HCF of 21 and 27?
3. What is the HCF of 17 and 23?
4. What is the HCF of 12, 24 and 30?
5. Alannah has two lengths of ribbon. One length of ribbon is 36cm long and the other length is 45cm long. Alannah wants to cut lengths of ribbon into shorter lengths that are of equal length. Alannah does not want any ribbon left over. What is the longest possible length for each of the shorter lengths of ribbon?

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Year 11
C6: Rate and extent of chemical reactions
Chemistry

Essential knowledge

- Chemical reactions can occur at vastly different rates.
- There are many variables that can be manipulated in order to speed them up or slow them down.
- The direction of reversible reactions can be changed by changing the conditions.
- Understanding energy changes that accompany chemical reactions is important to maximise the yield of useful products in industry.

Key Vocabulary

- Reactant
- Product
- Concentration
- Catalyst
- Activation energy
- Collision theory
- Equilibrium

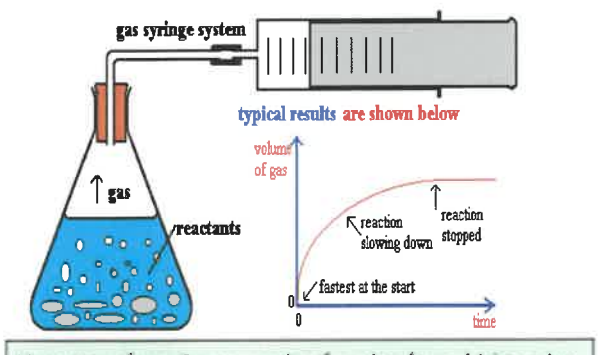
Prior learning links

- The unit for mass is gram (g), or kilogram (kg). Mass is measured using a top pan balance.
- The unit for volume is centimetre cubed (cm^3) The volume of gas produced in a reaction can be measured using a gas syringe or a measuring cylinder.
- When the temperature is increased reactant particles gain kinetic energy.
- The minimum amount of energy that particles must have to react is the **activation energy**.
- Catalysts change the rate of chemical reactions but are not used up during the reaction. Different reactions need different catalysts.
- Catalysts increase the rate of reaction by reducing the activation energy.

Collision theory to explain rates of reaction

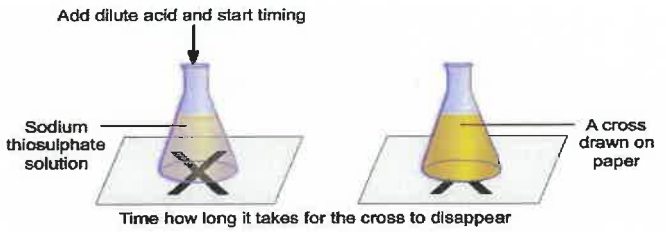
- Increasing the **concentration** of reactants in solution increases the rate of reaction because there are more reactant particles; increasing the frequency of collisions.
- Increasing the **pressure** of reacting gases increases the rate of reaction because the reactant particles are closer together; increasing the frequency of collisions.
- Increasing the **surface area** of a solid (by crushing it), reactant increases the number of particles available; increasing the frequency of collisions.
- Increasing the **temperature** increases the frequency of collisions between reactant particles with more kinetic energy.

Measuring the rate of reactions 1
Measure volume of gas produced:



Mean rate of reaction = quantity of product formed / time taken

Measuring the rate of reactions 2
Disappearing cross method:



- During the reaction between hydrochloric acid and sodium thiosulphate a cloudy yellow-white precipitate is formed.
- This method is susceptible to error though as it is **subjective,** given that different people may not agree on the exact moment that the cross disappears.

Reversible reactions

- In a reversible reaction the products of the **reaction can react to produce the original reactants**. They are represented with the symbol below:

$$A + B \rightleftharpoons C + D$$

- **If a reversible reaction is exothermic in one direction, it is endothermic in the opposite direction.**
- The same amount of energy is transferred in both the forwards and reverse reaction.

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Year 11
C6 Rate and extent of chemical reactions
Chemistry

Essential knowledge

- Chemical reactions can occur at vastly different rates.
- There are many variables that can be manipulated in order to speed them up or slow them down.
- The direction of reversible reactions can be changed by changing the conditions.
- Understanding energy changes that accompany chemical reactions is important to maximise the yield of useful products in industry.

Key Vocabulary

Which word best describes:

1. Chemicals at the end of a reaction?
2. The mass of reactant in a solution?
3. A substance that reduces the activation energy of a reaction?
4. The minimum energy required for a reaction to occur?
5. When the rate of the forward & reverse reactions are equal.

Prior learning links

1. What is the unit for mass?
2. What equipment is used to measure mass?
3. What is the unit for volume?
4. What equipment can be used to measure volume of a gas produced in a reaction?
5. Why can catalysts be reused to speed up the same reaction again?
6. What is the activation energy?
7. What effect do catalysts have on the rate of reaction?
8. What effect do catalysts have on the activation energy of a reaction?

Collision theory to explain rates of reaction

1. State 4 factors which can increase the rate of a reaction?
2. Which factor only applies to gases?
3. Which factor only applies to solids?
4. Which factors increase the frequency of collisions?
5. Which factor also increases the energy of the reactant particles?
6. When a solid reactant is crushed into a powder, what happens to the surface area: **Increases** or **decreases**?
7. If a reaction mixture is heated, what type of energy do the reactant particles gain?

Measuring the rate of reactions 2

1. We use the disappearing cross method if one of the products is what: **soluble** or **insoluble**?
2. If we increase the concentration of acid used, will the cross disappear **faster** or **slower**?
3. Can you explain your answer to question 2?
4. Name the two reactants used in the disappearing cross required practical
5. Name the precipitate formed in the reaction
6. Explain why the disappearing cross method is susceptible to error
7. Briefly explain the disappearing cross method

Measuring the rate of reactions

1. Name the piece of equipment used to measure the volume of gas produced
2. When is the rate of reaction fastest, at the **start** or **end** of the reaction?
3. Is the gradient of the graph steepest at the **start** or **end** of the reaction
4. From the graph how can you tell that the reaction has stopped?
5. Write down the equation used to calculate the mean rate of reaction.

Reversible reactions

1. What happens during a reversible reaction?
2. What symbol is used to show a reversible reaction?
3. If a reversible reaction is exothermic in one direction what is it in the other direction?
4. If a reversible reaction absorbs 2350KJ of energy in one direction, how much energy will be released in the opposite direction?

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Year 11
C7 Organic chemistry
Chemistry

Essential knowledge

- Organic chemistry is the chemistry of carbon compounds.
- Carbon atoms form chains and rings linked by C-C bonds.
- Most organic compounds are living, or once-living materials from plants and animals.
- Organic sources include fossil fuels which are also feedstock for the petrochemical industry.
- Chemists modify organic feedstock to make new and useful materials such as polymers, pharmaceuticals, perfumes and flavourings, dyes and detergents.

Key Vocabulary

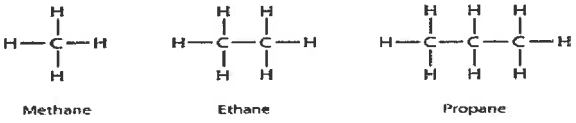
- Crude oil:.
- Hydrocarbons (HC):
- Alkanes:
- Finite:
- Fractional distillation:
- Fractions:
- Viscosity:
- Flammability:

Prior learning links

- Changes of state are reversible and include: boiling, when a liquid changes into a gas when heated; and condensing, when a Gas changes into a liquid when cooled
- Boiling point and condensing point are the temperature at which both processes occur.
- A mixture contains two or more types of element or compound, not chemically bonded.
- A compound contains two or more elements chemically bonded.
- Chemists can make useful, new compounds by carrying out chemical reactions.

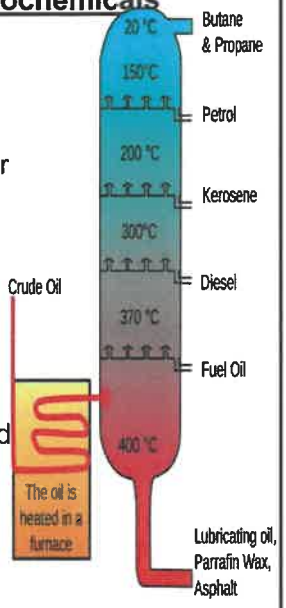
Carbon compounds as fuels and feedstock

- Crude oil is a finite resource, which means it will eventually run out.
- Crude oil is the remains of ancient biomass, mainly plankton that were buried in mud.
- Crude oil is a mixture of a large number of compounds called Hydrocarbons.
- Hydrocarbons are compounds made of carbon and hydrogen atoms only, bonded together.
- Many of the hydrocarbons are alkanes.
- Alkanes have the general formula CnH2n+2
- The first 4 alkanes are Methane (CH_4), Ethene (C_2H_6), Propane (C_3H_8) and butane (C_4H_{10}).
- Alkanes can be represented like this:



Fractional distillation and petrochemicals

- During fractional distillation, Hydrocarbons are heated and evaporate.
- As they rise, they cool and condense when they cool to their boiling point.
- They are collected as fractions with a similar number of carbon atoms.
- The fractions can be processed to produce fuels and feedstock for the petrochemical industry.
- Many of the fuels that we depend on are produced from crude oil.
- Many useful materials are produced by the petrochemical industry.



Properties of Hydrocarbons

- The boiling point of a Hydrocarbon increases as their length increases.
- The viscosity of a Hydrocarbon (how thick it is), increases as their length increases.
- The flammability of a Hydrocarbon decreases as their length increases.
- As Hydrocarbons combust (burn), the Hydrogen and Carbon atoms are oxidised.
- During complete combustion the only products are Water (H_2O) and Carbon dioxide (CO_2).

Cracking & properties of alkenes:

Catalytic cracking: A high temperature & a catalyst
Steam cracking: A high temperature and steam.

- Long chain alkanes are cracked into more useful short chain alkanes used as fuels, **and alkenes**.
- **Alkenes** are hydrocarbons with a double bond (C=C).
- Alkenes are more reactive than alkanes and react with bromine water. Bromine water changes from orange to colourless in the presence of alkenes.
- Alkenes are used to make polymers and many other useful molecules.

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Year 11
C7 Organic chemistry
Chemistry

Essential knowledge

- Organic chemistry is the chemistry of carbon compounds.
- Carbon atoms form chains and rings linked by C-C bonds.
- Most organic compounds are living, or once-living materials from plants and animals.
- Organic sources include fossil fuels which are also feedstock for the petrochemical industry.
- Chemists modify organic feedstock to make new and useful materials such as polymers, pharmaceuticals, perfumes and flavourings, dyes and detergents.

Key Vocabulary

1. What is crude oil a mixture of?
2. What is a hydrocarbon?
3. What is fractional distillation?
4. What does viscosity describe?
5. What does finite mean?

Prior learning links

1. Changes of state are **reversible** or **permanent?**
2. What happens when a substance boils?
3. What happens when a substance condenses?
4. Condensing happens as a substance **cools** or **heats** and reaches its boiling point?
5. What is a mixture?
6. What is a compound?
7. What useful chemicals can chemists make from organic compounds, by carrying out chemical reactions?

Carbon compounds as fuels and feedstock

1. Why will crude oil eventually run out?
2. What is crude oil made from?
3. Crude oil is a mixture of which type of compounds
4. What are Hydrocarbons made of?
5. What is the general formula for alkanes?
6. What are the first 4 alkanes called?
7. What is the formula for Butane?
8. Have a go at drawing the displayed formula for propane

Fractional distillation and petrochemicals

1. During fractional distillation, what happens to most of the hydrocarbons when crude oil is heated?
2. What change of state happens as the hydrocarbons rise up the tower?
3. Explain your answer to Q2.
4. What does each fraction contain?
5. What are most of the small fractions used for?
6. Which fraction has the longest hydrocarbon chains **diesel** or **petrol**?

Properties of Hydrocarbons

1. Which has the highest boiling point, a **long** or a **short** alkane?
2. Which has the lowest boiling point **ethane** or **butane?**
3. As hydrocarbons get longer, what happens to the viscosity?
4. Which hydrocarbons have the highest flammability, **short** or **long**?
5. Which alkanes are best as fuels, **short** or **long**?
6. What are the products of complete combustion of hydrocarbons?

Cracking & properties of alkenes:

1. What are the conditions needed for catalytic cracking?
2. What are the conditions needed for steam cracking?
3. What are the products of cracking long chain hydrocarbons?
4. What feature do all alkenes have that alkanes do not have?
5. Which are more reactive: **alkanes** or **alkenes?**
6. What chemical can be used to test for alkenes?
7. What colour change will be seen?

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Year 11
Waves
Physics

Essential knowledge

- Wave behaviour is common in both natural and man-made systems.
- Waves carry energy from one place to another
- Designing comfortable and safe structures such as bridges, houses and music performance halls requires an understanding of mechanical waves.
- Modern technologies such as imaging and communication systems show how we use EM waves

Key Vocabulary

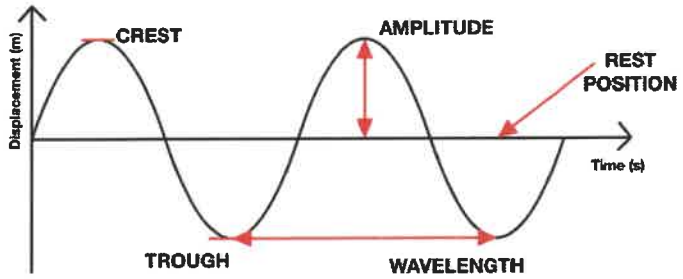
- Amplitude
- Frequency
- Wavelength
- Transverse wave
- Longitudinal wave
- Reflection
- Refraction
- Seismic wave

Prior learning links

- Waves on water as undulations which travel through water with transverse motion
- Frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound
- Sound needs a medium to travel, the speed of sound in air, in water, in solids
- Sound waves are longitudinal and the auditory range of humans and animals.
- The similarities and differences between light waves and waves in matter
- The transmission of light through materials: absorption, diffuse scattering & specular reflection
- Ray model to explain images in mirrors. Colours & different frequencies of light, white light and prisms
- The structure of the human eye

Waves

- All waves transfer energy
- Waves can be longitudinal or transverse
- Ripples on the surface of water and electromagnetic (EM) waves are examples of transverse waves
- Sound is an example of a longitudinal wave
- In transverse, the oscillations are perpendicular to the direction to energy transfer
- In longitudinal, the oscillations are parallel to the direction of energy transfer



- Amplitude is the maximum displacement from the undisturbed position
- Wavelength is the distance from one point on a wave to the same point on the next wave
- The wave speed is the speed at which energy is transferred through a medium

period, T, in seconds, s
frequency, f, in hertz, Hz

$$period = \frac{1}{frequency}$$

- Soundwaves travel through solids via vibrations
- The human hearing range is 20Hz to 20 000Hz
- P & S Seismic waves are produced by earthquakes
- All bodies emit and absorb infrared radiation

Key equations in waves

$$wave\ speed = frequency \times wavelength$$

$[\ v = f\lambda\ ]$

wave speed, v, in metres per second, m/s
frequency, f, in hertz, Hz
wavelength, λ, in metres, m

Electromagnetic waves

Long wavelength → Short wavelength

Radio waves	Microwaves	Infrared	Visible light	Ultraviolet	X-rays	Gamma rays

Low frequency → High frequency

- All EM waves travel at the same speed in a vacuum
- UV, X-Ray and Gamma rays can harmful effects on the body as they are ionising.

Uses of EM waves include:

- radio waves – television and radio
- microwaves – satellite communications, cooking food
- infrared – electrical heaters, cooking food, infrared cameras
- visible light – fibre optic communications
- ultraviolet – energy efficient lamps, sun tanning
- X-rays and gamma rays – medical imaging and treatments.

Light and lenses

- Light waves can be reflected from smooth, specular surfaces.
- Light can be refracted when it travels through more or less dense medium
- Images can be formed by convex and concave lenses

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Year 11
Waves
Physics

Essential knowledge

- Wave behaviour is common in both natural and man-made systems.
- Waves carry energy from one place to another
- Designing comfortable and safe structures such as bridges, houses and music performance halls requires an understanding of mechanical waves.
- Modern technologies such as imaging and communication systems show how we use EM waves

Key Vocabulary

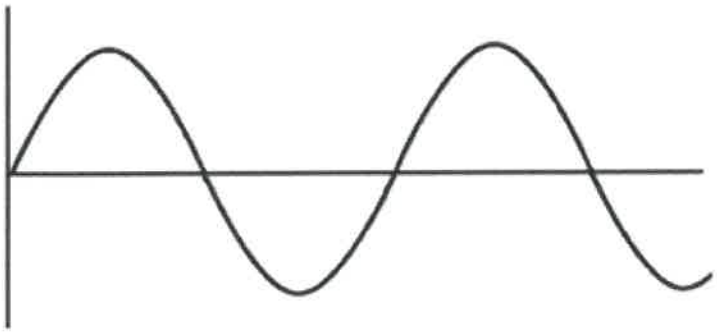
1. The distance away from the undisturbed position is?
2. Convert 20kHz to Hz
3. What is wavelength measured in?
4. What type of waves are EM?
5. What type of wave is a soundwave?

Prior learning links

1. What type of waves are water waves?
2. What is the unit for frequency?
3. What does sound need to travel – why?
4. Are soundwaves transverse or longitudinal?
5. Describe the difference between absorption, reflection and transmission
6. When white light is split, what do we call the range of colours produced?

Waves

1. What do waves carry?
2. What are the two types of wave?
3. Give two examples of transverse waves
4. Give an example of a longitudinal wave
5. Describe the oscillations and energy in a transverse wave
6. Describe the oscillations and energy in a longitudinal wave



1. Label the diagram above with wavelength and amplitude
2. What is wavelength?
3. What is wave speed?
4. What do soundwaves need to travel?
5. What is the human hearing range?
6. What waves are produced by earthquakes?
7. What do all bodies do?

Key equations in waves

1. A wave has frequency of 50 Hz and a wavelength of 10 m. What is the speed of the wave?

Electromagnetic waves

1. What speed to EM waves travel at in a vacuum?
2. Why are UV, X-Ray and Gamma rays harmful?
3. What are the uses of EM waves:

Radio waves
Microwaves
Infrared
Visible light
Ultra violet (U.V.)
X-rays and gamma rays

Light and lenses

1. When light hits a smooth surface, what does it do?
2. What does light do when it passes through more or less dense mediums?
3. What are the two types of lenses?


EBACC

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Year 11 Geography Term 1b
Rio - Introduction and opportunities

Essential knowledge

How important is Rio?

Why has Rio grown?

What is Rio like?

What opportunities has urban growth created?

Key vocabulary

Rural to urban migration - The movement of people from the countryside (rural areas) into towns and cities (urban areas)

Push factors - Factors which encourage people to move **away** from a place.

Pull factors - Factors (often perceived) which encourage to move people **to** a place.

Prior learning links

7.5 Investigating settlements - Location of cities and the importance of the location of some cities.
9.2 Opportunities and challenges - How resources are used and the issues surrounding lack of resources.
9.4 Exploring India - Push and pull factors, why people move to megacities. Exploring squatter settlements.

How important is Rio?

Regionally - 11 public universities, 6 hospitals, many schools, opportunities for employment, access to cultural, leisure and recreational facilities e.g. 50 museums.

Nationally - Service industries such as banking, finance and insurance, manufacturing of chemicals, pharmaceuticals and clothing, industries produce 5% of Brazil's GDP.

Internationally - Annual Carnival, 2014 World Cup matches and 2016 Olympics host city, port exports coffee, sugar and iron ore, Christ the redeemer statue - one of the 'Seven New Wonders of the World'.

Why has Rio grown?

The rapid urbanisation has been caused by **migration** and **natural increase.**
Rural - urban migration - From other parts of Brazil such as the Amazon basin for jobs in the tourist, commercial and administrative sectors.
International migration - From Argentina and Bolivia (neighbouring countries) to find work from Portugal due to the colonial links and shared language, skilled workers from the USA and the UK for jobs in industry.
Natural increase - Accounts for 35% of urban growth, youthful population means lower death rates and higher birth rates which results in a higher rate of natural increase.

What is Rio like?

Rio de Janeiro has a population of 6.4 million in the city and a further 12.5 million living in the surrounding area. It is situated on the **Atlantic coast of Brazil** (an NEE). It was Brazil's capital until 1960 when Brasilia became the capital but remains the most important city in terms of **culture**. It has grown up around a large natural bay called Guanabara bay. It has five ports and three airports.

What opportunities has urban growth created?

Healthcare provisions (health care centres and hospitals) is significantly better than in rural areas. Vulnerable people such as children and the elderly have better access to emergency care and vaccinations in Rio.

There are many primary and secondary **schools** in Rio which have enabled 95% of children aged 10 and above in the city to be literate. This is considerably higher than the national average. The city also has several universities providing higher education opportunities.

Access to clean water has increased since the city hosted the 2014 World Cup and the 2016 Olympics. Over 90% of the population of Rio have access to mains water supply.

100% of the population have access to **electricity** although there are frequent power cuts, but the energy supply is more reliable than in rural areas. In poorer areas, some residents tap into the power supply illegally.

The largest steelworks in South America is located in Rio. It provides jobs. It has also attracted other industries to be built nearby to take advantage of the infrastructure and skills . This has encouraged further economic growth as it provides more job opportunities.

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Year 11 Geography Term 1b
Rio - Introduction and opportunities

Prior learning links

1. What is a megacity?
2. Name three megacities?
3. Name a renewable source of energy.
4. Name one historical reason for uneven development.
5. What is a squatter settlement?

Key vocabulary

1. What is rural to urban migration?
2. What is a push factor?
3. What is a pull factor?

1. Why is the natural increase in Rio so high?
2. Why do people move from other parts of Brazil to Rio?
3. Why do people migrate from other countries to Rio?
4. Where is Rio situated?
5. Where is Rio located?
6. What is the population of Rio?
7. What is the multiplier effect?
8. What is Rio renowned for?
9. Name the four areas of social opportunity created by economic growth in Rio.
10. Name the bay Brazil has grown up around.
11. Is Brazil a Low Income Country or Newly Emerging Economy?
12. How many ports and airports does Rio have?
13. How much of Rio's growth is due to natural increase?
14. Identify the three factors which have caused rapid population growth in Rio.
15. Identify three ways in which Rio is important internationally.
16. Identify three ways in which Rio is important nationally.
17. Identify three ways in which Rio is important regionally.
18. Describe how important the city of Rio is.
19. Describe the opportunities offered in terms of education in Rio.
20. Describe the opportunities offered in terms of energy supply in Rio.
21. Describe the opportunities offered in terms of health care in Rio.
22. Describe the opportunities offered in terms of water supply in Rio.
23. Explain how industrial development in an area can stimulate further economic growth.
24. Explain how migration has been responsible for the growth in Rio's population.
25. 'Urban growth has created many opportunities for the people of Rio' – Give your opinion and justify it.

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Year 10 Geography Term 2b
Component 1

Essential knowledge

Different types of tourism

Different types of visitor

Different types of destination

Reasons to travel

Key vocabulary

Domestic Tourism = When visitors and tourists take holidays within their own country.
Outbound Tourism = When visitors and tourists travel to a different country from their own country for a holiday.
Inbound Tourism = When visitors and tourists from overseas travel into a different county
Leisure travel - When travelling for leisure people are often taking a holiday, or day trip, or travelling to visit a friend or relative.
Business travel - Travelling to a location or venue for work purposes, for example a meeting, conference or training event.

Prior learning links

Component 1 - Understanding the different components of travel and tourism.
Names of the different components and their meaning
How different organisations work together and the benefits of working together

Types of travel and tourism components

Types of tourism

Domestic Tourism = When visitors and tourists take holidays within their own country.

Outbound Tourism = When visitors and tourists travel to a different country from their own country for a holiday.

Inbound Tourism = When visitors and tourists from overseas travel into a different county

Types of visitor

- Individuals
- Couples
- Families
- Groups
- Domestic visitors
- Inbound visitors
- Customers with specific needs

Types of destination

Coastal areas - Seaside resorts, sandy beaches, steep cliffs. Very attractive destinations for many visitors who want to relax, walk, surf, fresh air and fun.

Reasons for travel

- Day trips
- Holidays
- Visiting friends and relatives
- Meetings
- Conferences
- Events
- Short breaks

Leisure travel - When travelling for leisure people are often taking a holiday, or day trip, or travelling to visit a friend or relative.

Business travel - Travelling to a location or venue for work purposes, for example a meeting, conference or training event.

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Year 10 Geography Term 2b
Component 1

Prior learning links

1. Name the seven different components of travel and tourism
2. Name two types of accommodation provider
3. Name two types of transportation
4. Name two different types of ancillary services

Key vocabulary

1. What is domestic tourism?
2. What is outbound tourism?
3. What is inbound tourism?
4. What is leisure travel?
5. What is business travel?

Types of travel and tourism components

1. Name the three types of tourism?
2. Give an example of domestic tourism
3. Give an example of outbound tourism
4. Give an example of inbound tourism
5. Name the different types of visitors
6. Which type of visitor is most likely to be arriving from abroad?
7. Which type of visitor is most likely to be domestic?
8. Name different types of tourist destination
9. Eating out would be which type of destination?
10. National parks would be which type of destination?
11. Sandy beaches would be which type of destination?
12. Mountains would be which type of destination?
13. Name the different reasons for travel.
14. If people are visiting friends and family which type of travel would this be?
15. If people are attending a meeting which type of travel would this be?
16. If people are attending a training course which type of travel would this be?
17. If people are on a day trip which type of travel would this be?
18. Research a coastal destination that is popular in the UK.
19. Research a coastal destination that is popular in Europe.
20. Research where tourists can go on a leisure trip.
21. Research where tourists can go on a business trip.

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Conflict and tension
1920s v 1930s

Essential knowledge
The contribution of the League to peace in the 1920s, including the successes and failures of the League, such as the Aaland Islands, Upper Silesia, Vilna, Corfu and Bulgaria.
Diplomacy outside the League: Locarno treaties and the Kellogg-Briand Pact.
The collapse of the League: the effects of the Depression; the Manchurian and Abyssinian crises and their consequences; the failure of the League to avert war in 1939.

Key vocabulary
Assembly, unanimous, veto, Secretariat, civil service, Council, Geneva, collective security, Permanent Court of International Justice, Covenant, mitigation, moral condemnation, economic sanctions, plebiscite, border

Prior learning links
The structure of the League, its aims and membership.
Strengths and weaknesses and how it could deal with situations and disputes.
The actions of the League to improve living and working conditions.

1920's

1920 Vilna - capital city of Lithuania. The majority of people were Polish and a Polish army took control. Lithuania asked the League for help and they told Poland to leave. They refused and kept Vilna

1921 Upper Silesia - on the border of Germany and Poland. Both countries wanted it for its iron and steel. A plebiscite was held and 60% voted for Germany. However the rural areas were given to Germany and Poland the industrial areas. Neither side was happy but had to accept it.

1921 Åland Islands - Both Sweden and Finland claimed the islands and were threatening war. The League investigated and gave it to Finland but no forts were allowed. Sweden agreed.

1923 Corfu - An Italian surveyor Tellini and his team were murdered on the border between Greece and Albania. Mussolini blamed Greece, demanded compensation and invaded Corfu. The League made Greece apologise and pay Italy compensation.

1925 Bulgaria - Greek soldiers were killed on the Bulgarian border. Greece invaded but the League condemned them, made them withdraw and pay compensation to Bulgaria.

1929 Wall Street Crash - The American Stock Market crashed. The US had lent money to many countries around the world and wanted the money back. This led to a global depression.

1930's Manchuria

Japan was suffering the effects of the depression, much of its trade had been in luxury goods. So it looked to Manchuria in China, that had natural resources. The army generals dominated the Japanese government and wanted land. On 18th September 1931 the was an explosion on the South Manchurian Railway, owned by Japan. They blamed China and invaded Manchuria which they renamed Manchuko in 1932. China went to the League and Lord Lytton was sent to investigate and write a report. The report was published in October 1932 and said Japan should not have invaded. Japan ignored the report, left the League and then continued their invasion of China. By 1938 most major Chinese cities were controlled by Japan's army.

FAIL

1930's Abyssinia

Mussolini wanted an empire in the sun for Italy and they had previously tried to invade Abyssinia unsuccessfully in 1896. After signing the Stresa Front with Britain and France he did not think they would stand in his way. In December 1934 Italian and Abyssinian troops clashed at Wal Wal. Emperor Haile Selassie addressed the League on 30th June 1935 asking for help. Despite moral condemnation from the League Italian troops entered Abyssinia on 3rd October 1935 using the latest weapons including chemical. In December the British and French Foreign Ministers secretly agreed to give half of Abyssinia to Italy. This was leaked to the press with both men resigning. Still the League failed to act and did nothing when on 5th May 1936 Italian troops took the capital Addis Ababa. They could have stopped Italy using the Suez Canal or impose trade sanctions on oil, steel, iron and coal but it did nothing.

FAIL

Key dates

Washington Treaty 1921 - 1922 Japan, USA, Britain Limited size of Japanese Navy to USA and Britain 5 boats for every 3 Japan had. made the League look weak and unnecessary.

Treaty of Rapallo 1922 Germany and USSR Agreed to stay friends and secretly agreed to trade weapons and military information. Against Treaty of Versailles and very damaging for the League.

Locarno Treaty 1925 France, Britain, Belgium, Italy and Germany. Germany, France and Belgium agreed to keep to the borders set in the Treaty of Versailles. Germany was now a member and the League stronger.

Kellogg-Briand Pact 1928 65 countries agreed not to use war to solve disputes. Looked promising but made the League look weak as it was not set up by them.

IN UNITY WE SUCCEED

Conflict and tension

1920s v 1930s

Prior learning links

1. What were the 4 aims of the League?
2. What were the five sections of the League?
3. What were the strengths of the League?
4. What were the weaknesses of the League?
5. How did the League deal with disputes?
6. What were the special commissions?
7. What did the commissions try to improve or deal with?

Key vocabulary

Look up these words and write definitions

Unanimous
Plebiscite
Collective security
Covenant
Mitigation
Moral condemnation
Sanctions
Veto

1920's

What happened in each event?
Was it a success or failure?

1920 Vilna -

1921 Upper Silesia -

1921 Åland Islands -

1923 Corfu -

1925 Bulgaria -

1929 Wall Street Crash -

1930's Manchuria

1. How was Japan suffering the effects of the depression?
2. Why did Japan look to Manchuria?
3. What happened on 18th September 1931?
4. How did Japan use this event?
5. What did the League do about the situation?
6. What did the report say?
7. What did Japan do?
8. Was this a success or a failure for the League?

1930's Abyssinia

1. What did Mussolini want for Italy?
2. What had happened in 1896?
3. Who signed the Stresa Front?
4. What happened in December 1934?
5. What did Emperor Haile Selassie do in response?
6. What was Italy's response to moral condemnation?
7. What was the role of foreign ministers Hoare and Laval?
8. What did the League do in the end?
9. What did Italy do in the end?
10. Was this a success or a failure for the League?

Key dates

1. When was the Washington Treaty?
2. Which three countries signed the Washington Treaty?
3. What were the key terms of the Washington Treaty?
4. Who signed the Treaty of Rapallo and when?
5. What was agreed?
6. Why was Rapallo a issue for the League?
7. When was the Locarno Treaty?
8. Who signed Locarno?
9. What was agreed at Locarno?
10. How did Locarno affect Germany?
11. Did Locarno strengthen or weaken the League?
12. Which Pact was signed in 1928?
13. How many countries signed it?
14. What did this Pact agree?
15. What was the impact of this Pact on the League?

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Conflict and tension
The causes of WW2

Essential knowledge
The development of tension: Hitler's aims and Allied reactions; the Dollfuss Affair; the Saar; German rearmament, including conscription; the Stresa Front; Anglo-German Naval Agreement.
Escalation of tension: remilitarisation of the Rhineland; Mussolini, the Axis and the Anti-Comintern Pact; Anschluss; reasons for and against the policy of appeasement; the Sudeten Crisis and Munich; the ending of appeasement.
The outbreak of war: the occupation of Czechoslovakia; the role of the USSR and the Nazi-Soviet Pact; the invasion of Poland and outbreak of war, September 1939; responsibility for the outbreak of war, including that of key individuals: Hitler, Stalin and Chamberlain.

Key vocabulary
Communism, Mein Kampf, Lebensraum, Treaty of Versailles, Manchuria, Abyssinia, Depression, aggressors, economic sanctions, international cooperation, appeasement, Nazi-Soviet Pact, Anschluss, dictators, extremist.

Prior learning links
The structure and organisation of the League of Nations.
The actions of the League of Nations in the 1920s and 1930s.
The legacy of WW1 and the Treaty of Versailles.

Treaty of Versailles
By the 1930's many people believed that Germany had been treated too harshly including Britain. As a result they didn't stop the Anschluss. Germany had lost land to create new countries like Poland (also the USSR who wanted the land back) and Czechoslovakia. Hitler has promised to overturn the Treaty of Versailles and reunite all German speaking peoples in a greater Germany.

Hitler was to blame
In Mein Kampf Hitler vowed to overturn Versailles and take Lebensraum (living space). This was the basis of his foreign policy and meant he would have to invade countries. This could start a war. He also vowed to make Germany strong again. Hitler hated Communism and wanted to stop it by invading Russia which would start a war.

The failure of the League
Its structure and organisation made the League weak. Its lack of army meant it could not force nations to comply. Membership - countries could leave, the USA never joined and USSR and Germany were not allowed to join at first. Manchuria showed that the League was weak and would not deal with a member of the council. Abyssinia showed Britain and France undermine it.

The Depression
The Wall Street Crash and subsequent depression made countries around the world look inwards and desperate to sort their own problems. This meant there was less international cooperation. Desperate people turned to extremist parties and Leaders including Hitler and Mussolini. The League also could not afford to put effective economic sanctions on aggressors.

Appeasement
The policy of appeasement aimed to prevent another war by giving Hitler what he wanted and is linked particularly with Chamberlain. Many believe he made a mistake by trusting Hitler and that Britain and France could have stopped Germany. Opportunities such as the Rhineland were missed and Chamberlain even worked with Hitler in Munich to give him the Sudetenland. This prompted the Nazi Soviet Pact.

The Nazi Soviet Pact
Stalin felt alienated by the Munich Agreement and this encouraged him to sign the pact even though he and Hitler hated each other. It was a truce to agree to share Poland. This would help Hitler avoid a war on two fronts and give him back up from the USSR. This made him more confident about invading Poland even though Britain and France had promised to protect them.

Key dates
- 1933 - Hitler leaves League of Nations disarmament conference
- 1935 - Rearmament Rally
- 7/3/1936 - Remilitarisation of the Rhineland
- October 1936 - Rome-Berlin Axis
- 12/3/1938 - Anschluss with Austria
- Sept 1938 - Munich Agreement
- 15/3/1939 - Hitler invades Czechoslovakia
- 23/8/1938 - Nazi Soviet Pact
- 1/9/1939 - Germany invaded Poland
- 3/9/1939 - Britain declares war on Germany

IN UNITY WE SUCCEED

Conflict and tension

The causes of WW2

Prior learning links

1. What were the 4 aims of the League?
2. What were the five sections of the League?
3. What were the strengths of the League?
4. What were the weaknesses of the League?
5. How did the League deal with disputes?
6. What were the special commissions?
7. What did the commissions try to improve or deal with?

Key vocabulary Look up these words and write definitions

Unanimous
Plebiscite
Collective security
Covenant
Mitigation
Moral condemnation
Sanctions
Veto

Treaty of Versailles

1. What were people's opinions on the Treaty by the 1930s?
2. What didn't countries stop?
3. Which countries had Germany lost land to?
4. What did Hitler promise to do?

Hitler was to blame

1. What was the name of Hitler's book?
2. What did Hitler vow he would do in his book?
3. What did his foreign policy mean he would have to do?
4. What did he vow to do?
5. What as his opinion on communism?

The failure of the League

1. Why was the League weak?
2. Why could it not force nations to comply?
3. Why was membership a weakness?
4. Why did Manchuria show that the League was weak?
5. In which incident did Britain and France undermine the League?

The Depression

1. What caused the worldwide depression?
2. How did this change the attitude of countries?
3. What type of political parties did people turn to?
4. What could the League not afford to do?

Appeasement

1. What was the policy of appeasement?
2. Which politician is appeasement linked to?
3. Which countries could have stopped Hitler?
4. Which land was Hitler allowed to have?
5. What pact was a response to appeasement?

The Nazi Soviet Pact

1. How did Stalin feel about the Munich Agreement?
2. What was the Nazi Soviet Pact?
3. How did Hitler and Stalin feel about each other?
4. Why was this pact good for Germany?
5. What did this pact give the USSR?
6. Who had Britain and France promised to protect?

Key dates

- Hitler leaves League of Nations

1935 -

Rally

7/3/1936 -

of the Rhineland

October 1936 - Axis

12/3/1938 -

Agreement

15/3/1939 - Hitler invades

23/8/1938 - Nazi Soviet Pact

Germany invaded Poland

3/9/1939 -


CREATIVE

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Year 11 Art, Half Term 2
Artist Research

Essential Knowledge:

- Understand how to conduct artist research.
- Understand how to analyse an artists method and process.
- Understand how to use artist research to inform your own work.

Links to Prior Learning:

- Selecting important and relevant information for artist research.
- Presenting artist research pages.
- Assessment objectives

Key Vocabulary:

- **Artist research:** the process of investigating an artist to inform your own work.
- **Analysis:** the process of looking at an artist's work to find out how and why it was created.
- **Formal elements:** this refers to key components of an image, e.g. tline, shape, space, form, texture, colour, pattern
- **Process:** refers to how a piece of artwork (or set of artworks) was created
- **Relevant:** closely connected or appropriate to what is being done or considered.

Biography (general information

Artist research should include the following relevant information: when were they born? When did they die? Where did they live? Any other key information you feel is important to explain the artist or designer

Useful Vocabulary

Hot, cold, bright, dull, vivid, sombre, pastel, clashing, matching, range, variety, rough, smooth, foreground, background, design, strong lines, shapes, small, large.

Analysis of a piece of the artist's work

All artist research must include a discussion of several pieces of the artist's work. Each discussion should include questions along the lines of: what is the work about? When was it produced? What was the artist inspired by? What do you think the artist is trying to say?

Formal Elements

When describing a piece of artwork: describe how the artist has used light, line, tone, colour, pattern, shape, focus and point of view to create the work. E.g. How has the artist used point of view? What is the key focus? How has lighting been used? What kind of shapes/elements have been used? What materiel or techniques have been used?

Useful starters

- I think the artist has used … well because …
- I think the way in which the artist has used … within their work is interesting because …
- I think the colour scheme used is effective because …
- The layout is interesting because …

Process refers to how an image (or set of images) was created.

- How was the artwork created?
- How did the artist use the space? Is the space filled or has the artist left spaced intentionally?

Your own response

In any creative project during your GCSE 'your own response' is the work you produce, **informed by**, the artist you have researched.

For example, here is an image inspired by David Hockney's work on 'joiners': images made up from numerous images of the same subject, 'joined' to make a new whole.

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Year 11 Art, Half Term 2
Artist Research

Questions on Prior Learning:	
Please write the questions out and answer the questions or complete the tasks accordingly.	
1	What materials could be used to create a background ?
2	Which Assessment objective does research and artist research closely link to?
3	What is the relevant information we need to include on an artist research page?
5	How might you decorate an artist research page relevant to the artists style of work?

Use '*Cover-Look-Write-Check*' to check the following Definitions:

- **Artist research:** _____
- **Analysis:** _____
- **Formal Elements** _____
- **Process** _____
- **Relevant** _____

Formal elements

Use the 'useful starters' and 'useful vocabulary' on the previous page to write a summary of the formal elements utilised in the artworks below.

Analysis of a piece of the artist's work

1. Use the following link to find an artist that relates to your shocen theme? https://theartteacher.net/artists-listed-by-themes/
2. How might you decorate a an artist research page fso it is relevant to your chosen artist?
3. Chose one piece of work by your chosen artist and white an analysis of that art piece.
4. Complete a personal response of that artist on A4 paper.
5. Using a photograph of your own, create a piece of art inspired by that artists style and technique.

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Year 11 Textiles - Steampunk Artist Cyrus Kabiru

Essential Knowledge

How the range of samples and techniques modelled can be put together to create a three dimensional personal response to the theme of Steampunk.

Prior learning links

Students have researched the theme of Steampunk.

Students have created a range of samples that explore the theme of Steampunk.

Cyrus Kabiru

An artist who sculpts artistic eyewear from found objects and recycled materials.

Born in 1984 in Eastlands Nairobi, Cyrus Kabiru was one of six children living in a two-bedroom home opposite a refuse dump. Inspired by this view from his window, and a story his father told about how he accidentally broke his own glasses as a boy, he started making eyewear out of discarded cutlery and bottle tops. He was disinterested in school and got his friends to do his homework in exchange for specs. His father wanted him to study electronic engineering at university but he insisted on pursuing life as a self-taught artist instead.

Key Vocabulary

Personal response - create a piece of artwork that has meaning to the person making it.

Found Object - any object that has been picked up, this could be viewed as a piece of rubbish by one person but treasure/useful to someone else.

Sculpture - a three dimensional piece of artwork.

Steampunk recap:

- *It is modern technology—powered by steam and set in the 1800's*
- A genre of science fiction that has a historical setting and typically features steam-powered machinery rather than advanced technology.
- A style of design and fashion that combines historical elements with technological features inspired by science fiction.

Cyrus Kabiru's work connects to the theme of **steampunk** through several key elements:

1. **Use of Found Materials**: Steampunk often involves repurposing old, discarded items, especially mechanical or industrial objects and turning them into something new and imaginative. Kabiru's glasses, made from scrap metal, bottle caps, and other found objects, echo this approach.
2. **Handcrafted, Mechanical Look**: Steampunk is known for its emphasis on mechanical-looking designs, influenced by Victorian-era machinery. Kabiru's eyewear creations often feature complex, industrial-looking designs that resemble goggles or futuristic machines, aligning with steampunk's love for gears, cogs, and mechanical details.
3. **Fusion of Old and New**: Steampunk blends old, historical elements with futuristic ideas, much like Kabiru combines "old Kenyan trash" with modern, sometimes European, materials. His work brings together different eras and cultures, similar to how steampunk merges the past with the future.

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Year 10 Textiles - Texture Project
Decorative Techniques

Prior Learning

Students have worked through a range of decorative techniques and process and are now creating a personal response to the theme of Steampunk.

Key Vocabulary

Cover, look, write, check the definitions of the following:

Personal response -

Found Object -

Sculpture -

Steampunk recap:

1. What are key features of Steampunk?

1. How does the work of Cyrus Kabiru feature elements of Steampunk design?

Cyrus Kabiru

An artist who sculpts artistic eyewear from found objects and recycled materials.

1. How did Kabiru's upbringing in Eastlands, Nairobi, influence his choice of materials for his art?

1. Why did Kabiru often trade his handmade specs for help with his homework?

1. How did Kabiru's father's expectations for him differ from Kabiru's own career goals?

1. In what ways does Kabiru's work reflect elements of **steampunk** culture?

1. How does Kabiru's use of scrap metal and bottle caps connect to the steampunk theme of using found, industrial objects?

1. How do Kabiru's eyewear creations, with their mechanical and industrial look, align with the steampunk aesthetic?

1. Why does Kabiru combine old Kenyan trash with modern materials from other countries in his art?

1. How does Kabiru's fusion of old and new materials reflect steampunk's blending of historical and futuristic ideas?

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Year 11: Graphic Design - Tone

Essential Knowledge
- Understand the definitions of the six components of Graphic Design and be able to apply and experiment with them in their developments using tone.

Key Vocabulary

Tone	Shading
Three dimensional	Hatching
Gradient	Cross hatching
Contrast	Stippling

Tone in Graphic Design

Tone refers to the lightness or the darkness of an object or drawing.
Tone and shading can be used to make a 2D shape look 3D, giving it form.
Changing the tone in an image can give the illusion of distance.
Progressive tone can be used to gradually change from a light tone in the foreground to a dark tone in the background, or a dark tone in the foreground to a light tone in the background.
In real life tone is created by the way light falls on an object.
Tone is not just about creating darker and lighter areas on an object, tone can also be used to:
- Create **gradients** - **Linear (lines)** or **radial (circular)**
- Provide **contrast**
- Create **definition, shape** and **depth**

Tone can be created using a number of processes:
- Hatching
- Cross hatching
- Shading
- Gradient fill
- Stippling

Famous companies using tone in their branding.



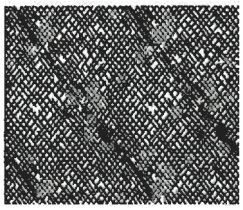
Prior learning links
How to generate and communicate design ideas in Graphics.
How to use existing imagery and typography to create 2D and 3D original ideas.
Typography, Imagery, Colour theory and Composition

The processes of tone are explained in detail with examples below.

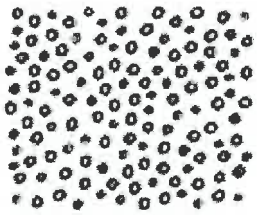
Shading: shading is used to create different tones in a drawing. A range of different techniques can be used to build up tones.

Hatching: Hatching uses line to build tone. The thickness, the number of lines and the distance between them creates the illusion of form.

Cross Hatching: Uses lines that cross at different angles to each other.



Stippling: Dots are used instead of lines to create tone. The size, number and distance between the dots will change the tone that is created.



Gradient fill: A shape fill that gradually changes from one colour to another across the surface of the shape.

In this art work the artist has used tone to make the sphere 3D and realistic. The lighter tones show the reflection of light and the darker tomes show shadow.

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Year 11: Graphic Design - Tone

Key Vocabulary	
Tone	Shading
Three dimensional	Hatching
Gradient	Cross hatching
Contrast	Stippling

Prior learning links
Name three types of colour scheme
Name three colours you would find in a slpit complementary colour scheme.

Tone in Graphic Design

What is Tone in graphic design?

.....
.....
.....
.....

How is tone created in real life?

.....
.....

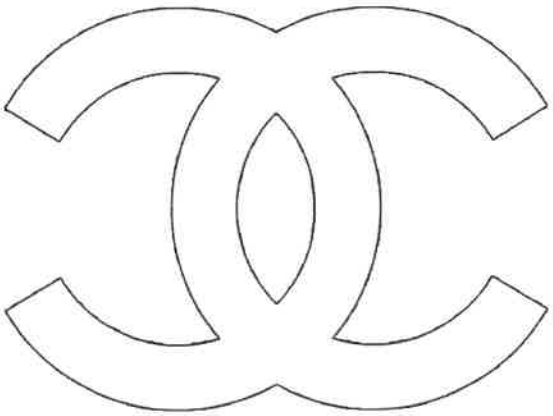
What processes are used to create tone when sketching and painting?

-
-
-
-

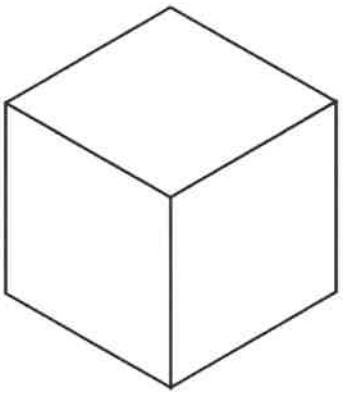
How does Tone help a graphic design work well?

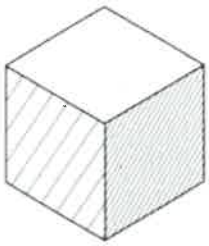
.....
.....
.....
.....

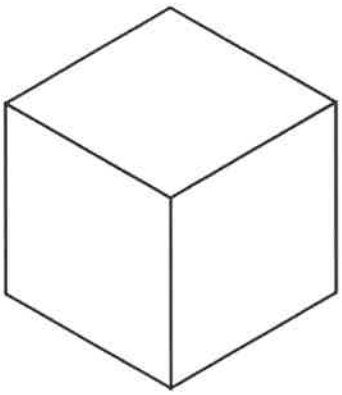
Add tone in the colour of your choice to give the channel logo a 3D effect.

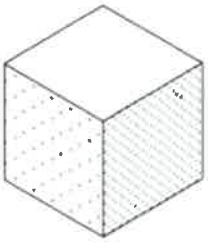


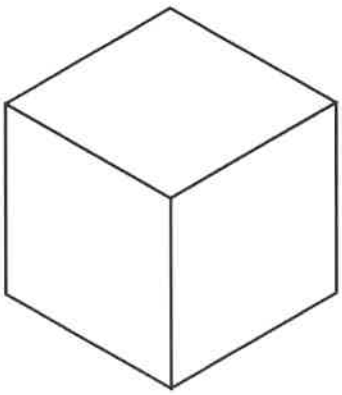
Using a pencil, try to add tone to the blank cubes. Copy the examples.











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Year 11 – Photography
Compositional Elements

Essential knowledge

Understand the components of a composition including: the rule of thirds; symmetry; focal point; simplification; lines; viewpoint (or point of view); colour; abstract; DoF; pattern; texture; and shape.

Key Vocabulary

Composition: is how a photographer arranges the visual elements within their frame.
The **Rule of Thirds** is a compositional guideline that breaks an image down into thirds (both horizontally and vertically).
Viewpoint / Point of view: crucial to photography, this refers to the perspective the photographer takes with respect to the subject.
Focal point: the intended focus of an image – the key component(s).

Prior learning links

Camera Basics – Controlling Exposure (yr 10)

Depth of field

Depth of field (DoF) can isolate a subject from its background and foreground (when using a shallow depth of field) or it can put the same subject in context by revealing it's surrounds with a larger DoF.

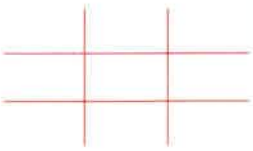
Patterns

There are patterns all around us if we only learn to see them. Emphasizing and highlighting these patterns can lead to striking shots – as can highlighting when patterns are broken.

Example photographer: Jon Measures

Rule of thirds

A 3x3 grid used by photographs to create a composition that feels right. Objects that fall on or near the lines are considered to have the best impact.



Lines

Lines (diagonal, horizontal, vertical, and converging) can be powerful elements in an image. They have the power to draw the eye to key focal points in a shot and to impact the 'feel' of an image greatly.

Example photographer: Bill Brandt

Colour

A lot of colour can be overwhelming and considered a bold statement. Lack of colour can focus the viewer on the message the photographer is trying to convey. Lack of colour can also accentuate the patterns, shapes and textures in a photograph.

Example photographer: Andy Warhol

Abstract

It is taking a subject and forcing the viewer to look at it in a different way. This may cause the subject to lose its original meaning or purpose.
It may even render the subject unreal, abnormal and not of this world. The subject could lose all literal meaning and be reduced to only shape, light, texture or colour.

Example photographer: Paul Strand

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Year 11 – Photography
Compositional Elements

Prior learning links

What have you learnt in art regarding composition? Think about leading lines, colour, texture, pattern, shape, viewpoint, symmetry, and so on.

Think about how depth of field can be used as part of a photographic composition:

- How can blurring a background to create a shallow depth of field be helpful when composing a portrait?
- What type of images benefit from a deeper depth of field where much more of the image is in focus?

Key Vocabulary

Use cover, look, write, check to write the definitions …

Composition:
Rule of Thirds:
Viewpoint / Point of view:
Focal point:

Focal Point

The main focus of a photograph. There is usually a line, shape, or space of some form leading to it.
EG: Michael Bosanko

Simplification

When light, depth of field, and the positioning of an object are used to make the viewer focus on a specific area of the photograph or artwork.

Example photographer: Nicolas Goodden

Symmetry

Can create a balanced composition that leaves the viewer with a feeling the photograph is staged in some way. Can add a striking effect depending on the subject or object photographed.

Example photographer: Irving Penn

Viewpoint or Perspective

Birds-eye: From above facing downward.
Worm's-eye: From below facing upward.
Eye-line: At standing height.

Different perspectives will have an impact on how the viewer perceives and understands a photograph.

Example photographer: Antonio Jaggie

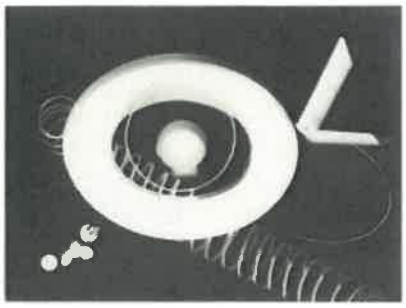
Texture

Photographs of two dimensional objects yet with the clever use of 'texture' they can come alive and become almost three dimensional. You want the viewer to imagine how the object feels.

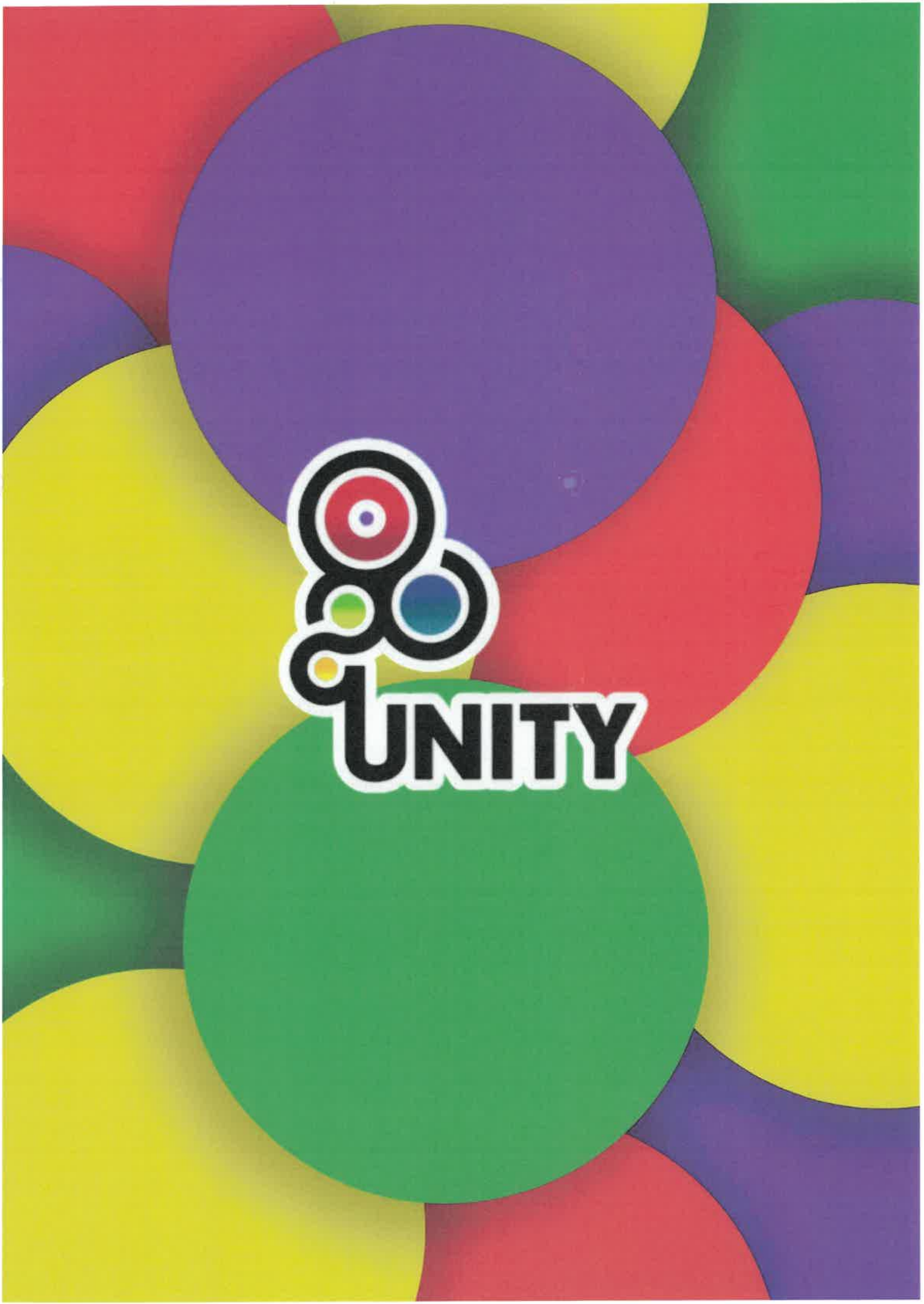
Example photographer: Ansel Adams

Shape

The way subjects connect to each other in a photo forms shapes that draw the eye from subject to subject. If your subject is already triangular or diamond-shaped (like a pyramid), the viewer's eye will automatically focus on that shape.



Example photographer: Man Ray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