



Knowledge Organiser

Year 7

Summer Term 2



Ambition, Respect, Excellence

Your Knowledge Organiser

This is your home learning booklet, in your home learning booklet you will find a Knowledge Organiser for each subject that you are going to study. These are a summary of the most important pieces of information that you need to know. You will be expected to learn all this information and complete activities in your home learning exercise book.

Contents

Contents	2
Knowledge Organiser Timetable	3
How to Use your Knowledge Organiser	4
Knowledge Organiser Quiz	5
Look, Cover, Write, Check, Correct	6-7
Look, Cover, Mind Map, Check, Correct	8-9
Look, Cover, Transform, Check, Correct	10-11
English	12-15
Maths	16-19
Science	20-21
History	22-24
Geography	25-27
Ethics & Culture	28
French	29-30
PSHE	31-32
Music	33
Drama	34-35
Product Design	36
PE	37
ICT	38
Art	39
Catering	40
Graphics	41
Dance	42-43
Extra Challenge Tasks	44

Knowledge Organiser Timetable

We expect you to complete one full page in your workbook as a minimum. You should spend around 20 minutes on home learning for each subject. Your teachers will check your Knowledge Organiser home learning during lessons, so make sure that you bring your books to school everyday. Your writing needs to be neat with home learning, title and date underlined with a ruler at the top of the page. If your teacher feels that any of these elements are not up to standard, they will enter you for a home learning support session. You will be rewarded house points for completion of homework and additional points will be awarded for exceptional home learning pages.

	WEEK A	WEEK B
MONDAY	ENGLISH PE	ENGLISH MUSIC
TUESDAY	ART DESIGN & TECHNOLOGY	FRENCH DESIGN & TECHNOLOGY
WEDNESDAY	MATHS DRAMA	MATHS ONLINE PSHE
THURSDAY	GEOGRAPHY ICT	HISTORY ETHICS & CULTURE
FRIDAY	DANCE SCIENCE	SCIENCE

How To Use Your Knowledge Organiser For Homework

The Knowledge Organisers are designed to help you learn a wide range of knowledge which in turn will mean you are more prepared for your lessons as well as the new style GCSEs that you will sit in the future.

For homework you should use your knowledge organiser to complete one of our accepted strategies in your workbook you should either:

- **Write**
- **Mind Map**
- **Transform**

Do not just copy into your workbook!

The first 12 pages contain some tips on how you can use your workbook.

Your teacher will check your workbook each week.

Knowledge Organiser Quiz

Your teacher will quiz you on your Knowledge Organiser twice a term to check how well you are doing your homework. The 'Mark' box must be used to record your score from each quiz.

	ENGLISH	MATHS	SCIENCE	ART	HISTORY
QUIZ 1					
QUIZ 2					
	FRENCH	ICT	PE	DANCE	GEOGRAPHY
QUIZ 1					
QUIZ 2					
	PHSE	E&C	MUSIC	DESIGN & TECHNOLOGY	
QUIZ 1					
QUIZ 2					

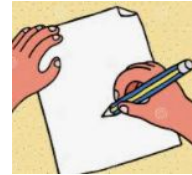
Look, Cover, Write, Check, Correct

Look through and read the information on a section of your Knowledge Organiser.



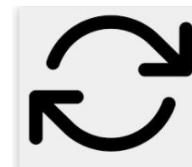
Then **cover** the section so you can no longer see the information.

Write everything you can remember, including any diagrams/drawings or tables



Check and **correct** your work using green pen.

Repeat until you have got everything correct.



Look, Cover, Write, Check, Correct

Examples:

Write down as much information as you can remember from your Knowledge Organiser subject page. Mark all the information you got right and correct any mistakes/add in detail where you missed it.

Remembering Key Information

Reflex arc means a quick response.
Reflex arc mean an involuntary response. ✓

Antibiotics means a medicine that prevent the ^{growth} microorganisms but do not help any viruses. ✓

A platelet helps the clotting and into a scab, making a clot/scab.
cholesterol is a fatty substance is ^{needed} for your body to probably. definitely needed.

A ligament is a that joins a ^{bone} meseta.

purple pen improvent I used the Look, cover, write, check, correct.

The nervous system is inside your body and is in most parts of your body but your B

Homework Support

Science

Drugs are chemical substances that affect the way you work. ✓

They are additional recreational. x medicinal. They can be painkillers, stimulants, hallucinogens and depressants.

Receptors are found in sense organs. ✓

Effectors are muscles or glands and carry out a response. ✓

Blood is made up of plasma (liquid), Red blood cells and white blood cells (carry oxygen) (fight infection).

and platelets.

There are 3 main types of pathogen: fungi, viruses and bacteria. ✓

There are several lines of defence against pathogens - primary defences: skin, stomach acid, nasal hairs. ✓ mucus and Secondary defences: the immune system.

Vein - carries blood to the heart at low pressure. They have thin walls and valves to stop * blood. * backflow of ✓

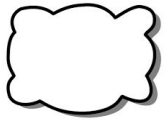
Artery - carries blood FROM the heart at a high pressure. Have thick elastic walls.

Capillary - link arteries and veins. Carry blood to tissues and remove waste.



Look, Cover, Mind Map, Check, Correct

Look through and read the information on a section of your Knowledge Organiser then **cover** it up.



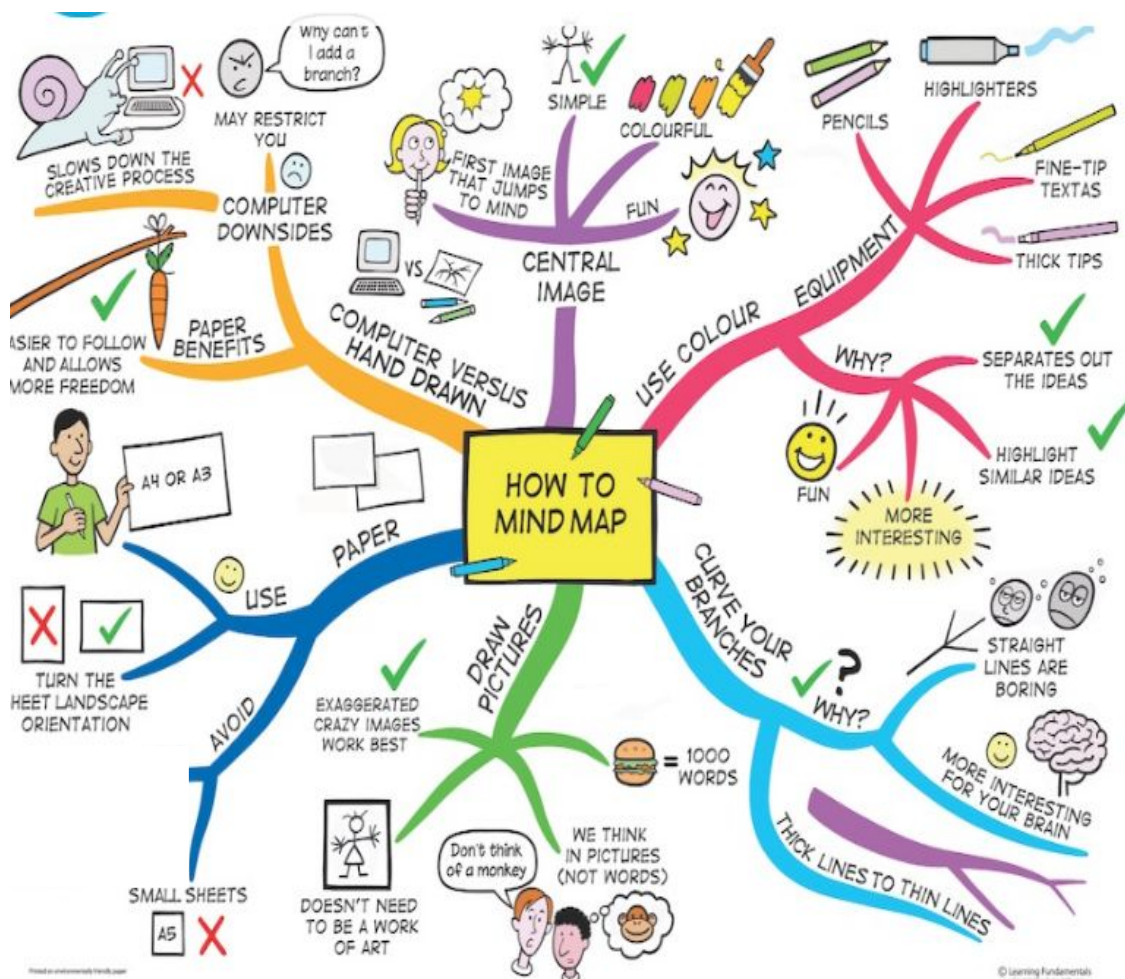
Then come up with a **title** for the section and put a bubble or star around your word

Write everything you can remember, including any diagrams/ drawings or tables.



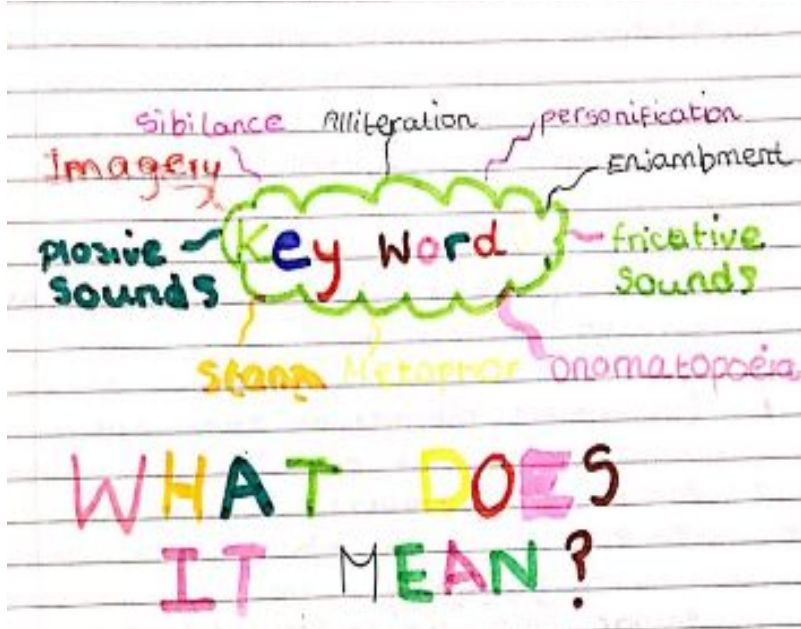
Check and **correct** your work using green pen.

Repeat until you have got everything correct.



Look, Cover, **Mind Map**, Check, Correct

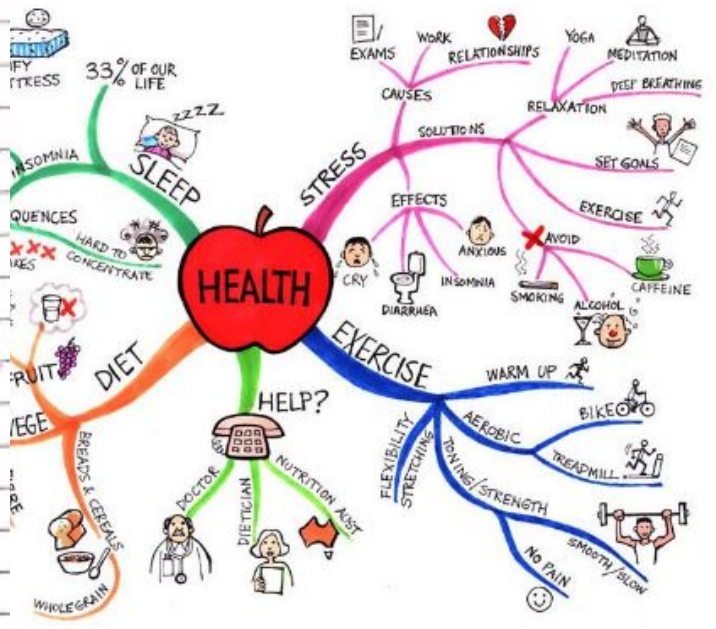
Examples:



WHAT DOES IT MEAN?

Onomatopoeia means a word that sounds like what it is.

Metaphors - means a non literal description for effect



Look, Cover, **Transform** Check, Correct

Look through and read the information on a section of your knowledge organiser then **cover** it up



Then **transform** the section, you can transform the information into one of the below:

- A selection of keywords
- Spellings you have to learn
- Song/poem to help you remember
- Key facts from the sheet
- Transform the descriptions into pictures/comic strip
- Transform it into revision card boxes
- Piece of extended writing based on the information.



Check and **correct** your work using green pen.



Look, Cover, Transform, Check, Correct

Example:

Maths.

Shapes!

Rectangle. = $L \times W$

TRAPEZIUM - $A = \frac{1}{2} \times (a+b) \times H$

Triangle - $\frac{1}{2} \times \text{base} \times \text{vertical height}$
 $A = \frac{1}{2} \times b \times h$

Shape Names!

cylinder	Cube
Cuboid	Cone
pyramid	Sphere
hemisphere	triangular prism
Trapezium	parallelogram

WIKI English

WIKI Geography

3 Facts about Oceans!...

Fact 1 - 70% of the Oxygen we breathe is produced by Marine plants.

Fact 2 - 97% of the Earth's water supply is contained in the ocean.

Fact 3 - 30% of CO_2 emissions produced by humans are absorbed by the oceans.

deserts - Very hot deserts are

poems!

'Blessing' - a free verse poem about poverty and the importance of water.

It focuses on a slum on the outskirts of Mumbai in India and in particular the reaction of children who come to celebrate and drink when a pipe bursts.

Island man - is a short poem that focuses on the cultural of Caribbean man who wakes up in London but is dreaming that he's on a native island. In search for my lounge - the poet explores the internal conflict of she feels about losing her Indian cultural identity.

Half caste - about mixed race and people's identity and people's culture.

Nothing's changed - Talks about the rampant apartheid system in District six near Cape town in South Africa and explores all about racism. The ironic title brings to light how the apartheid has changed nothing but the appearance of District six.

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The Tempest

Plot Summary

Act 1	<p>A fierce storm threatens the lives of all aboard King Alonso's ship. They are shipwrecked on Prospero's island. Miranda begs her father to stop the storm. Prospero tells her the story of why they are on the island: his brother Antonio betrayed them, taking the title Duke of Naples. They had to flee in a rickety boat. Ariel tells Prospero that the ship's inhabitants are all stranded on different parts of the island. He asks to be freed but Prospero refuses. Caliban (Prospero's other slave) claims the island is rightly his but Prospero forces him to comply through magic. On meeting, Miranda and Ferdinand fall instantly in love but Prospero enslaves him.</p>
Act 2	<p>Ariel puts all the ship's passengers to sleep except Antonio and Sebastian who plot to seize King Alonso's crown. Just as they are about to attack the sleeping King, Ariel wakes the party up. Trinculo and Stephano meet Caliban and give him wine. Caliban drunkenly worships Stephano.</p>
Act 3	<p>Ferdinand and Miranda declare their love and agree to marry although Ferdinand is still enslaved by Prospero. Caliban, Trinculo and Stephano plot to kill Prospero with Caliban promising that Stephano can marry Miranda. Ariel hears and reports the plan to Prospero. A banquet appears in front of the royal party but, as they are about to eat, Ariel appears as a harpy and accuses King Alonso, Antonio and Sebastian of being sinners. The three flee in fear.</p>
Act 4	<p>Prospero arranges the marriage of Miranda and Ferdinand but halts the masque as he remembers Caliban's plan. He tells Ariel to tempt the men with garish clothes and sends spirits after them. Prospero promises to free Ariel soon.</p>
Act 5	<p>While Prospero waits for Ariel to bring the royal party to him, he promises to give up magic. The group arrive and Prospero forgives them but states Antonio must give up his claims on Prospero's dukedom. Alonso grieves for the loss of Ferdinand and Prospero reveals he is alive and married to Miranda. Caliban, Trinculo and Sebastian are brought next to Prospero by Ariel and Caliban repents. The royal party are invited to spend the night while Ariel's final duty is to provide calm seas for them to set sail the next morning.</p>

The Tempest

Characters

Prospero: The play's protagonist. He wields power over his enemies through magic and, having been usurped as Duke of Milan, now rules the island.

Miranda: Prospero's daughter. Naïve, compassionate and loyal due to her sheltered life on the island.

Ariel: Prospero's spirit slave. Prospero rescued him from the witch Sycorax (Caliban's mother).

Caliban: Prospero's slave who believes the island rightfully belongs to him. His name is anagram of cannibal.

King Alonso: King of Naples who aided Antonio in usurping Prospero. He learns to regret his actions.

Ferdinand: son and heir of Alonso.

Gonzalo: An old, honest Lord. He helps Prospero & Miranda when Antonio takes over Milan.

Antonio: Prospero's brother. Power-hungry & foolish.

Sebastian: Alonso's brother. Aggressive, cowardly and disloyal (like Antonio).

Stephano: a drunken butler.

Trinculo: a jester.

The Tempest

Tier 2 Vocabulary

1. **Tempestuous:** violent emotions or behaviour.
2. **Blasphemous:** insulting what is sacred.
3. **Insolent:** casual disrespect.
4. **Piteous:** inciting a feeling of pity or sorrow.
5. **Perfidious:** untrustworthy.
6. **Paragon:** a person or thing regarded as a perfect example of a particular quality.
7. **Credulous:** having or showing too great a readiness to believe things.
8. **Prosperous:** bringing wealth and success.
9. **Confined:** being in captivity or a restrictive space.
10. **Abjure:** solemnly renounce (a belief, cause, or claim).

Key Terms

Colonialism: The policy or practice of acquiring full or partial political control over another country, occupying it with settlers, and exploiting it economically

Playwright: The person who writes the play.

Theme: A main idea or an underlying meaning of a play, which may be stated directly or indirectly.

Conflict: A serious disagreement, battle or struggle between two sides or ideas.

Setting: The place a story happens in.

Comedy: a genre of play. It has a happy ending, usually including a marriage. There are no deaths in the play. There is confusion around who characters really are.

Tragedy: A play dealing with tragic events and having an unhappy ending, especially one concerning the downfall of the main character.

Tragicomedy: A play or novel containing/combining elements of both comedy and tragedy.

Couplet: A pair of rhyming verse lines

Blank Verse: Unrhymed verse using iambic Pentameter

Iambic Pentameter: a line of writing that consists of ten syllables in a specific pattern of an unstressed syllable followed by a stressed syllable, or a short syllable followed by a long syllable.

Prose: Form of speech used by common/comedic people in Shakespearean theatre. There is no rhythm or meter in the line.

Dialogue: Conversations between characters.

Soliloquy: A speech in a play that the character speaks to himself or herself or to the audience, rather than to the other characters.

Pathetic Fallacy: Using the setting and weather to reflect characters' feelings.

Effect: The thoughts or feelings that a word creates in the reader.

Context: Information about the text's time period, themes or genre which help us understand the text.

The Tempest

Dramatic Features

Stagecraft: The technical aspects of theatrical production, which include scenic design, stage machinery, lighting, sound, costume design, and makeup.

Costume: The clothes, wigs etc that actors wear.

Entrances / exits: When, where and how characters enter or leave the stage.

Special effects: Lights, sounds, props etc used to create effects on the stage.

Music: Music is often used to create a certain mood in the play.

Audience: The people watching the play, usually in the room with the actors.

Actors: The people performing the play, using their faces, voices and bodies to represent characters.

Script: The written version of the play that actors use in rehearsals.

Stage Directions: Instructions to the actors, usually written in italics, explaining when to enter, how to move, the tone of voice to use etc.

Shakespeare to Modern

Thou/Thee: You

Wherefore: Why

Art: Are

Thy: Your

Haste: Act quickly

Durst: Dare

Doth: Does

Ere: Before

Hast: Have

Hence: From now on

Hie: To hurry/go quickly

Whence: From where

Mine: My

Afeard = afraid / scared

Hath = has

O'er = over

Oft = often

Prate = talk / chat

Additional Challenge Task

How would you stage a performance of *The Tempest*? Describe how you would stage it. You can focus on any aspect you want (costumes, set design etc etc).

You can write an explanation or draw pictures.

Online Maths Work

You can access your online maths support/homework through www.mymaths.co.uk

Maths homework is set on this once a fortnight. You can try the tasks more than once and should aim to continue until you get at least 'amber' in each set homework. Once complete, you need to record your score and your parents should sign to say they have seen the work.

The school login for mymaths is:

School Log-in: whitstonessecondary

Password: fraction280

Students will also be given their own unique login from their Maths teacher. This can be written here so you dont forget it:

Username:

Password:

	Topic Practised	Score	Signed by parent / carer
1			
2			
3			
4			
5			
6			
7			
EXTRA			

Week A Knowledge Organiser

Week B My Maths Teacher Set Task

Developing number sense

@whisto_maths

What do I need to be able to do?

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

- Know and use mental addition/ subtraction
- Know and use mental multiplication/ division
- Know and use mental arithmetic for decimals
- Know and use mental arithmetic for fractions
- Use factors to simplify calculations
- Use estimation to check mental calculations
- Use number facts
- Use algebraic facts

Keywords

Commutative: changing the order of the operations does not change the result

Associative: when you add or multiply you can do so regardless of how the numbers are grouped

Dividend: the number being divided

Divisor: the number we divide by

Expression: a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)

Equation: a mathematical statement that two things are equal

Quotient: the result of a division

Mental methods for addition/ subtraction

Addition is commutative



$$6 + 3 = 3 + 6$$

The order of addition does not change the result

Subtraction the order has to stay the same

$$360 - 147 = 360 - 100 - 40 - 7$$

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction

Mental methods for multiplication/ division

Multiplication is commutative



$$2 \times 4 = 4 \times 2$$

The order of multiplication does not change the result

Partitioning can help multiplication

$$\begin{aligned} 24 \times 6 &= 20 \times 6 + 4 \times 6 \\ &= 120 + 24 \\ &= 144 \end{aligned}$$

Division is not associative

Chunking the division can help $4000 \div 25$
"How many 25's in 100" then how many chunks of that in 4000

Mental methods for decimals

Multiplying by a decimal < 1 will make the original value smaller e.g $0.1 = \div 10$

Methods for multiplication 12×0.03

$$\begin{array}{l} 12 \times 3 = 36 \\ 12 \times 3 = 36 \\ 12 \times 0.3 = 3.6 \\ 12 \times 0.03 = 0.36 \end{array} \quad \begin{array}{l} 12 \times 3 = 36 \\ +10 \downarrow +100 \downarrow +1000 \downarrow \\ 12 \times 0.03 = 0.36 \end{array}$$

Methods for addition $2.3 + 2.4$

$$\begin{array}{l} 2 + 2 = 4 \\ 0.3 + 0.4 = 0.7 \\ 4 + 0.7 = 4.7 \end{array}$$

Methods for division $15 \div 0.05$

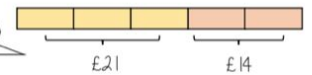
Multiply by powers of 10 until the divisor becomes an integer

$$\begin{array}{l} 1.5 \div 0.05 \\ \times 100 \downarrow \quad \times 100 \downarrow \\ 150 \div 5 = 30 \end{array}$$

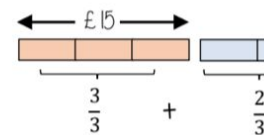
Mental methods for fractions

Use bar models where possible

I've spent $\frac{2}{5}$ of my money I have £21 left



How much did they have to begin with?



What is $\frac{5}{3}$ of £15?

Using factors to simplify calculations

$$30 \times 16$$

$$10 \times 3 \times 4 \times 4$$

$$10 \times 3 \times 2 \times 8$$

$$2 \times 5 \times 3 \times 2 \times 2 \times 2 \times 2$$

$$16 \times 10 \times 3$$

Multiplication is commutative
Factors can be multiplied in any order

Estimation

Estimations are useful – especially when using fractions and decimals to check if your solution is possible

Most estimations round to 1 significant figure

Estimations are useful – especially when using fractions and decimals to check if your solution is possible

$$210 + 899 < 1200$$

This is true because even if both numbers were rounded up, they would reach 300 + 900

The correct estimation would be $200 + 900 = 1100$.

Number facts

Use $124 \times 5 = 620$

For multiplication, each value that is multiplied or divided by powers of 10 needs to happen to the result

$$620 \div 124 = 50$$

For division you must consider the impact of the divisor becoming smaller or bigger.

Smaller – the answer will be bigger (It is being shared into less parts)
Bigger – the answer will be smaller (It is being shared into more parts)

Algebraic facts

$$2a + 2b = 10 \quad \text{Everything} \times 2$$

$$0.1a + 0.1b = 0.5 \quad \text{Everything} \div 10$$

$$a + b = 5$$

Add 2 to the total

$$a + b + 2 = 7$$

The unknown quantity isn't changing but the variables change what is done to give the result

Week A Knowledge Organiser

Week B My Maths Teacher Set Task

Sets and probability

@whisto_maths

What do I need to be able to do?

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

- Identify and represent sets
- Interpret and create Venn diagrams
- Understand and use the intersection of sets
- Understand and use the union of sets
- Generate sample spaces for single events
- Calculate the probability of a single event
- Understand and use the probability scale

Keywords

- Set:** collection of things
- Element:** each item in a set is called an element
- Intersection:** the overlapping part of a Venn diagram (AND \cap)
- Union:** two ellipses that join (OR \cup)
- Mutually Exclusive:** events that do not occur at the same time
- Probability:** likelihood of an event happening
- Bias:** a built-in error that makes all values wrong (unequal) by a certain amount, e.g. a weighted dice
- Fair:** there is zero bias, and all outcomes have an equal likelihood
- Random:** something happens by chance and is unable to be predicted

Identify and represent sets

The **universal set** has this symbol ξ – this means **EVERYTHING** in the Venn diagram is in this set

A set is a collection of things – you write sets inside curly brackets { }

$\xi = \{\text{the numbers between 1 and 50 inclusive}\}$

My sets can include every number between 1 and 50 including those numbers

$A = \{\text{Square numbers}\}$
 $A = \{1, 4, 9, 16, 25, 36, 49\}$

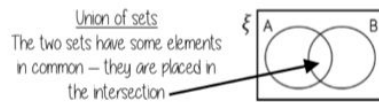
All the numbers in set A are square number and between 1 and 50

Interpret and create Venn diagrams



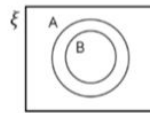
Mutually exclusive sets

The two sets have nothing in common
No overlap



Union of sets

The two sets have some elements in common – they are placed in the intersection



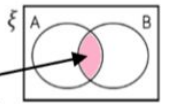
Subset

All of set B is also in Set A so the ellipse fits inside the set

The box

Around the outside of every Venn diagram will be a box if an element is not part of any set it is placed outside an ellipse but inside the box

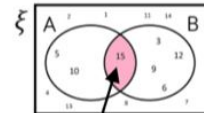
Intersection of sets



Elements in the intersection are in set A AND set B

The notation for this is $A \cap B$

$\xi = \{\text{the numbers between 1 and 15 inclusive}\}$
 $A = \{\text{Multiples of 5}\}$ $B = \{\text{Multiples of 3}\}$

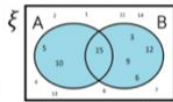


The element in $A \cap B$ is 15

In this example there is only one number that is both a multiple of 3 and a multiple of 5 between 1 and 15

Union of sets

Elements in the union could be in set A OR set B

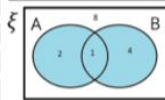


$\xi = \{\text{the numbers between 1 and 15 inclusive}\}$
 $A = \{\text{Multiples of 5}\}$ $B = \{\text{Multiples of 3}\}$

The elements in $A \cup B$ are 5, 10, 15, 3, 9, 6, 12

There are 7 elements that are either a multiple of 5 OR a multiple of 3 between 1 and 15

The notation for this is $A \cup B$



This Venn shows the **number of elements** in each set

Sample space – for single events



A sample space for rolling a six-sided dice is $S = \{1, 2, 3, 4, 5, 6\}$



A sample space for this spinner is $S = \{\text{Pink, Blue, Yellow}\}$

You only need to write each element once in a sample space diagram

- A Sample space represents a possible outcome from an event
- They can be interpreted in a variety of ways because they do not tell you the probability

Probability of a single event



Probability = $\frac{\text{number of times event happens}}{\text{total number of possible outcomes}}$

$P(\text{Blue}) = \frac{4}{10}$ ← There are 4 blue sectors
 ← There are 10 sectors overall
 $= \frac{2}{5}$

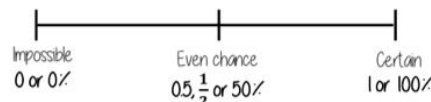
Probability notation
 $P(\text{event})$

Probability can be a fraction, decimal or percentage value

$\frac{4}{10} = \frac{40}{100} = 0.40 = 40\%$

Probability is always a value between 0 and 1

The probability scale



The more likely an event the further up the probability it will be in comparison to another event (it will have a probability closer to 1)



There are 2 pink and 2 yellow balls, so they have the same probability

There are 5 possible outcomes
 So 5 intervals on this scale, each interval value is $\frac{1}{5}$

Sum of probabilities

Probability is always a value between 0 and 1



The probability of getting a blue ball is $\frac{1}{5}$
 \therefore The probability of **NOT** getting a blue ball is $\frac{4}{5}$
 The sum of the probabilities is 1

The table shows the probability of selecting a type of chocolate

Dark	Milk	White
0.15	0.35	

$P(\text{white chocolate}) = 1 - 0.15 - 0.35 = 0.5$



Week A Knowledge Organiser

Week B My Maths Teacher Set Task

Prime numbers and Proof

@whisto_maths

What do I need to be able to do?

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

- Find and use multiples
- Identify factors of numbers and expressions
- Recognise and identify prime numbers
- Recognise square and triangular numbers
- Find common factors including HCF
- Find common multiples including LCM

Keywords

- Multiples:** found by multiplying any number by positive integers
- Factor:** integers that multiply together to get another number.
- Prime:** an integer with only 2 factors
- Conjecture:** a statement that might be true (based on reasoning) but is not proven
- Counterexample:** a special type of example that disproves a statement
- Expression:** a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)
- HCF:** highest common factor (biggest factor two or more numbers share)
- LCM:** lowest common multiple (the first time the times table of two or more numbers match)

Multiples

The "times table" of a given number

All the numbers in this lists below are multiples of 3

3, 6, 9, 12, 15...

This list continues and doesn't end

Non example of a multiple

45 is not a multiple of 3 because it is 3×15

$3x, 6x, 9x \dots$

x could take any value and as the variable is a multiple of 3 the answer will also be a multiple of 3

Not an integer

Factors

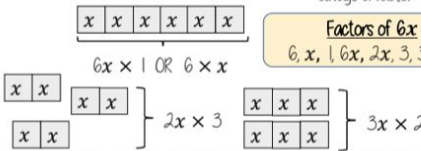
Arrays can help represent factors

Factors of 10: 1, 2, 5, 10

10×1 or 1×10

5×2 or 2×5

Factors and expressions



The number itself is always a factor

Factors of $6x$: $6, x, 1, 6x, 2x, 3, 3x, 2$

Prime numbers

- Integer
 - Only has 2 factors
 - and itself
- The first prime number
The only even prime number

2

Learn or how-to quick recall...

2, 3, 5, 7, 11, 13, 17, 19, 23, 29...

Square and triangular numbers

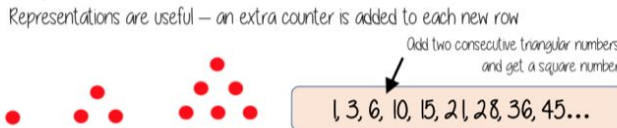
Square numbers



Representations are useful to understand a square number n^2

1, 4, 9, 16, 25, 36, 49, 64 ...

Triangular numbers



Common factors and HCF

Common factors are factors two or more numbers share

HCF - Highest common factor

HCF of 18 and 30

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

Common factors (factors of both numbers)

1, 2, 3, 6

HCF = 6

6 is the biggest factor they share

Common multiples and LCM

Common multiples are multiples two or more numbers share

LCM - Lowest common multiple

LCM of 9 and 12

9: 9, 18, 27, 36, 45, 54

12: 12, 24, 36, 48, 60



LCM = 36

The first time their multiples match

Comparing fractions

$\frac{3}{5}$ and $\frac{7}{10}$

Compare fractions using a LCM denominator

$\frac{6}{10}$ and $\frac{7}{10}$

Conjectures and counterexamples

Conjecture

1, 2, 4, ...
The numbers in the sequence are doubling each time.

A pattern that is noticed for many cases

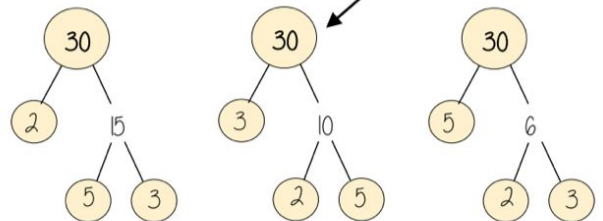
Counterexamples

This sequence isn't doubling it is adding 2 each time

Only **one** counterexample is needed to disprove a conjecture

Product of prime factors

Multiplication part-whole models



All three prime factor trees represent the same decomposition

Multiplication is commutative

$30 = 2 \times 3 \times 5$

Multiplication of prime factors

Using prime factors for predictions

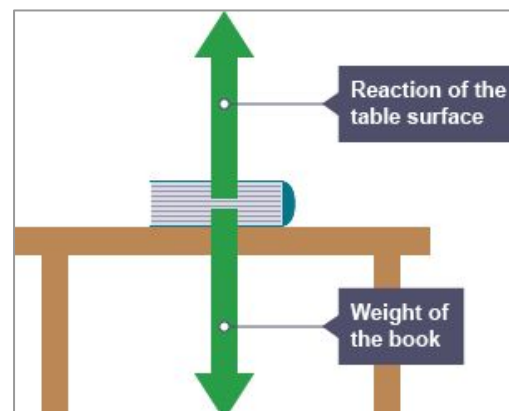
- eg 60: 30×2 , $2 \times 3 \times 5 \times 2$
- 150: 30×5 , $2 \times 3 \times 5 \times 5$

Forces

What are forces?

Forces explain why objects move in the way that they do, or why they don't move at all. Forces can also change the direction that objects are moving in and change their shape.

You cannot see forces but you can see the effects of them. Force arrows show the direction and the size of the force, as shown on the diagram. Forces always act in pairs and in opposite directions to each other. These are known as "interaction pairs".



Different types of forces

There are two main types of forces: **contact** and **non-contact** forces.

Contact forces only act when they touch an object. **Friction** is an example of this type of force. It can be found where surfaces or objects meet, such as tyres on a road or when you rub your hands together on a cold day. **Air resistance** is another example of a contact force. This happens when objects such as a car, moves through the air.

Non-contact forces happen when the force can act on an object without touching the object. Gravity and magnetism are good examples of this type of force.

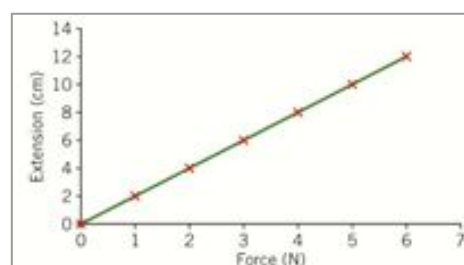
Forces can be measured using a **newtonmeter**, and are measured in **Newtons (N)**.

Stretching forces

Bungee cords, springs, and elastic bands all stretch when you exert a force on them. The amount that they stretch is called the **extension**. A bungee cord stretches as the jumper falls. When the bungee cord has stretched as far as it will go, it pulls them back up. This force is tension.

Springs are special. If you *double* the force on the spring the extension will *double*. When you remove the force the spring goes back to its original length. When springs do this, they obey Hooke's Law. Other objects such as elastic bands will not double the extension as the force doubles.

At some point the spring will not go back to its original length when you remove the force. This is the **elastic limit**.



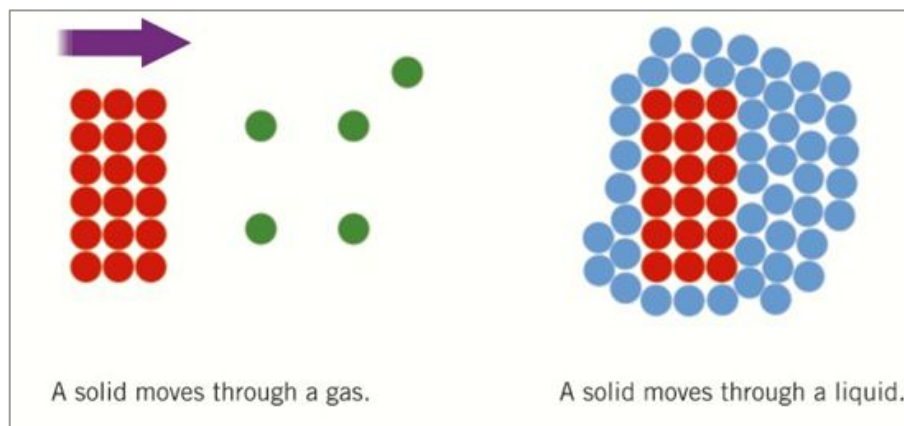
▲ This graph shows how the extension of a spring changes as you pull it.

Forces

Drag Forces

A dolphin swimming through the water and a surfer paddling through the water will both experience **water resistance**. As a snowboarder jumps through the air, they will experience **air resistance**. Water and air resistance are examples of drag forces. These forces are to do with the particles in air and water (see the diagram below). As the dolphin moves through the water, it pushes the water particles out of the way. This produces a drag force, which slows it down. Parachutes work by using drag forces to slow down skydivers and drag-racing cars. The contact with the air produces a drag force.

Drag forces can be reduced by **streamlining** the object so it passes through the air or water with less drag created. This is why a dolphin's nose is shaped the way it is!



A solid moves through a gas.

A solid moves through a liquid.

Force fields

If you rub a balloon you can pick up bits of paper with it. This is an **electrostatic** force. These electrostatic forces are non-contact forces. Non-contact forces work as there is a special area called a **field** around the object that has the force. E.g. a magnet works as there is a field around the magnet that can exert a force on objects brought close to it. Electrostatic forces work in the same way. As an object moves further away from the field, the force on the object becomes weaker.

Gravity can also have an effect on the mass of a material. The effect of gravity on an object's mass is known as the object's weight. Your weight on the moon would be smaller than on Earth as the effect of gravity on the moon is much less.

Balanced and Unbalanced Forces

When two forces acting on an object are equal in size, we say that they are **balanced** forces. This can be seen when two tug of war teams are pulling in opposite directions but with the same force. The rope will not move as the forces cancel each other out.

If the forces on an object are not the same size, they are **unbalanced**. Unbalanced forces are needed to move objects or to make them go faster. They need to be able to overcome the forces from air resistance and friction. If the drag forces are bigger than the forces from the engine, the object will slow down.

Law and order in medieval society

In the medieval period, there was no organised police force and most law enforcement was organised by local people. In some areas, every male over the age of 12 had to join a group called a **tithing**, and they had to make sure no one else in the group committed a crime. If someone was the victim of a crime, they had to raise the 'hue and cry', meaning other villagers had to come to help find the criminal.

Some areas had watchmen or constables who would patrol the area to prevent crimes. Most minor crimes were dealt with by the local lord. A judge, who was appointed by the king, travelled to each county to deal with serious crimes.

If a jury couldn't decide if a person was innocent or guilty, there was the option of **trial by ordeal**. This is where people were subjected to painful tasks, such as:

- Walking on hot coals
- Putting your hand in boiling water to retrieve a stone
- Holding a red-hot iron

If your wounds healed cleanly after three days, then you were considered to be innocent in the eyes of God. If not, you were considered guilty and would be punished accordingly. Punishments included being put in the stocks, fines, or even death for more serious crimes.

Below are some strange medieval punishments, can you find any more?

1. Apologising while wearing a white sheet
2. Wearing animal masks and humiliating badges
3. Wearing a custom made bridle
4. Plucking a stone out of boiling water
5. Being suffocated in mud
6. Hanging in cages until death
7. Having a goat lick a prisoner's feet
8. Hanging people by one arm
9. Depriving people of sleep



What did medieval people believe about life after death?

- Life after death was very important to people during the Middle Ages.
- Christians believed that if you followed the Church's rules and led a good life, you would go to heaven.
- If you didn't follow the Church's rules or lead a good life, Christians believed that you would go to purgatory or hell. The better Christians would spend time in purgatory before hopefully going onto heaven, but the worst would be doomed to spend eternity in hell.
- Most people during this time could not read or understand church services (they were in Latin).
- Doom Paintings were used to help people to understand and to show them what would happen if they didn't follow the Church's rules.

An example of a medieval doom painting, showing the joys of heaven at the top and the horrors of hell at the bottom. This painting is very rare. It dates from around 1200AD and is painted on a wall at Chaldon church in Surrey.



What was the Black Death and why was it so deadly?

The Black Death was a disease that affected England from 1348 onwards. It is estimated that it killed as much as 50% of the population of Europe over a few years.

There were two types of plague:

- Bubonic plague - This was the more common type of plague and was carried in the bloodstream of rats. Fleas bit the rats and become infected. They then hopped onto humans, bit them and passed on the disease.
- Pneumonic plague - This was plague more deadly. It was caught by breathing in the germs when an infected person coughed or sneezed. The symptoms were fever, headaches, chest pain and coughing.

People thought that the Black Death was caused by...	They tried to stop themselves from catching it by...	They tried to treat the Black Death by...
<ul style="list-style-type: none"> ● God deserting humankind for their sins ● Unusual position of the planets ● Impure air from a volcano or earthquake, known as 'miasma' ● The Jews 	<ul style="list-style-type: none"> ● Praying ● Going on a pilgrimage ● Self-flagellation (whipping yourself to show you're sorry) ● Escaping or quarantining the sick ● Carry a posy of flowers or doing good things 	<ul style="list-style-type: none"> ● Asking for God's forgiveness ● Bleeding or purging their bodies to get the sickness out ● Smelling strong herbs ● Lancing buboes

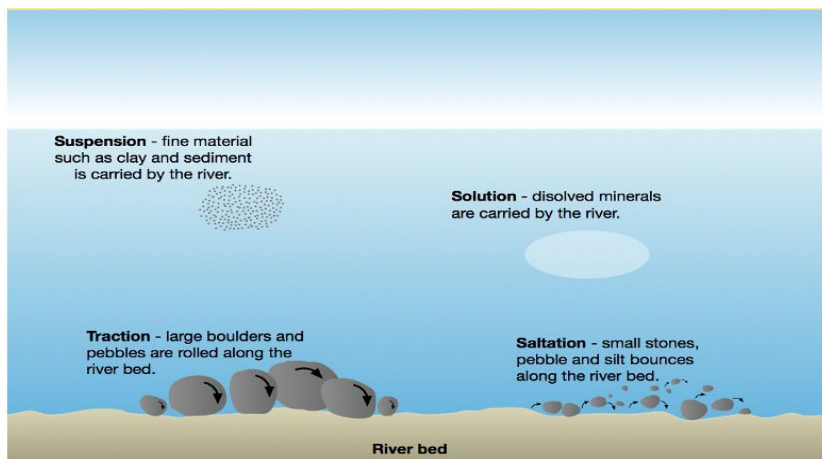
Key facts about the Black Death:

1. Half the people in Britain died from the Black Death and more died in later outbreaks of the disease in the decades afterwards.
2. Food became four times as expensive, because animals and crops died with no one to look after them.
3. Across Europe, 25 million people died.
4. Even though praying to God had not worked to save or protect people, most people still remained deeply religious and kept going to church.

Can you add some facts of your own?

Rivers and Flooding

River Transportation Processes



Key Terms

Waterfall- Forms at a steep drop in a river profile.

Plunge Pool- Forms at the base of a waterfall when the water hits the rocks and they erode away.

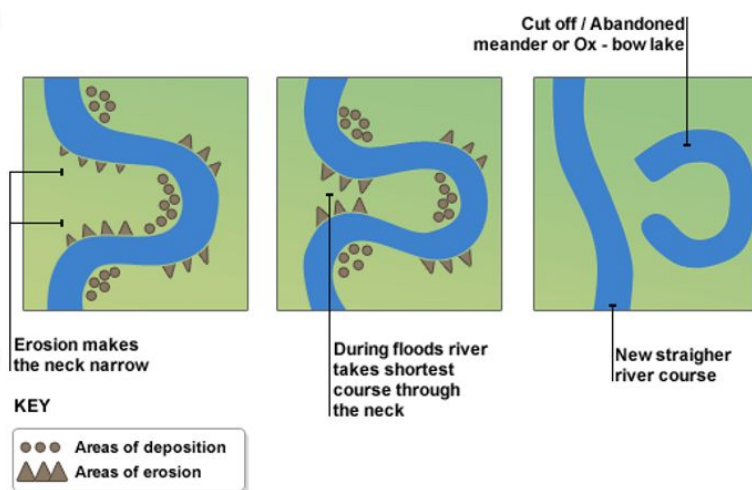
Meanders- Bends in the course of a river.

River Cliff- The steep bank formed on the outside of a bend.

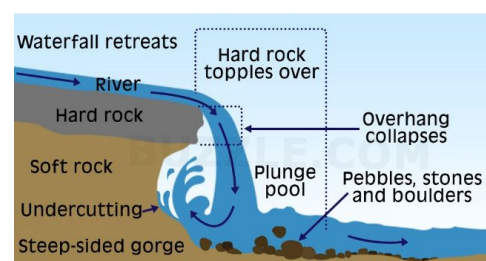
Flood- An overflow of water from a river beyond its normal limits, especially over what is normally dry land.

Tributary- A river or stream flowing into another river.

Meander Formation



Waterfall Formation



How Can Flooding be Managed?

Flood Warnings and Preparation	This is a form of soft engineering. It lets people know that a flood may occur so they can prepare themselves.
Embankments	This is a form of hard engineering. These raise the river banks so more water can be held.
Sandbags	This is a form of soft engineering. The sand in the bags absorbs the water and can be used to protect small gaps.
Flood Walls	This is a form of hard engineering. They increase the amount of water that is able to be held in the river.



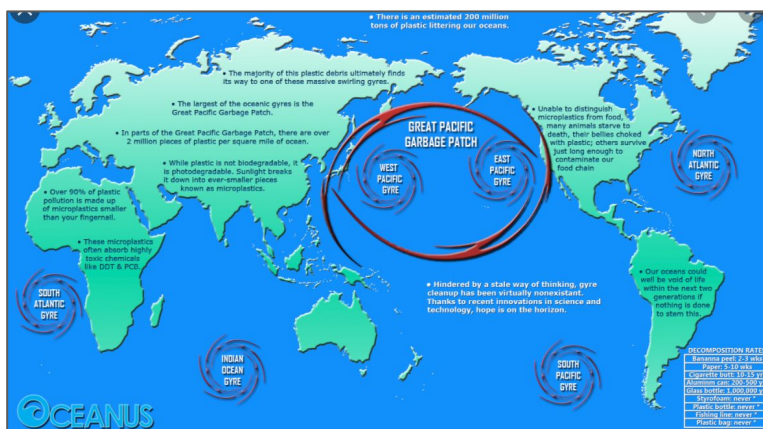
FLOOD WARNING



Oceans and Plastic

Sustainability	Understanding how to meet the needs of the present without compromising the needs of future generations to meet their own needs.
Biodiversity	The variety of living species that live on the planet.
Microplastics	Tiny plastic particles that result from both commercial product development and the breakdown of larger plastics
Ecosystem	An area, within which plants and animals interact with each other and their non-living environment (rock, soil, climate).
Provisioning services	Tangible products obtained from ecosystems
Regulating services	Benefits from the regulation our environment
Cultural services	Non-material benefits obtained from nature
Supporting services	Services necessary to produce all other ecosystem services
Ecological goods	Tangible products resulting from the processes and interactions within natural systems. (E.g. fish)
Ecological services	The benefits provided to humans through the complex interactions within the ecosystems. (E.g. regulating our planet's climate)

Great Pacific Garbage Patch



- Large area of ocean in America between California and Hawaii, where loads of plastic waste has gathered together.
- It is caught up in ocean currents.
- It formed because currents near the centre of the Northern Pacific Ocean move around in a kind-of circle, which catches and holds floating pieces of plastic.
- The amount of debris in the Great Pacific Garbage Patch accumulates because very little of it is **biodegradable**.

Oceans and Plastic

The Journey of Plastic Waste



- Plastic is in lots of things we use from clothing to crisp packets, and bottles to buckets.
- Making things from plastic is popular because there are many different types and it can be made in to all sorts of shapes, colours and sizes.
- Plastics are man-made and can be produced from natural materials like coal and oil.
- The problem with plastic is that most of it isn't biodegradable, so instead it can hang around in the environment for hundreds of years.
- Each year, 400 million tonnes of plastic is produced and 40% of that is single-use (carrier bags, drinks bottles and crisp packets).
- Each year 12 million tonnes of plastic enter the ocean every year.
- [What really happens to the plastic you throw away - Emma Bryce](#)

Managing Plastic Pollution

- Individual or group beach cleans.
- Recycle plastic instead of put it in the bin.
- Avoid single use plastic.
- Locate new countries to export recovered plastic packaging to.
- Campaign to the Government about eliminating plastic pollution.



Plastic on Lamu Island



- Plastic on the island is having an impact on tourist numbers in the area.
- In 2017 Kenya introduced a total ban on plastic bags, with the most severe penalty in the world.
- Offenders face a \$40,000 fine or up to 4 years in jail for manufacturing, selling or using them.

Key Terms:

Agnostic: Someone who believes you can never know for sure whether God exists or not.

Atheist: Someone who doesn't believe in a God or gods.

Empathy: to understand and share the feelings of others.

Humanist: a follower of the principles of humanism.

Reason: the power of the mind to think, understand and form judgements.

Theist: Someone who believes that there is a creator God.



Alice Roberts is the President of Humanists UK. Other famous humanists include Stephen Fry and Ricky Gervais.

Non-religious people may be **atheists**, which means that they don't see any reason to believe there is a god. They can also be **agnostic**, meaning they accept that we can't know for certain whether or not a god exists. Many people are both agnostic and atheist at the same time. They accept certainty is impossible, but see no good reason to believe. Some non-religious people may even believe in a god or gods, while wishing not to follow any religion.

Humanists have no doctrine or creed they must sign up to. Many will disagree on the specifics of the best way to live. But most:

- Believe the world is a natural phenomenon with no supernatural side, and **science** provides the best way to understand it
- Are **atheists** (don't believe there is a god) or **agnostics** (believe we can't know if there is a god)
- See no persuasive evidence for an afterlife, nor an 'ultimate', external meaning to life, but believe we are instead **capable of making our own lives meaningful** and supporting others to do the same
- Believe morality is a human construct and we should use **reason, empathy, compassion, and respect** when deciding how to act
- Are **secularists**: they believe in freedom of religion and belief, and that no one religion or belief should hold a privileged place
- Value humanity and **celebrate** human achievements



Où habites-tu?

J'habite... I live

un village - a village
une ville - a town
une grande ville - a city

à la campagne - in the countryside
à la montagne - in the mountains
au bord de la mer - on the coast



C'est comment?

C'est - It is

ancien(ne) - old
Moderne - modern
grand(e) - big
petit(e) - small
Moyenne - medium-sized
confortable - comfortable
joli(e) - pretty
beau/belle - beautiful
blanc(he) - white
tranquil(le) - quiet

J'habite - I live

en Angleterre - in England
en Ecosse - in Scotland
en Irlande - in Ireland
en France - In France
en Espagne - In Spain
en Belgique - In Belgium
en Suisse - In Switzerland
en Guadeloupe - In Guadeloupe
en Tunisie - in Tunisia
en Afrique - in Africa

au Pays de Galles - in Wales
Canada - In Canada

C'est la capitale - It is the capital

E.g. Londres c'est la capitale de
l'Angleterre - London is the capital of
England

Décris ta maison

J'habite... - I live

une petite/grande maison - a small/big
house
une maison jumelle - a semi-detached house
une maison individuelle - a detached house
une ferme - a farm
un appartement - a flat



Les pièces

Dans ma maison - in my house..

au rez-de-chaussée - on the ground floor

au premier étage - on the first floor

il y a ... there is/there are

un salon - a lounge

une salle à manger - a dining room

une cuisine - a kitchen

des WC - a toilet

une entrée - a hallway

trois chambres - 3 rooms

ma chambre - my room

la chambre de mes parents - my parents room

la chambre de mon frère - my brother's room

une salle de bains - a bathroom

un jardin - a garden

un garage - a garage



C'est où?

sur - on

sous - under

derrière - behind

devant - in front of

dans - in



Décris ta chambre

Dans ma chambre il y a ... in my room there is

un lit - a bed

des posters - some posters

un bureau - a desk

un ordinateur - a computer

une armoire - a wardrobe

une commode - a chest of drawers

une lampe - a lamp

une table - a table

une chaise - a chair

une télé - a TV

une étagère - a bookshelf

les rideaux - the curtains

la moquette - the carpet

le mur - the wall

beaucoup de - lots of

Introduction to Careers Education - Key terms

Skills - something you are able to do well

Knowledge - facts, information, or skills acquired through experiences and education. Being able to understand something either practically or theoretically.

Qualities - characteristics that you have that make you who you are, make you feel the way you do and think and act the way you do

Values - principles or standards or behaviour. The things that you consider important in life and which lead you to behave, think, feel and interact in the way that you do.

Why is developing your skills so important?

Skills development is the process everyone goes through where we learn where the gaps in our skills are, and we work on ways to develop those skills in order to help us as individuals succeed.

You need skills for lots of different areas of life and being able to work out what you are good at and work on the things you are not so good at (sometimes with support) will help you when you think about college, jobs, future plans - which all seems a long way off. But the skills you develop now will help shape you for the future.

Important skills to develop and to demonstrate as you go through school and beyond:

Communication - listening, reading, writing and articulating your thoughts clearly in a range of ways

Problem Solving - having the ability to sort out issues for yourself, to analyse issues, make good decisions and sort out problems

Teamwork - work effectively and respectfully with others

Initiative - being proactive, handling situations without fuss, finding answers to questions without having to ask

Work ethic - teachers parents, employers, college lecturers all want to see that you can take responsibility for your actions, You should be able to demonstrate a positive approach to your lessons and home learning as well as other projects, clubs or opportunities you are offered.

Attention to detail - produce detailed work that shows careful thought and accuracy

Leadership - can you motivate and lead others? Can you guide and show others how to do something and to do something well? Then you show leadership qualities.

Why is developing knowledge important?

Knowledge helps us make sense of things - whether that is the things we need to know everyday in school, in lessons or at home and in our wider lives. If you have the knowledge about how things work, fit together or are made you can make sense of them.

Knowledge includes all the things you know and understand and can help you achieve.

What are important qualities to help prepare you for the rest of secondary school and beyond?

Think about the positive qualities you have - they make you who you are but can help you achieve, be successful and should not hold you back if you use them correctly.

- Sense of humour
- Kindness
- Patience
- Empathy
- Approachable
- Organised

Why are your values important and how can they help you?

To make successful decisions and achieve the best you can you need to hold on to the core values of what makes you who you are - honesty, kindness, patience, resilience, adaptability to name a few.

Think about what your values are and how they help you achieve and get to your goals.

Where to look for careers advice and guidance

Careers education is part of preparing for further on in school and after you leave Whitstone. Research opportunities and find out about events by looking in the following places:

- 1) School website - careers section. There are lots of different links to colleges, different websites that can help you think about what you may want to do next and how to get involved.
- 2) Career pilot website - www.careerpilot.org. We look at this in school and you and your parents could begin researching and reading about different career related topics.
- 3) ASK - apprenticeships via the school website too
- 4) Speak to Mrs Hooper (M7) or Miss Pickaver (careers advisor - library) if you want to find out more about how to develop your skills, or for careers advice

Exploring the Orchestra

ORCHESTRA

A large ENSEMBLE (group of musicians) playing different instruments at the same time.

CONDUCTOR

Leads the orchestra with a BATON (white 'stick') and hand signals. Stands at the front so they can be seen by all performers. Sets the TEMPO. Brings different instruments 'in and out' when it is their turn to play. Keeps the performers together. Takes charge in rehearsals.

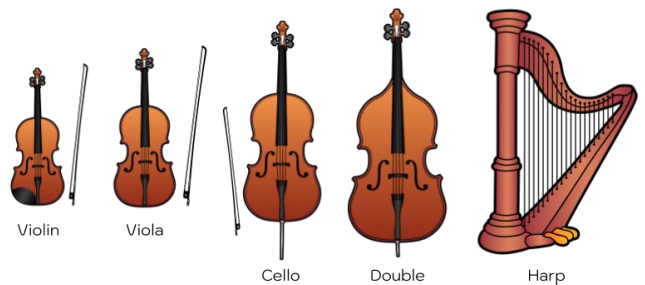
FAMILIES/SECTIONS

Instruments of the orchestra can be divided into 4 families/sections: **STRINGS, WOODWIND, BRASS** and **PERCUSSION**.

The Layout of the Orchestra



The **Strings** section/family is the largest section of the orchestra. The instruments (except the harp) are played with a **bow** (arco), but can be **plucked** (pizzicato). The violins are split into two groups.



Woodwind instruments were originally made from wood: some still are, others are now made of metal. All woodwind instruments are played by blowing air down them. To play flutes and piccolos, air is blown over a hole. Clarinets have a single reed (a small piece of bamboo in the mouthpiece). The oboe, cor anglais, bassoon and double bassoon have a double reed.



There are four types of **brass** instruments in an orchestra, all made from metal. They are blown by the player 'buzzing their lips' into a mouthpiece. The trumpet, french horn and tuba all have three valves which, along with altering the players mouth positions, adjust the length of the tubing allowing for different notes to be played. The trombone has a slide which adjusts the length of the tubing.



Extension tasks:

1. Listen to **Young Person's Guide to the Orchestra** by Benjamin Britten. Can you work out which sections are playing?
2. Investigate the percussion instruments in the orchestra.

Writing a Theatre Review

Before the Performance

Make brief notes on the context of the play:

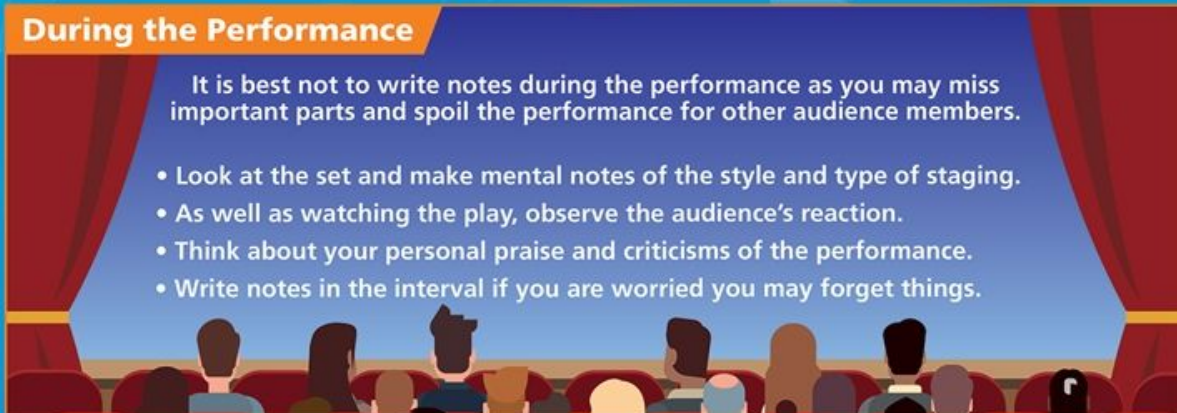
- What is the name of the play?
- Who wrote and directed the play?
- Who are the main actors?
- What genre is it?
- Which company is performing and where is it being performed?
- What type of audience will be watching?
- Research previous productions.



During the Performance

It is best not to write notes during the performance as you may miss important parts and spoil the performance for other audience members.

- Look at the set and make mental notes of the style and type of staging.
- As well as watching the play, observe the audience's reaction.
- Think about your personal praise and criticisms of the performance.
- Write notes in the interval if you are worried you may forget things.



After the Performance















Structuring the Review

1. Start with an introduction that includes the context of the production.
2. Write a short account of the plot, including important facts about how the play was first staged.
3. Give examples of the performances and your opinion on the acting.
4. Describe the set, lighting and sound, giving examples of the best effects and possible improvements.
5. Describe the costumes and make-up and how they suited the characters.
6. Talk about the direction and the themes present throughout the production.
7. Throughout the review, compare the production to previous productions.
8. Finish with a conclusion that sums up what you have gained most from seeing the production.
9. Include pictures and diagrams of the set and costumes to support your opinions.



Theatrical Terms

As in all subjects, Drama has its own specialist terms, words and phrases. Using the correct terms speeds up explanation, clarifies meaning and enables you to be much more specific.

Aside	A speech delivered to the audience, supposedly not heard by the characters on stage.	
Backdrop	Scenery hung at the back of the stage.	
Cue	A signal prompting an event in a performance, e.g. an actor's speech or entrance, a lighting or sound effect.	
Flats	Flat pieces of scenery which can be painted to give the appearance of buildings or setting.	
Flies	The space above the stage, where scenery can be hung or stored when not in use.	
Gauze	A material which can be see-through when lit from behind, or appear solid when lit from the front.	
Iron	A safety curtain separating the stage from the audience in Proscenium Arch theatres.	
LX & SFX	LX - Lighting effects. SFX - Sound effects.	
Prompt	A person (off stage) who prompts an actor if they forget their lines.	
Props (properties)	Items used by an actor during a performance, e.g. cups, books, weapons etc.	
Rostra	Wooden stage blocks or small platforms.	
Stage Manager	Person in charge of running the show from the wings.	
Truck	A platform or rostrum on wheels used to move furniture, set or scenery on or off the stage easily.	
Wings	The unseen area on either side of the stage hidden from the audience's view.	

Design Influences

Product Analysis

You can understand a great deal about how a designer has worked by fully analysing one of their products. This will not only tell you about the design decisions that they have made, but it will help you understand the fashion and trends at the time the product was created.

When you look at the key design features (e.g. colours and form) of the products such as upright vacuum cleaners, similarities with contemporary products can be identified. Nearly 30% of all new cars sold in the UK in 2019 were silver or grey, making these metallic tones a safe bet for domestic machines such as vacuums and washing machines.

We use **ACCESS FM** to help use analyse products.....

A Aesthetics - Is there a theme? Describe the shape, colour, texture.....

C Consumer - Who is the product aimed at?
How can you tell?

C Cost - Does the product look cheap/expensive to make? What about its value for money?

E Environment - Is it environmentally friendly?
Is the product sustainable?

S Safety - Is the product safe to use?
Any loose parts or sharp edges?

S Size - Is it an appropriate size for the job or intended person?

F Function - How well would it do its job? Why do you think this?

M Material - What material or processes have been use?

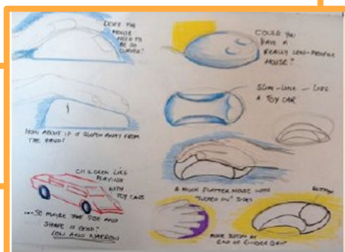


Design Thinking and Communication

Clear 2D and 3D Sketching

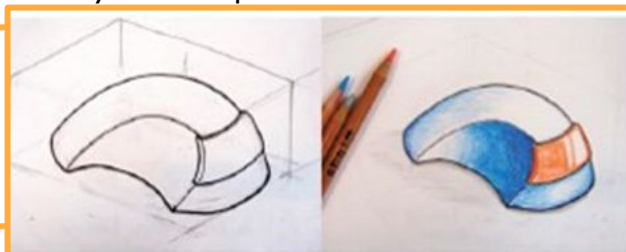
A designer can use a range of techniques to make their initial sketching clear:

- use of colour behind the sketch
- bold outlining of sketches
- sketching in different colours
- crating of 3D sketches
- annotation



Creativity

Creativity and innovation are crucial when producing new design ideas. Look for new ways of achieving the result you need through the development of unique shapes or themes, material choices and extra functionality for example.



Annotation

When annotating your own designs, use well reasoned sentences to fully explain your choices. Make sure you always consider your Design Specification points when thinking of your different ideas.

Methods of Training



Evaluation and analysis vocabulary:

Area of strength
Area of weakness
Aerobic Training Zone
Component of fitness
Intensity
Heart Rate

Considerations

Circuit Training	Consider the design of the circuit so that the same body parts are not being worked in close succession. Consider the aim of the circuit; for example, exercises that improve aerobic endurance. Set appropriate rest and work intervals to raise HR above 60% of max HR.
Continuous Training	Maintain the basic step to ensure that there are no breaks in training. Vary the direction of stepping on/off the box and the movement of the upper/lower body to exercise more muscle groups. Keep up the intensity throughout the workout to raise HR above 60% of max HR
Interval Training	Consider the order of exercises to allow muscles to recover in-between sets. Include boxing strokes such as jab, hook and upper cuts as well as exercises to raise intensity. Use the 'coach' holding the pads to dictate the intervals and to build in some rest. Aim to raise HR above 60% of the max HR

Basic Principles of Training

Frequency

To make adaptations, it would be advisable to train more than twice per week and to gradually increase the frequency over time.

Intensity

Measure this using your Heart Rate. Take this immediately after exercise or during a rest break to check you are in the target training zone.

Time

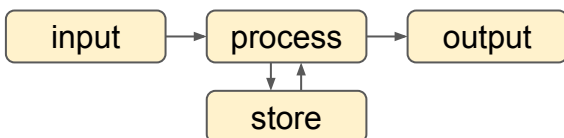
Gradually increasing the amount of time you exercise for in a training session is another way of adaptive training.

Type

Circuit Training, Continuous Training and Interval Training can all be adapted and performed using different activities. There are also other methods of training such as weight training. The other methods of training may help to target alternative components of fitness.

What is a computer?

A computer is any device that takes input, stores it, processes it and then outputs information.



Input Devices

An input device is a piece of hardware that can be used to enter data into a computer.

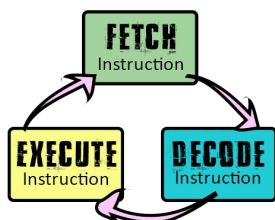


Output Devices

An output device is a piece of hardware that can be used to represent information in a variety of ways.

Fetch, Decode, Execute

The main function of the CPU is to run an endless fetch-execute cycle.



The speed of the FDE cycle is measured in cycles per second (Hertz). This is known as the clock speed.

Processors are usually measured in Gigahertz (GHz).

1 GHz = 1 billion instructions per second

Some processors have more than one core. To calculate the speed of a multiple core processor, you multiply the number of cores by the clock speed.

E.g. An 8 core processor with a clock speed of 2.5 GHz would be capable of up to 20 billion processes per second.

Components

All of the different internal parts of a computer system are known as computer components. Each component has its own purpose and function.

Central Processing Unit

The CPU is the brains of the computer. It does all the processing and calculations for the computer.



Heat sink

A heat sink is used to draw heat away from important components like the CPU which can get hot. If a component gets too hot, then it won't be able to perform its job as well.



Motherboard

The motherboard is what connects all the other components. It helps to keep them secure and allows them to communicate with each other.



Power Supply

A power supply helps to convert electricity to a suitable voltage to power the computer safely.



Hard Drive

A Hard Drive is where all the computers long term data is stored, e.g. documents, music, films and games.



Random Access memory

RAM is where temporary data is stored whilst the computer is using it. Once the computer is switched off, this data is lost.



Network Interface Card

A network interface card (NIC) enables a computer system to connect to a network. Some allow wireless connections.



Input

Output

Process

Component

CPU

RAM

FDE

Motherboard

Power Supply

Hard Drive

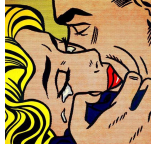
Clock Speed

Heat Sink

Pop Art

What is Pop Art?

It is an art movement that emerged in the 1950s and flourished in the 1960s in America and Britain, drawing inspiration from sources in popular and commercial culture. Different cultures and countries contributed to the movement during the 1960s and 70s.



Roy Lichtenstein was an American pop artist. During the 1960s, along with Andy Warhol, Jasper Johns, and James Rosenquist among others, he became a leading figure in the new art movement.



Corita Kent and also known as Sister Mary Corita Kent, was an American Roman Catholic religious sister, artist, designer and educator. Key themes in her work included Christianity, and social justice.



He was born Andrew Warhola in 1928 in Pennsylvania. His first job was illustrating adverts in fashion magazines. Now is he known as one of the most influential artists who ever lived!



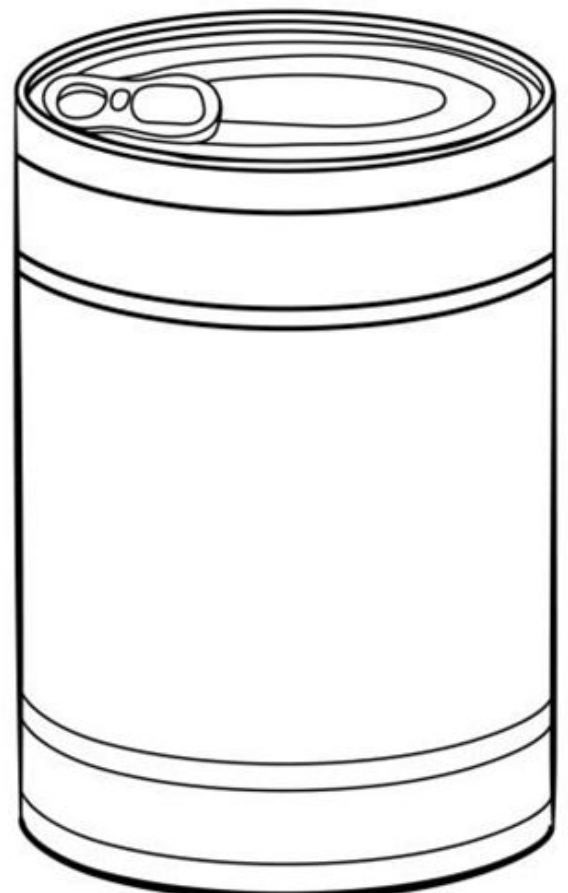
Keith Haring was born on May 4, 1958 in Reading, Pennsylvania. He developed a love for drawing at a very early age, learning basic cartooning skills from his father and from the popular culture around him.

Pop artists celebrated commonplace objects and people of **everyday** life, in this way seeking to elevate popular **culture** to the level of fine art.

Create your own Andy Warhol soup can

Things to think about:

- What ingredients will go in your soup?
- What is it called?
- Choose 3 different colours to use
- Should the can be bright and bold or cool and dark?



Food Assurance.

Food assurance schemes are run as product certification schemes. These schemes use regular independent inspections to check that members are meeting specific standards. They often use logos on products, websites and/or literature to indicate they have fulfilled all the requirements.



Red Tractor is an independent UK whole chain food assurance scheme which assures high standards of food safety, animal welfare and environmental protection from farm to pack.

Red Tractor Standards.

Food safety

Everyone involved from farmer to caterer are experts in their field, trained to handle food safely and responsibly.

Animal welfare

Ensures animals have everything they need for a good quality of life and are treated with compassion.

Environment

Makes sure farmers protect the countryside by preventing pollution of watercourses, soil, air and wildlife habitats.

Traceability

Every part of the food supply chain is inspected to ensure food carrying the logo is accounted for and can be traced back to UK farms.

Fairtrade.



Fairtrade aims to ensure a set of standards are met in the production and supply of a ingredient.

Key Terms:

Standards
Food safety
Animal Welfare
Environment
Traceability

Fairtrade means workers' rights, safer working conditions and fairer pay.

Food Miles.

How far has your food travelled to get to your kitchen? That journey, the distance between where something is grown to where it's eaten, is what we mean when we talk about 'food miles'.

If your ingredients have come a long way, they may have a heavy carbon footprint. Think about home-grown herbs or local farmers market vegetables. These won't clock up many food miles.

**ON AVERAGE, FOOD TRAVELS
1,500 MILES
FROM FARM TO TABLE**



UK law requires meat, fish and seafood labels to show their country of origin. but these do not tell us how it has been imported or where else it may have been.

Key Terms:

Food miles
Distance
Carbon footprint
Locally sourced
Origin
Labels

DESIGN CONSIDERATIONS

In Graphic Design

Once you have been given your brief (basic design problem) you should expand on it to start the design process.

To do this, identify key considerations for your brief. These can be:

- Aesthetic considerations - the appearance of your design
- Functional considerations- the purpose of your design
- Market considerations - who your design is for



Aesthetics relates to the appearance of your design and its **visual impact**.

Consider the appearance of the design you want to create and how this might be achieved.

- Style - What design movements or eras might inspire the appearance of your design?
- Visual elements - What qualities of line, colour, shape, form, tone, pattern or texture are most important?
- Materials, techniques and finishes - How will these affect the look and feel of your design?
- Sources of inspiration - Are there natural, artistic, social or cultural influences you want to reflect?

Functional considerations

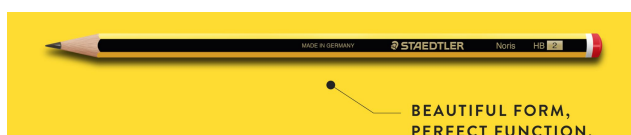
Functional consideration refers to the purpose of your design:

- Purpose - What are the **primary functions** of your design? How will it perform these?
- Constraints - Are there issues of size and cost? Are there any elements you have to include in your design?
- Materials and techniques - Does the function of your design demand that materials with particular qualities are used?
- Practicality - What does your design have to do so that it can be used successfully?

Market considerations

Consider the needs of the **target market**. This would include whether the design is for a **mass market** (a wide group of different people) or for a **niche market** (a small group with similar needs and interests).

- Who - What type of people will buy or use your design? Do they have particular needs or interests?
- Age group - Does the age group you are appealing to have particular requirements?





Contact work



Which medal do you want to achieve in every lesson?



Gold
Excellent team player
Creative ideas inputted
100% focus



Silver
Good team player
Follows the rules
Inputs some new ideas



Bronze
Motivated
Self control
Focused

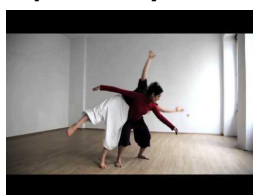
CONTACT WORK RULES

- Have self control and stay focused at all times to ensure you get the best out of this lesson ahead.
- Listen to your peers and teacher at all times to ensure you understand all health and safety measures
- Watch any demonstrations provided to ensure your contact work is performed safely
- Be patient, sometimes doing contact work takes time and a lot of trust building with your partner.
- Be aware, look around you, do you have enough space to perform your contact moves safely
- Be relaxed, if you're not you could cause yourself an injury.

Spartan Grip – the safe way to hold hands in contact

APPRECIATION / WATCHING TASK

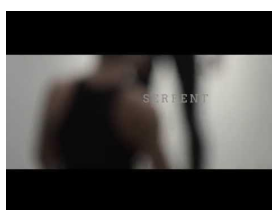
<https://www.youtube.com/watch?v=qnzKHrxKbA>



Summarise this video:

- What was it about?
- What body part is really important to use in contact?
- What did you learn?
- What did already know?
- What would you like to try?

<https://www.youtube.com/watch?v=2aLlfvQoFhk>



Think about these questions while watching the video clip about and try and answer them fully in your own words.

- What was effective about this use of contact work?
- Describe how and where the dancers were in contact.
- Explain why and what you enjoyed about this video
- What does contact add to choreography?
- Where in your work could you add contact work?

TASK- Try and find out as many choreographers you can who use primarily this dance style / technique in their practice

WHAT IS CONTACT IMPROVISATION?

Contact

Improvisation

is a partner dance form based on the physical principles of touch, momentum, shared weight, and most quintessentially - following a shared point of contact. The form was founded in 1972 by **Steve Paxton**. Integrating his background as a modern dancer and his studies in the martial art form Aikido, Steve developed Contact Improv through explorations with his students and colleagues at the time. This dance practice explores the skills of falling, rolling, counterbalance, lifting using minimal effort, how to make ourselves light when being lifted, centering and breathing techniques, and responsiveness to our partners and surroundings.

TASK - Conduct some research on Steve Paxton: What can you find out about him? Where did he train? What professional dance works has he created?

CHOREOGRAPHY, PERFORMANCE AND REHEARSAL



Evaluating your dance work?
 Try these **sentence starters** to help you reflect
 and appreciate your work:



I would like to tell you about.....

I would like to explain about.....

I have choreographed.....

My dance was about.....

This term I have learnt.....

I am pleased with my finished performance because.....

The most enjoyable part of the work was.....

The area I found the most challenging was.....

I am now aware of.....

The equipment/resources I have used are.....

I would develop my work by.....

I would like to use this (insert: technique, idea, development or method) in my future projects because.....

The key focus this term was.....

Important things to remember are.....

I have learnt how to.....

I have planned.....

The most enjoyable part of the work was.....

I am able to use.....

CHOREOGRAPHY

Check you have you thought of the following below to support your final assessment piece:

- Is the stimulus clear through your dance?
- Have you used choreographic devices? Such as, repetition, contrast, transitions, highlights, beginning and end, climax
- Have you used contrasting dynamics?
- Have you used original and developed actions?
- Have you created motifs and movement material that tell the dance idea?
- Have you got clear motif development?
- Have you thought about your use of space, levels, pathways, entrances and exits?
- Have you got clear relationships shown within your dance?
- Do you have a moment of pause or stillness?
- Is there a clear structure to your dance?
- Have you thought about creating a good start and finish? (offstage/onstage)

PERFORMANCE

When you perform your dance assessment here are a list of skills that I will be looking out for in your dance:

Movement Memory - remembering your dance

Accuracy - copying exactly the actions you see

Extension - stretching your limbs into the space

Fluency - moving from one action to the next without pauses

Posture - how you hold your body when sitting/standing

Spatial Awareness - knowing where you are in the space

Strength - muscle power needed to perform movements

Focus - use of the eyes looking at other dancers, the audience or to a body part

Facial Expression - emotion shown through eyes, mouth and eyebrows

Sensitivity to others - in space, group formations, when in contact

Commitment - considering work as a performance piece

Application of stylistic features and appropriate dynamics

REHEARSAL

- Warm up and stretch properly and correctly
- Mentally and physically prepare yourself for the rehearsal/lesson ahead
- Follow health and safety rules in dance and wear the correct attire
- Work with different people and in new group variations—1, 2, 3, 4, 5
- Aim to Input creative ideas but also listen to the ideas of others
- Communicate effectively and calmly with others
- Take the lead in group work and be a team player – Teamwork
- Try to show and maintain commitment to your work
- Focus at all times
- Repetition is key, repeating your creative dance sequences will help remember your dance
- Identify yours and your groups strengths & Identify areas for improvement to make progress in your dance work

Challenge 1 - Physical Education - Weeks 1-3

Over this term we would like you to try and complete 1-3 Joe Wicks workouts very week from his youtube channel 'The Body Coach' (<https://www.youtube.com/@TheBodyCoachTV>). Start with an easy workout and as you get more confident try some of the longer more challenging workouts.

Good Luck!

The PE team



Challenge 2 - Science - Weeks 4-6

Now that you have a better understanding of **forces** and what they do, create an article for a science magazine aimed at 11-14 year olds, explaining what forces are and the effects that they can have on objects. You may want to carry out a little extra research to find different examples to use. Include some pictures too so that readers can see what you are explaining.

TYPES OF FORCE



FRICTION FORCE



GRAVITY FORCE



NORMAL FORCE



APPLIED FORCE



DRAG FORCE



ELECTRIC FORCE



SPRING FORCE



MAGNETIC FORCE