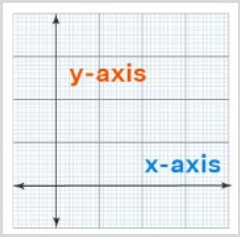
Year 8 Art and Design Autumn Term Knowledge Organiser

Key Vocabulary:		
1	**The Formal Elements of Art**	The formal elements of art are used to make a piece of artwork. The art elements are line, tone, texture, shape, pattern and colour. They are often used together, and how they are organised in a piece of art determines what the finished piece will look like.
2	**line**	A line is a mark or link between two points.
3	**mark**	Mark making describes the different lines, dots, marks, patterns and textures to produce a work of art. Artists use gesture to express their feeling and emotions in response to something seen or something felt .
4	**tone**	Tone refers to the light and dark values of an object when drawing. There are three different types of tone: shadows, mid tones and high lights. **Value** in art is essentially how light or dark something is on a scale and refers to tone.
5	**texture**	The texture stimulates two different senses: sight and touch.
6	**shape**	Shape is a flat, enclosed area such as a square or triangle.
7	**form**	A form can refer to a three-dimensional composition or object.
8	**pattern**	A repeated decorative design.
9	**complementary colours**	Complementary colours are directly opposite to each other on the colour wheel. The colour pairs always consist of either a primary with a secondary colour (red and green; yellow and purple; blue and orange) or two tertiary colours (red-orange and blue-green; yellow-green and red-purple; yellow-orange and blue-purple).

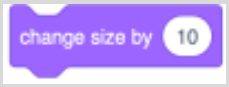
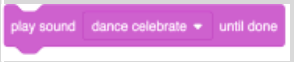
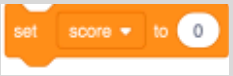
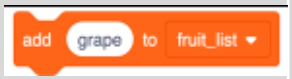
10	**scale**	The scale of something is its size. To scale something is to enlarge it. To scale down is to do a smaller version.
11	**Balance**	If a picture or piece of art work has balance then each part of it works well together in a whole piece.
12	**space**	A space is the gap between objects.
14	**tint**	Tint is when a colour becomes lighter by adding white.
15	**harmonious colours**	Colour harmony is achieved using colours that relate to one another in some way.
16	**mixed media**	Mixed media refers to a visual art form that combines a variety of media in a single artwork.
16	**The Golden Ratio**	The Golden Ratio is a mathematical ratio. It is commonly found in nature, and when used in a design, it adopts an organic and natural-looking composition. This is aesthetically pleasing to the eye.
17	**composition**	The arrangement of elements in a piece of art.

Year 8 Computing Autumn Term Knowledge Organiser Block Based Coding in Scratch

Key Vocabulary:

1	**Program**	A program is a set of instructions that tell a computer what to do.
2	**Algorithm**	A sequence of instructions that can be processed by a computer
3	**Sprite**	Characters that you can make move or say things.
4	**Stage**	The area of the screen where the action occurs in a Scratch program. Also the background of the project.
5	**Costume**	Pictures used to change how a Sprite looks, or to animate a Sprite.
6	**Script**	A series of connected blocks that perform a specific function.
7	**Loops**	*Loops* are a programming concept that can be used to repeat sets of instructions until a certain condition is met.
8	**X and Y coordinates**	This will help you remember… X is like a cross and Y in the sky!!  X, Y – X always comes first, like in the alphabet XYZ
9	**Events**	an event is something that *happens*. It could be a key being pressed, or a mouse being clicked

Blocks in Scratch:

Motion block		Control the sprite's movement around the Stage.
Looks block		Change what the user can see on the Stage.
Sound block		Control the sound that is output
Event block		Start instructions running.
Control block		Determine when other instructions run. For example, this could be by waiting before moving on to the next block, or running some blocks multiple times
Sensing block		Allow your programs to detect changes in your Scratch project, for example, if a sprite is touching another sprite, or how long a timer has run for.
Operator block		Used to manipulate letters, numbers, and symbols, and perform calculations or compare values. For example, you can use them for adding two numbers together, or searching for a letter in a word.
Variables block		Allow your programs to: define, set and change data stored in a variable and controls how you view the variable on the stage.
List blocks		Used to manage data that are stored in a list.

Year 8 Computing Autumn Term Knowledge Organiser Logic

Key Vocabulary:		
1	**Logic**	A proper or reasonable way of thinking about or understanding something. Often referred to as common sense.
2	**Boolean Logic**	Logic used by a computer to process information it can only have two results: • The result is **TRUE, ON, (1)** • Or the result is **FALSE, OFF, (0)**
3	**Number Systems**	A system used to express numbers
4	**Binary**	Binary is a number system that only uses two digits: 1 and 0. All information that is processed by a computer is in the form of a sequence of 1s and 0s. Therefore, all data that we want a computer to process needs to be converted into binary. The binary system is known as a 'base 2' system.
5	**Denary**	The decimal or "denary" number system uses the Base-of-10 numbering system where each digit in a number takes on one of ten possible values, called "digits", from 0 to 9
6	**Logic Gates**	A **logic gate** is a building block of a digital circuit.

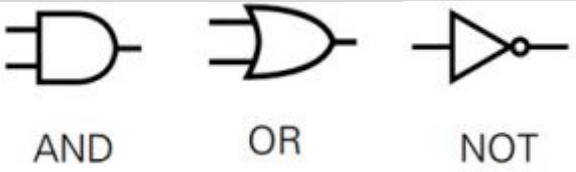
Bit (b)	The smallest unit of data. 0 or 1.
Nibble (N)	4 bits
Byte (B)	8 bits (note the difference between b and B)
Kilobyte (KB)	1000 bytes. Note KB is different from Kb.
Megabyte (MB)	1000 KB
Gigabyte (GB)	1000 MB
Terabyte (TB)	1000 GB
Petabyte (PB)	1000 MB

Multipliers	128	64	32	16	8	4	2	1
Example binary number	0	0	0	1	0	1	1	1

Multipliers or weights are the amount each digit in a sequence is worth e.g the number 30 contains three 10s and zero 1s . 10 and 1 are the multipliers or weights. Binary numbers use different multipliers or weights

To convert from binary to decimal (also known as denary) multiply each binary digit with its multiplier, then add up the products to work out the decimal number. For example in the binary number above 1 x 16 =16 4 x1 = 4 1x2 = 2 and 1x1 = 1 and 16 + 4 + 2 + 1 = 23

Logic Gate Operators



Year 8 Drama Autumn Term Knowledge Organiser

Key Vocabulary:

1	Characterisation	Use of voice and movement to create a role.
2	Staging	Where actors and set are in the space.
3	Genre	How the performance makes you feel: Comedy? Thriller? Science Fiction?
4	Monologue	A character speaks directly to the audience about their feelings
5	Theme	The topic of the performance e.g. Supernatural.
6	Stylised	How performance is presented non naturalistically.
7	Analysing	Realising how a performance is made up of theatrical skills.

Dramatic Tension

8 Key skills

Communication – with each other during rehearsals
Freeze Frames – to exaggerate a point in the play
Teamwork – everyone has a say in what they do and who they are
Characterisation – all must be in the shoes of someone else
Script writing – planning what the characters say
Reading – making sure you are able to access your script
Vocal and physical – developing the character using voice and movement

9 Key knowledge

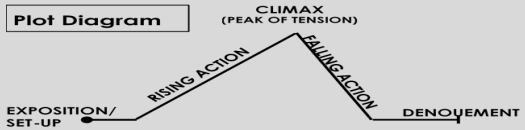
Dramatic tension is how you keep an audience hooked to the story of your play. It is about creating and maintaining an audience's involvement in the "journey" of your play. One of the main ways of creating tension is by planting questions in the "mind" of the audience.

10 Rehearsal Skills

Devising: is a method of theatre -making in which the performance originates from collaborative, often improvisatory work by a performing ensemble.

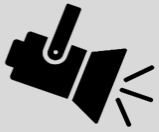
Researching: Collecting evidence for the content and moral of a performance; Includes facts, interviews and personal thought.

11 Plot Diagram



12 Props, Costume, sound and lighting effects.

Spotlights



Character

Atmosphere

Walking with Shadows by Ben Myers

13 Line Learning

When learning a script, it is important for a performer to also learn their cues . For example, a character's first line may follow a lighting change at the start of the play and even if they are on stage prior to the lighting change they must not speak until they have seen or heard their cue

14 Plot Summary

Lorna Moon is 17. She goes to school, likes parties, and lives with her mother and her little brother Jamie. Life should be pretty simple right? Except of course, for the messy divorce of her parents, and her desire to hide her growing eating disorder - oh, and the unwanted attentions of a trio of cruel bullies. And most disturbingly of all, her growing suspicion that all is not as it seems in her bedroom at home, a ghostly apparition that appears to her in her mirror. Tormented and terrified, she begins to call her own sanity into question (naturally, there are no such things as ghosts. . .) Young and vulnerable Lorna Moon has a secret. Feeling alone and with no one to turn to, she finds herself being powerfully drawn to a man whose love she should never hope to have - a man fast turning out not to be all he seems. And then there's the mysterious next-door neighbour, a reclusive, creepy old man, who knows more than he is willing to say. As this pulsating tale draws to its nerve-wracking climax, will he reveal his awful secret in time to save Lorna's life?

15 Conventions of a Play Text

Character list – a list of names.
Scene title – usually the setting, a theme or even just a number.
Stage Directions – descriptions of action placed in brackets during dialogue or in italics elsewhere.
Character Names – written in the left hand margin, often in capitals or before a colon
Dialogue – speech between characters
Scene – a moment of continuous action
Act – a grouping of scenes within a play

Year 8 Animal Farm Half Term 2 Knowledge Organiser

Key Vocabulary:

1	Allegory	A story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one.
2	Revolution	The usually violent attempt by many people to end the rule of one government and start a new one/a sudden or extreme change.
3	Exploitation	The action or fact of treating someone unfairly in order to benefit from their work.
4	Manipulation	The action of influencing or controlling someone or something to your advantage.
5	Propaganda	The spreading of ideas, information, or rumour for the purpose of helping or injuring an institution, a cause, or a person.
6	Totalitarianism	A government that has complete and utter control over society.
7	Dictatorship	A form of government in which one person or a small group possesses absolute power.
8	Oppression	Prolonged cruel or unjust treatment or exercise of authority.
9	Capitalism	An economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state.

Themes:

9 Power and Corruption

The theme of power, control and corruption is explored throughout the novel and is highlighted by the characters' relationships on the farm. Mr Jones uses his power over the animals. It is suggested that Mr Jones uses physical violence to maintain control of the animals. Many of the characters in the novel are eventually corrupted by the power they have as they manipulate their position of leadership to exploit other animals. The pigs take charge and begin to control the other animals. Napoleon uses Squealer and the dogs to stop the animals' questions about the windmill.

10 Class

Animal Farm shows how differences in education and occupation lead to the development of a class hierarchy. Through this, Animal Farm paints a picture of class struggle in which once class divisions are established, it's very difficult to change them or break them down. The animals work relentlessly and are not given the recognition they deserve. Instead, animals like Boxer, are taken advantage of and overworked until the point of exhaustion and even death.

11 Plot Summary:

The novel depicts a traditional farm — Manor Farm — which is owned by a drunk, Mr. Jones.

After the humans go to bed, the animals get together in the barn and have a meeting, where Old Major, a boar, tells them he had a dream of the animals' rebellion against man. They wish for equality and self-determination. The animals are soon given a chance to rebel when Jones is away drinking, and the farmworkers forget to feed them.

At first, life on the farm is better than it was under Jones. The farm's name is changed to Animal Farm, and the Seven Commandments are established. The animals work more efficiently, and they reap all the rewards of their labour.

Everyone has their role on the farm, and the pigs, who are the most intelligent animals, act as the brains of the operation. However, as time goes on, things begin to change, and the pigs start taking more for themselves, pushing the other animals to work harder.

At the same time, they reap the benefits, begin acting like humans, and form business relationships with the neighbouring farmers. By the end of the story, the animals of the farm are unable to tell the difference between the humans and the pigs.

Characters:

13 Old Major

An aged prize Middle White boar provides the inspiration that fuels the rebellion. He is an allegorical combination of Karl Marx, one of the creators of communism, and Vladimir Lenin, the communist leader of the Russian Revolution.

14 Mr. Jones

A heavy drinker who is the original owner of Manor Farm, a farm in disrepair with farmhands who often act idle on the job. He is an allegory of Russian Tsar Nicholas II.

15 Napoleon

An allegory of Joseph Stalin, Napoleon is the ruthless leader of Animal Farm. He takes on the persona of the humans and in particular Mr. Jones by exploiting the animals for his own selfish gain.

16 Snowball

Napoleon's rival and original head of the farm after Jones's overthrow. His life parallels that of Leon Trotsky.

17 Squealer

A small, white, fat porker who serves as Napoleon's second-in-command and minister of propaganda, is a manipulative character and cleverly and subtly uses persuasion to convince the other animals.

18 Boxer

A loyal, kind, dedicated, extremely strong, hard-working, and respectable cart-horse, although quite naive and gullible. Boxer does a large share of the physical labour on the farm and he is taken advantage of by Mr. Jones and the pigs.

Year 8 The Gothic Half Term 1 Knowledge Organiser

Key Vocabulary:

1	Genre	A style or category of literature.
2	Pathetic fallacy	Where the weather is used to create a mood and tone.
3	Foreshadowing	Where the writer warns or hints at a future event.
4	Foreboding	A feeling something bad will happen.
5	Unreliable narrator	A narrator who is not reliable or credible.
6	Conflicted mind	Where a mind is confused between multiple thoughts and perspectives.
7	Suspense	Anxiety or state of uncertainty about an outcome of a story.
8	Imagery	Language used to create a sensory experience.
9	Symbolism	An object, character or setting used to represent something else.
10	Semantic field	A group of word that have a similar theme or meaning.
11	Representation	Where a character or setting reflects something else.
12	Personification	Something non-human given a human quality.
13	Mystery	Something that is difficult to understand or explain.
14	Motif	A reoccurring symbol throughout a piece of literature.
15	Supernatural	A thing or event beyond scientific explanation.

Conventions

16 Settings

- Wild landscapes,
- Medieval style castles, churches or abbeys
- Gloomy, decayed and ruined environments
- Remote uninhabited places
- Volatile and threatening weather
- Isolated, remote, bleak.

17 Characters

- Monsters (internal and external)
- Vampires
- Werewolves
- Damsels in distress
- Ghosts
- Supernatural beings
- Murderers

18 Themes and features

- Mystery and suspense
- Fear
- Emotional distress
- Mental instability
- Psychotic episodes
- Terror
- Death and darkness
- Symbolism through colour (black/white/red)

19 History and origins

The name is a reference to Gothic architecture of the European Middle Ages, which was characteristic of the settings of early Gothic novels. The first work to call itself Gothic was Horace Walpole's 1764 novel *The Castle of Otranto*, later subtitled "A Gothic Story". The Gothic influence continued into the early 19th century, works by the Romantic poets, and novelists such as Mary Shelley, Walter Scott and E. T. A. Hoffmann frequently drew upon gothic motifs in their works. The early Victorian period continued the use of gothic, in novels by Charles Dickens and the Brontë sisters, as well as works by the American writers Edgar Allan Poe and Nathaniel Hawthorne. Later prominent works were *Dracula* by Bram Stoker, Richard Marsh's *The Beetle* and Robert Louis Stevenson's *Strange Case of Dr Jekyll and Mr Hyde*.

Key Texts

20 The Tell-Tale Heart

An unnamed narrator opens the story by addressing the reader and claiming that he is nervous but not mad. He says that he is going to tell a story in which he will defend his sanity yet confess to having killed an old man. His motivation was neither passion nor desire for money, but rather a fear of the man's evil eye. Again, he insists that he is not crazy because his cool and measured actions, though criminal, are not those of a madman. Every night, he went to the old man's apartment and secretly observed the man sleeping. In the morning, he would behave as if everything were normal. After a week of this activity, the narrator decides, somewhat randomly, that the time is right actually to kill the old man.

21 The Raven

The unnamed narrator is alone in his house on a cold December evening, trying to read. As he is about to fall asleep, he hears a quiet knock at his door, but decides to ignore it. He says that he has been reading in the hopes of relieving his sorrow over Lenore, his beloved, who has passed away. Though he tries to convince himself that nothing is there, his curiosity and fear overwhelm him. He eventually opens his door, speaking "Lenore?" into the darkness. When he hears tapping at his window, he opens that, too, and a Raven flies inside his room.

22 The Sandman

Hoffmann's *The Sandman* is the story of Nathaniel and his obsession with the Sandman. The nanny in Hoffmann's story tells Nathaniel that the Sandman is 'a wicked man, who comes to children when they won't go to bed, and throws a handful of sand into their eyes, so that they start bleeding. Although Nathaniel's mother denies the Sandman's existence, Nathaniel believes the thuds up the staircase he hears at night in their family home is the Sandman.

23 Jane Eyre

Jane Eyre is a novel written by Charlotte Brontë in 1847. The novel follows the story of Jane, a seemingly plain and simple girl as she battles through life's struggles. Jane has many obstacles in her life - her cruel and abusive Aunt Reed, the grim conditions at Lowood school, her love for Rochester and Rochester's marriage to Bertha. However, Jane overcomes these obstacles through her determination, sharp wit and courage.

YEAR 8 HALF TERM 1 – EXPLORING COASTS

Key vocab	Definition
Coastline	Where the land meets the sea.
Deposition	The dropping of material when the sea loses energy
Erosion	The breaking down of rocks
Transportation	The movement of material from one place to another
Hard rock	Rock that is more resistant to erosion
Soft rock	Rock that is eroded very quickly
Soft Engineering	The natural environment is used to help stop coastal erosion
Hard Engineering	Building structures out of wood or concrete which try to stop coastal erosion
Impact	Something that happens because of a previous action. This can be positive or negative
Prevailing wind	Wind that is continuously coming from a certain direction
Climate change	A change in long term weather patterns

Headlands	Bays
A section of hard rock jutting out into the sea that has been eroded over time.	Soft rock at the coast is eroded quicker so recedes back from the headland. A beach is formed

Headland landforms

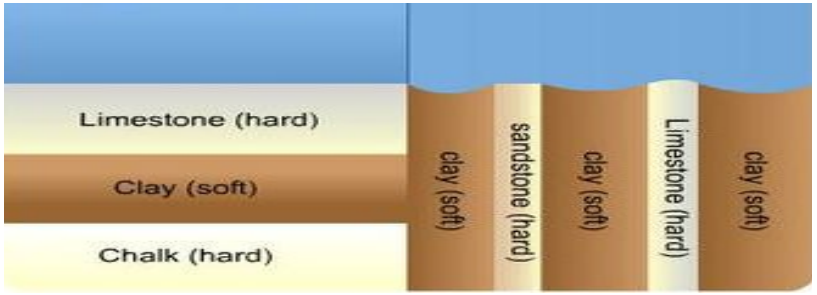
Cave
Waves attack a weakness in the cliff. The crack widens by hydraulic action and becomes deeper and hollow

Arch
The back of the cave is punched through by attrition and abrasion to create an arch

Stack
The material above the arch becomes unstable and collapses into the sea to create a stack that is no longer connected to the headland

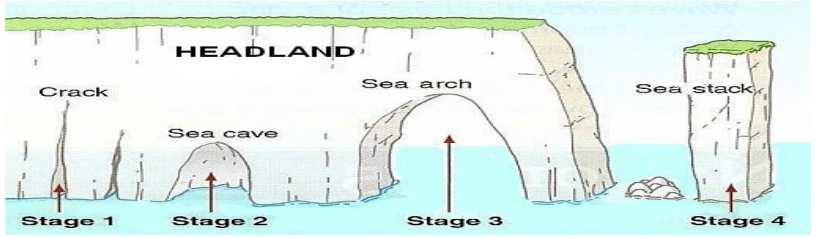
Stump
Further erosion happens on the stack to make the top unstable and smaller. This is called a stump.

Concordant coastline	Discordant coastline
Hard and soft rock types are layered horizontally. The same type of rock is along the whole length of the coastline.	Bands of hard and soft rock are layered vertically along the coastline. There are alternating types of rock the whole length of the coastline



Coastal management: Dorset

Hard engineering strategies	Soft engineering strategies
Groynes – timber or rock frames built out to sea. Trap sediment moved by longshore drift and create a wider beach. Found at Swanage	**Beach nourishment** – Sand from further along the coast is added to a beach to make it higher or wider. Found at Bournemouth, Poole and Weymouth
Rock armour – Large boulders dumped at the foot of a cliff to absorb wave energy and stop hydraulic action Found at West Bay	**Managed retreat** – Allowing low lying coastal areas to flood and become salt marshes. Salt marshes absorb all wave energy instead of the headlands
Sea walls - Concrete walls built at the foot of cliffs. Can be curved to reflect wave energy back into the sea Found a Lyme Regis	

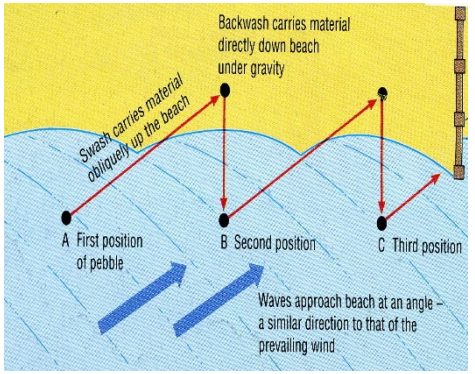


Type of erosion	Definition
Hydraulic action	The sheer power of the waves smash against the cliff. And traps air in cracks causing them to break apart
Abrasion	Pebbles grind along the rock platform, over time the rock becomes smooth.
Attrition	Rocks carried by the sea knock against each other, break apart and become more rounded.
Solution	Sea water dissolves certain types of rock such as limestone and chalk

Longshore drift

Longshore drift is a type of transportation.

- Waves approach the coastline at an angle because of the prevailing wind.
- Swash carries the material up the beach at a diagonal angle.
- Backwash then pulls beach material down towards the sea at a 90 degree angle.



Year 8 Histroy Autumn Term Knowledge Organiser Why did we kill out King?

Key Vocabulary:

1	**Monarch**	the king or queen of a country
2	**Divine Right of Kings**	the belief that God has chosen someone to be king
3	**Civil War**	War where a country splits and begins fighting itself
		A supporter of Parliament during the Civil War
4	**Parliamentarian**	A supporter of the king during the Civil War
5	**Royalist**	a nickname for a Parliamentarian
6	**Roundhead**	a nickname for a Royalist
7	**Cavalier**	a nickname for a Royal ist
4	**Treason**	a serious crime committed against the monarch/state.
5	**Executed**	When a prisoner is put to death e.g. by beheading.
6	**Catholic**	the newer and reformed version of Christianity
7	**Puritan**	the oldest and most tradition form of Christianity.

Key knowledge

8 Rump Parliament

a name given to the parliament that governed Britain from 1648 to 1653 and from 1659 to 1660, after the Long Parliament had been reduced in size

9 Royalist

1. House of Lords
2. North and West England
3. Large landowners
4. More rural
5. Led by Charles I and Prince Rupert

10 Roundheads

1. House of Commons
2. South and East England
3. Puritans
4. Merchants and townspeople

11 Was Oliver Cromwell a hero or a villain?

- He ended harsh taxes
- He ended the Civil War
- He established rules for Parliament to build on in the future.
- He reduced the power of the monarchy
- He was cruel and brutal
- He rejected religious freedom
- He didn't allow entertainment e.g. theatres

12 The execution of Charles I

He was to be tried by 135 judges who would decide if he was guilty or not. In fact only 68 turned up for the trial. Those that did not were less than happy about being associated with the trial of the king. In fact, there were plenty of MPs in Parliament who did not want to see the king put on trial but in December 1648, these MPs had been stopped from going into Parliament by a Colonel Pride who was helped by some soldiers. The only people allowed into Parliament were those who Cromwell thought supported the trial of the king. This Parliament was known as the "Rump Parliament" and of the 46 men allowed in (who were considered to be supporters of Cromwell), only 26 voted to try the king. Therefore even among those MPs considered loyal to Cromwell, there was no clear support to try Charles.

Key Knowledge

13 Economic (money)

Charles I raised taxes without the permission of Parliament and used Ship tax on himself. He bought expensive art.

14 Religious

Charles I married a catholic people were worried he would turn the country Catholic. He introduced a new prayer book in Scotland

15 Political (power)

.Charles I didn't listen to Parliament and was very arrogant and believed in the divine right of kings. He dissolved Parliament.

16 New Model Army

In February 1645, the House of Commons decided to form a new army of professional soldiers. This became known as the New Model Army. It was made up of ten cavalry regiments of 600 men each, twelve foot regiments of 1,200 men

17 Advantages and disadvantages:

Advantages:

- It is fast at sorting large amounts of data

Disadvantages:

- More complicated to code
- Uses more memory when running the algorithm

Year 8 Design and Technology Autumn Term Knowledge Organiser

Key Vocabulary:

1	Form	Form is the shape, visual appearance, or configuration of an object. In other words – how a product looks.
2	Function	An activity that is natural to or the purpose of a person or thing. In other words – how a produce works.
3	Equilibrium	The condition of a system in which all competing influences are balanced. There are three types of equilibrium: stable, unstable, and neutral.
4	Scale Models	A scale model is a physical model which is geometrically similar to an object (known as the prototype). Scale models are generally smaller than large prototypes such as vehicles, buildings. Models built to the same scale as the prototype are called mock-ups.
5	Man-Made Boards	Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together. Manufactured boards often made use of waste wood materials. Manufactured boards have been developed mainly for industrial production.
6	Design Brief	A design brief is a document for a design project developed by a person or team in consultation with the client/customer. They outline the deliverables and scope of the project; function and aesthetics, timing, budget, etc.
7	Specification	It is a list of criteria that the product needs to meet if it is to be successful.

Bottle Balance

8	Coping Saw	A coping saw is a type of bow saw used to cut intricate external shapes and interior cut-outs in woodworking or carpentry.
9	File	File (tool), a tool used to remove fine amounts of material from a workpiece.
10	Glasspaper	Glasspaper and sandpaper are names used for a type of coated abrasive that consists of sheets of paper or cloth with abrasive material glued to one face.
11	Edge Treatment	The edge treatment can affect functionality and performance. Edging is done for safety, aesthetic, functionality, cleanliness, improved dimensional tolerance, and to prevent chipping. Edging is generally described as a grinding process used to remove the sharp or raw edge of cut wood.
12	Dimension	a measurable extent of a particular kind, such as length, breadth, depth, or height.
13	Diameter	A diameter of a circle is any straight line segment that passes through the centre of the circle and whose endpoints lie on the circle.
14	Radius	A radius of a circle or sphere is any of the line segments from its centre to its perimeter, and in more modern usage, it is also their length. The name comes from the Latin radius, meaning ray but also the spoke of a chariot wheel.

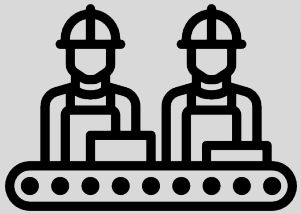
3D Design

15 **Bottle Balance - What is it?**

A unique device to display or store a bottle!

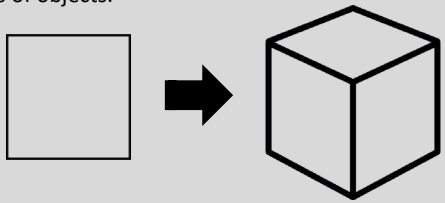
16 **Manufacture - What is it?**

A pulley is a wheel on an axle or shaft that is designed to support movement and change of direction of a taut cable or belt, or transfer of power between the shaft and cable or belt.



15 **Oblique Projection**

It is a simple type of technical drawing of graphical projection used for producing three-dimensional (3D) images of objects.



16 **Evaluation**

Designers evaluate their finished products to test whether they work well and if design can be corrected or improved. It is important to evaluate your work constantly during the project to see if it is on track and so that improvements can be built-in throughout the design process, not just at the end.

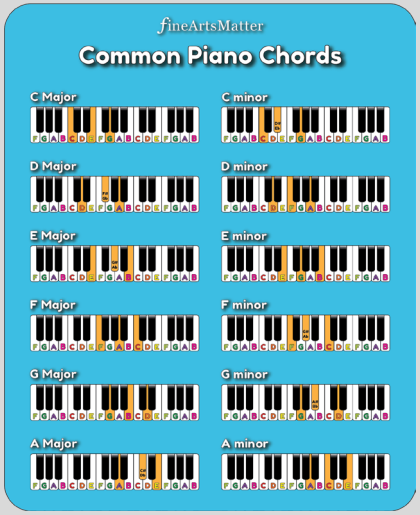
Year 8 Music Autumn Term Knowledge Organiser

Key Vocabulary:

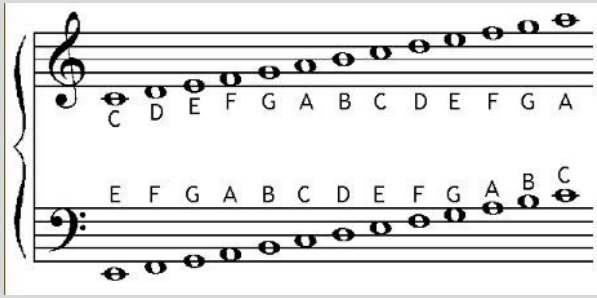
1	Melody	The main tune or musical theme
2	Articulation	How the notes are played – smooth (legato) or short (staccato)
3	Dynamics	The volume - How loud (forte) and quiet (piano) the music is
4	Ostinato	A repeated rhythm or pattern
5	Sequence	A repeated melody that rises or lowers in pitch as it repeats
6	Countermelody	A second more delicate melody over the top of the original melody
7	Theme	The main melody or rhythmic part of the music – what do you want the listener to remember!
8	Drone/Pedal	A long held note that doesn't change or a note repeated in rhythm that never changes
9	The stave	The bass and treble clef music – shows where the notes are for performance work

Music Theory

10 The keyboard - chords

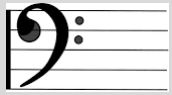


12 Music of the Stave



13 Bass Clef

Bass Clef
Played by the left hand on the left side of the piano using the lower notes



Music Theory

14 Editing on Garageband

To edit the music so it is in time you need to double click on the green recorded music. The piano roll will open below looking like the picture.

To edit in time you need to click and drag the notes to the main white lines – they are longer than the others – the first beat line is the number of the bar – 1,2,etc, the other darker lines are the other beats so 1.1, 1.2, 1.3, 1.4 etc

15 Structuring your pieces

To make your music longer you need to extend them by adding different sections of music – an introduction, first section then a contrasting second section. For the contrasting second section you could use minor chords, make the music sound faster or slower (use long notes or short ones)

What about an ending?
Repeating A then ending?

Year 8 Religion and Worldviews –Does living biblically mean obeying the whole Bible?

Key Vocabulary:

1	Gospel	The message concerning Christ, the kingdom of God, and salvation.
2	Moral	The standards of good or bad behaviour, fairness, honesty, etc. that each person believes in, rather than to laws:
3	Situation Ethics	Takes into account only the particular context of an act when evaluating it ethically, rather than judging it only according to absolute moral standards.
4	Worldview	A particular philosophy of life or conception of the world.
5	Hypocrisy	Pretending to have a virtuous character, moral or religious beliefs or principles.
6	Conscience	A person's moral sense of right and wrong, viewed as acting as a guide to one's behaviour.

1 Gospels

The Bible is a collection of books by a range of different authors who each had their own purpose, aims and context within which they were writing.

The main aim of the Bible is to inform people about:

God
God's laws
God's teachings
God's salvation

2 The Importance of the Bible

The Christian holy book is the Bible and this is the most important source of authority for Christians, as it contains the teachings of God and Jesus Christ.

3 When it comes to finding out about or understanding something, or making decisions about what to do, most people have various sources of authority they can go to for guidance and help.

4 Many Christians also rely on tradition for guidance. The Christian Church has existed for two thousand years and many traditions and practices have developed over the years which people find reliable and helpful. Tradition must be supported and reinforced by the teachings in the Bible.

5 All Christians, regardless of denomination, regard the Bible as the starting point for guidance about their faith. It contains 66 different books and is split into the Old Testament and the New Testament.

3 Key Teachings

Matthew 7:12 - So in everything, do to others what you would have them do to you, for this sums up the Law and the Prophets.

Matthew 22:37-39 - Jesus replied: "'Love the Lord your God with all your heart and with all your soul and with all your mind. This is the first and greatest commandment. And the second is like it: 'Love your neighbor as yourself.'

Leviticus 19:34 - The foreigner residing among you must be treated as your native-born. Love them as yourself, for you were foreigners in Egypt. I am the Lord your God.

Psalms 112:1 - Praise the Lord. Blessed are those who fear the Lord,who find great delight in his commands.

4 Why a Christian would follow the Bible to make a moral decision.

The Bible is the word of God and so is God's guidance to humans about how to make decisions.

The Bible contains God's teachings on how Christians should behave.

The Ten Commandments, for example, gives very clear guidance on such as; "You shall not kill. You shall not steal"

The Bible records events in the life of Jesus. This means many Christians ask themselves how Jesus would behave in this situation and then follow his example.

5 *"Love thy neighbour"*

Jesus taught that there is nothing extraordinary about loving your friends – anyone should be able to do that. It is far harder to "love your enemies and pray for those who persecute you", which is the standard Jesus now wants his followers to aim for.

In these verses, Jesus is describing agape - this is a practical love requiring effort. It is based on respect for all people. It is the love shown by God for all of humanity.

"You have heard that it was said, 'Love your neighbour and hate your enemy.' But I tell you, love your enemies and pray for those who persecute you … If you love those who love you, what reward will you get?...Be perfect, therefore, as your heavenly Father is perfect."

Matthew 5:43-48

6 Situation Ethics

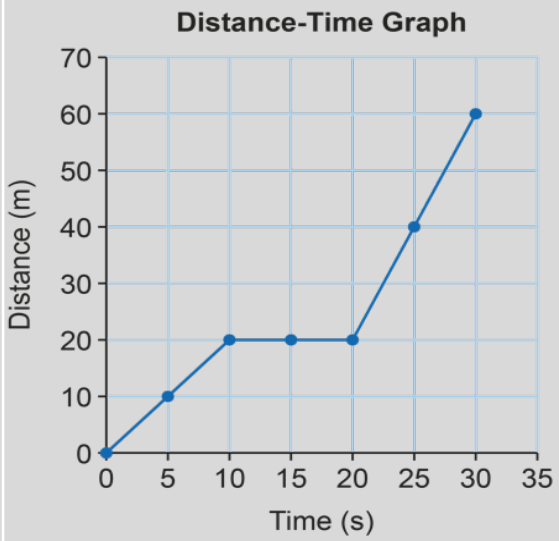
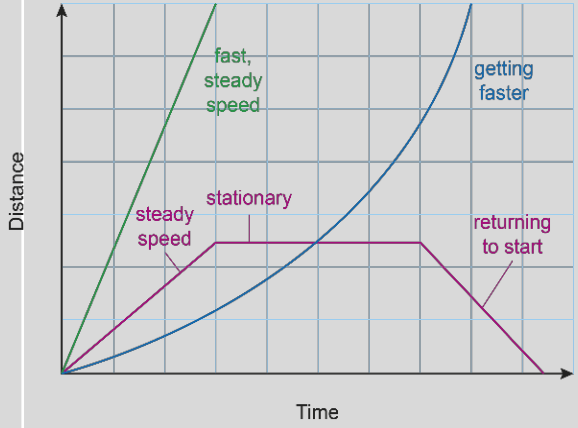
Situation ethics is a theory where the situation is taken into account first, before deciding on the rules of right and wrong. There is no set of rules, because what might be considered immoral in one situation could be considered the most moral thing to do in another.

Year 8 Science Autumn Term Knowledge Organiser – Movement and Pressure

Speed

1	Speed is how much distance is covered per unit time
2	Speed = Distance/Time
3	The SI unit for speed is m/s
4	If an object is stationary its speed is 0 m/s
5	Average speed is the overall distance divided by the overall time taken for a journey $Speed = \frac{Distance}{Time}$ $Time = \frac{Distance}{Speed}$ $Distance = Speed\ x\ Time$
6	Relative motion describes how different observers judge speed differently if they are in motion too
7	If an observer is stationary, the relative motion of the moving object will be the same as its actual speed
8	If an observer is travelling in the same direction as the moving object, the relative motion is the difference in their speeds and the object will seem to be moving more slowly
9	If an observer is travelling in the opposite direction as the moving object, the relative motion is their speeds added together and the object will seem to be moving faster
10	Acceleration describes how quickly a speed is changing (either speeding up or slowing down)
11	An object speeding up has positive acceleration
12	An object slowing down has negative acceleration
13	Acceleration can also refer to a change in direction

Distance-Time Graphs

14	A distance-time graph can be used to describe an object's motion 
15	A horizontal line represents a stationary object (speed = 0m/ s)
16	A straight line represents an object moving at constant speed
17	The gradient of a distance-time graph represents speed
18	The steeper the gradient the greater the speed
19	A line returning to the x-axis represents an object returning to its starting position
20	A curved line represents an object accelerating 

Pressure

21	Pressure is the force applied per unit area.
22	Pressure (N/m^2) = Force (N)/ area (m^2)
23	Pressure is increased by a smaller area and decreased by larger area
24	Pressure is increased by a larger force and decreased by a smaller force $p = F / A$ $F = p \times A$ $A = F / p$

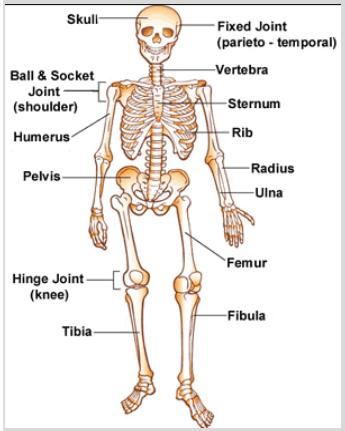
Year 8 Science Autumn Term Knowledge Organiser – Tissues and Organs

Key Vocabulary:

1	**Alveoli**	Small air sacs found at the end of each bronchiole. Alveoli are the site of gas exchange with blood.
2	**Antagonistic pair**	Two muscles which carry out opposite actions at the same time to bring about a change in movement.
3	**Cilia**	Microscopic hairs that line the inside of the trachea and bronchi.
4	**Diaphragm**	Sheet of muscle that sits under the lungs and ribcage.
5	**Diffusion**	The net movement of particles from a region of higher concentration to a region of lower concentration.
6	**Epithelial cells**	A type of cell found on the surfaces of organs. *There is a layer of **epithelial cells** on the surface of the skin that act as a barrier.*
7	**Exhalation**	The process of breathing out.
8	**Inhalation**	The process of breathing in.
9	**Respiration**	A chemical reaction that releases energy mitochondria.
10	**Trachea**	A tube that carries air from the mouth and nose, to and from the lungs. (Also called the **windpipe**)
11	**Depressant**	A drug that slows down the nervous system.
12	**Hallucinogen**	A drug that affects the brain, causing hallucinations and changes a person's perception of reality.
13	**Stimulant**	A drug that affects the nervous system, causing increased alertness and activity.

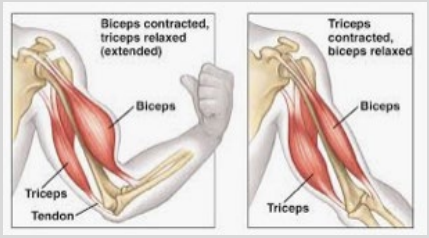
Organ Systems

14 Skeletal System



2. The skeleton is made up of bones. It has 4 important functions:
- to support the body and give it shape
- to protect the internal organs
- to allow body movements
- to produce blood cells

15 Antagonistic Muscles



6. Antagonistic muscles work in pairs.
7. An example of antagonistic muscles is the biceps and triceps.

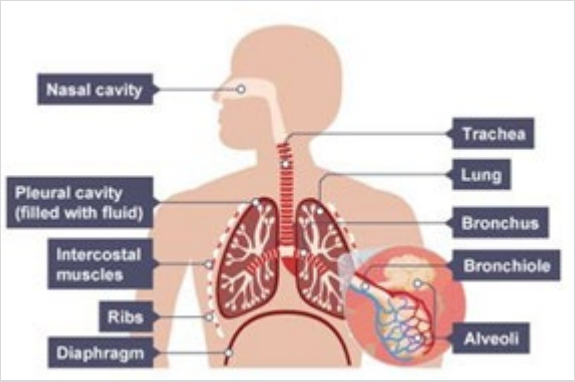
16 Drugs

- A drug is any substance that has an effect on the body
- A drug taken to treat an illness is called a medicine.
- Recreational drugs are taken by people for enjoyment. They can often be addictive
- Drugs are classified as illegal if they cause serious harm to the body.
- Opium-related painkillers cause feelings of pleasure and trance state.
- Hallucinogens cause 'out of body' experiences and mood swings

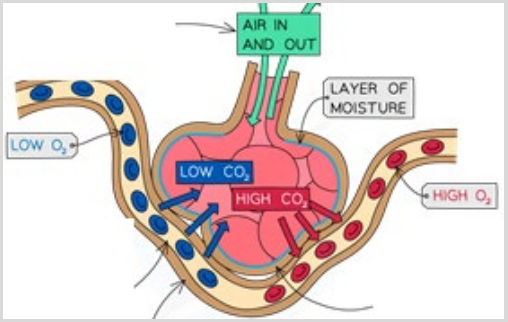
Organ Systems

17 The Respiratory System

Air enters the body through the nose and mouth. It then travels down the windpipe (trachea), through a bronchus then a bronchiole into an alveolus. Oxygen diffuses into the blood at the alveoli.



18 The Alveoli and Gas exchange



The alveoli provide an efficient exchange surface because:

a) The walls are thin, made of just one layer of epithelial cells
b) They have a large surface area: There are lots of them and they are spherical in shape
c) They have a good blood supply: There are lots of blood capillaries wrapped around them.
d) They are moist, which helps gases to diffuse across more easily.

Year 8 Acids & Alkalis. Science Autumn Term

Key Vocabulary:

1	Acid	A substance which has a pH lower than 7.
2	Alkali	A base which is soluble in water.
3	Base	A substance that has a pH value of greater than 7 and can neutralise an acid.
4	Corrosive	A substance that can cause irreversible damage when touched. *Some common **corrosives** include hydrochloric acid, sulphuric acid, ammonium hydroxide, and sodium hydroxide.*
5	Indicator	A substance that changes colour to show whether a solution is acid or alkaline. *Universal indicator and Litmus paper are examples of **indicators**.*
6	Neutralisation	A chemical reaction that occurs when an alkali reacts with an acid to produce a neutral solution.
7	pH Scale	The reference frame used to determine whether a solution is acidic, alkaline or neutral. *The **pH scale** is a measure of the acidity or alkalinity of a substance.*

8 The pH Scale

Substances can be classified into acidic, alkaline and neutral solutions

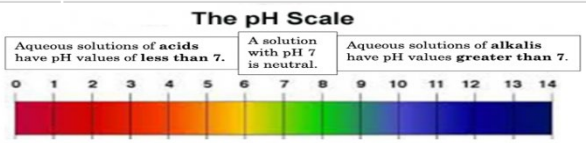
The pH scale, from 0 to 14, is a measure of the acidity or alkalinity of a solution

The pH scale can be measured using litmus, universal indicator or a pH probe.

A solution with pH 7 is neutral.

Aqueous solutions of acids have pH values of less than 7

Aqueous solutions of alkalis have pH values greater than An aqueous solution is any solution in which the solvent is water



9 Litmus Indicator

Litmus indicator is red in an acidic solution.

Litmus indicator is blue in an alkaline solution.

Litmus indicator remains the same colour in a neutral solution

To remember this, it might be helpful to memorise the rhyme
Blue to red, acid is said
Red to blue, acid untrue

10 Universal Indicator

Universal indicator is sometimes called UI

Universal indicator can be used as a liquid solution or as paper strips to dip into a solution.

Acids will turn universal indicator red or orange.

Neutral solutions will turn universal indicator green.

Alkaline solutions will turn universal indicator blue or purple.

11 Neutralisation

In neutralisation reactions an acid reacts with an alkali to form a salt and water.

Neutralisation forms a neutral (pH7) solution.

A salt is a metal compound made from acid.

A salt is formed when the hydrogen in an acid is replaced by a metal.

Acids + alkali/base → salt + water
Acronym: A + A/B → S + W

12 Metal Carbonates

Metal carbonates react with acids in neutralisation reactions to form a salt, water and carbon dioxide

In an open system these products can escape, and the system is neutral

In a closed system carbon dioxide reacts with water to form carbonic acid, which makes the system acidic

Year 8 Changing Substances Science Autumn Term

Key Vocabulary:

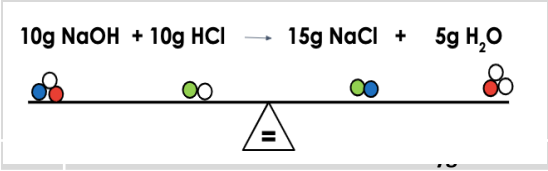
1	**Atom**	The smallest particle of an element that can exist. *The element magnesium is made up of only magnesium **atoms**.*
2	**Chemical formula**	The symbols that show how many of each type of atom are present in an element or compound. *The **chemical formula** for water is* H_2O**.**
3	**Chemical change**	A chemical reaction where a new substance is formed. *A **chemical change** takes place when magnesium reacts with oxygen.*
4	**Combustion**	A high temperature reaction with oxygen (burning). *The **combustion** of magnesium produces magnesium oxide.*
5	**Compound**	A substance made up of two or more elements chemically bonded together. *Carbon dioxide is a **compound** because it is made up of carbon and oxygen chemically bonded together.*
6	**Conservation of mass**	The law that says atoms cannot be created or destroyed in a chemical reaction so the total mass of products is equal to the total mass of reactants. *According to the law of **conservation of mass**, the mass of magnesium oxide product will be equal to the mass of oxygen and magnesium reactants.*
7	**Oxidation**	The gain of oxygen. *When magnesium burns in oxygen, it is an **oxidation** reaction.*

8 Chemical and Physical Changes

A chemical change produces a new substance whereas in a physical change no new substance is produced.
A chemical change is irreversible whereas a physical change is reversible.
Melting, evaporating, condensing, freezing and sublimation are examples of physical changes because they only change the ***state* (solid, liquid or gas) of the substance.**
These processes only change the energy that each particle has (how much it moves) and not its arrangement or properties (e.g. its boiling or melting point).

9 Chemical Reactions

A chemical change can also be called a chemical reaction.
The number and type of atoms do not change in a chemical change and are only rearranged.
The total overall mass is conserved in a chemical change (the mass of the reactant is equal to the mass of the products).
Every reactant atom will become a product atom.
Extra atoms cannot be made, and atoms cannot disappear.



Metals react with oxygen to produce metal oxides.
The general equation is: Metal + oxygen à Metal oxide
Example 1: Copper + oxygen → copper oxide
Example 2: Lithium + oxygen → lithium oxide
These reactions are oxidation reactions because the metals gain oxygen
Reduction is the loss of oxygen
Oxidation is the gain of oxygen

11 Reactions of Metals with Acid

Acids react with some metals to produce salts and hydrogen
Metal + acid à salt + hydrogen
This can be remembered by MASH: Metal + Acid → Salt + Hydrogen
Example 1:
Copper + Hydrochloric acid → copper chloride + hydrogen
Example 2:
Sodium + Nitric Acid à sodium nitrate + hydrogen

12 Reactions of Acids with Alkalis, Bases and Metal Carbonates

Acids are neutralised by alkalis (e.g. soluble metal hydroxides) and bases (e.g. insoluble metal hydroxides and metal oxides) to produce salts and water,
Acid + alkali →salt + water
Acid + base → salt + water
Acids are neutralised by metal carbonates to produce salts, water and carbon dioxide.
Acid + metal carbonate → salt + water + carbon dioxide
The particular salt produced in any reaction between an acid and a base or alkali depends on the acid and metal in the base, alkali or carbonate
Hydrochloric acid produces chloride salts,
nitric acid produces nitrate salts,
and sulfuric acid produces sulfate salts

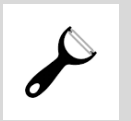
13 Tests for Gases

The test for hydrogen uses a burning splint held at the open end of a test tube of the gas. Hydrogen burns rapidly with a squeaky pop sound.
The test for carbon dioxide uses a solution of calcium hydroxide (limewater).
When carbon dioxide is shaken with or bubbled through limewater the limewater turns milky (cloudy)

Year 8 Food Technology Autumn Term Knowledge Organiser

Key Vocabulary: The Eatwell Guide		
1	The Eatwell Guide	
2	Fruit and vegetables.	
3	Potatoes, bread, rice, pasta or other starchy carbohydrates.	
4	Dairy and alternatives.	
5	Beans, pulses, fish, eggs, meat and other protein.	 
6	Oil and spreads.	
7	Foods high fat, salt and sugar.	

Key Vocabulary: Nutrition		
1	Energy	The power the body requires to stay alive and function.
2	Digestion	The process by which food is broken down in the digestive tract to release nutrients for absorption.
3	Macronutrients	Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.
4	Micronutrients	Nutrients which are needed in the diet in very small amounts.
5	Sedentary activity	Requires little energy expenditure and includes sitting or lying down to watch television, use the computer, read, work or study, and sitting when travelling to school or work.
6	Moderate activity	Food made with ingredients from more than one food group.
7	Vigorous activity	Makes you breathe hard and fast.
8	Stages of digestion	• Ingestion • Digestion • Absorption • Elimination

Key Vocabulary: Cooking		
1	cut, slice and chop	
2	grate	
3	peel	
4	mix and combine	
5	use the grill	
6	use the hob	
7	use the oven	

Year 8 Maths - Autumn Term Knowledge Organiser - Solving Problems with multiplication and division

Key Vocabulary:

1	Multiply	The result of multiplying a number by an integer. The times tables of a number
2	Product	The result of a multiplication calculation.
3	Multiples:	Found by multiplying any number by positive integers
4	Factor	Integers that multiply together to get another number.
5	Quotient	The result of a division
6	Divisor	The number we divide by
7	Mean	The average of the all values, whereby all of the values are added together and then divided by the number of values.
8	Equivalent	Something that is essentially the same or equal to something else

9 Factors

A number that divides exactly into another number without a remainder. It is useful to write factors in pairs

Factors of 10
1, 2, 5, 10

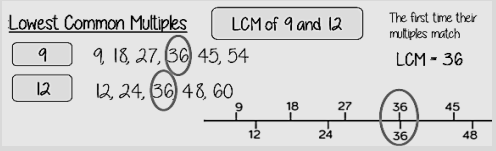
The number itself is always a factor

Factors of 4
1, 2, 4

Factors of 36
1, 2, 3, 4, 6, 9, 12, 18, 36

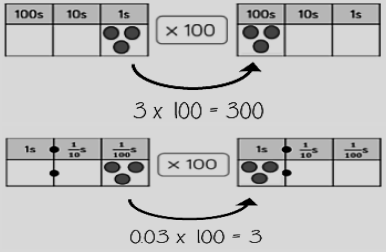
10 Multiples

The result of multiplying a number by an integer. The times tables of a number



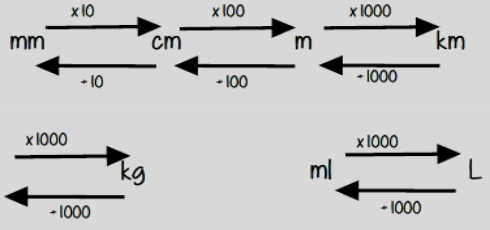
11 Multiply and divide integers and decimals by powers of 10

A number that divides exactly into another number without a remainder. It is useful to write factors in pairs



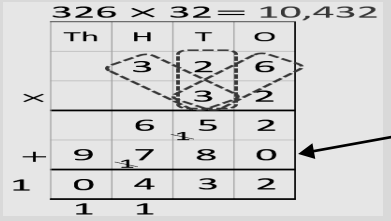
12 Convert metric units

When we convert from big unit to small unit we multiply and if we convert from small unit to big unit we divide.



13 Use formal methods to multiply integers

Long multiplication column



Make the unit 0 then carry on multiplying

14 Use formal methods to multiply decimals

Multiply 0.03 by 1.1= 0.033
Multiply 0.03 by 1.1= 0.033

the answer should have the same number of decimal places as are in both the numbers you are multiplying.

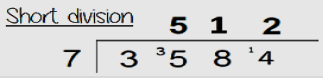
Multiply without decimal points: 3 × 11 = 33

0.03 has 2 decimal places, and 1.1 has 1 decimal place, so the answer has 3 decimal places: 0.033

15 Use formal methods to divide integers and decimals.

3584 ÷ 7 = 512

Short division



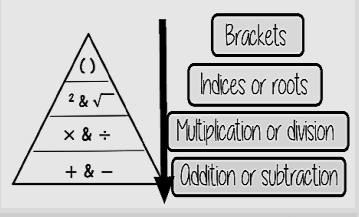
Division with decimals

The placeholder in division methods is essential –the decimal lines up on the dividend and the quotient

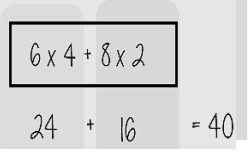
24 ÷ 0.02 → 24 ÷ 0.2 → 240 ÷ 2

All give the same solution as represent the same proportion .Multiply the values in proportion until the divisor becomes an integer.

16 Order of operations



Break down the calculation using the order of operations.



Year 8 Maths Autumn Term Knowledge Organiser - Addition & subtraction of fractions

Key Vocabulary:

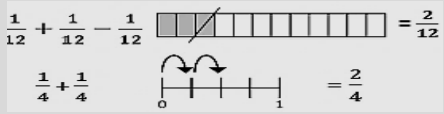
1	Denominator	The number below the line on a fraction. The number represent the total number of parts
2	Numerator	The number above the line on a fraction. The top number. Represents how many parts are taken.
3	Divide	To separate into parts
4	Greater than	To be more than or have more value than another number
5	Less than	To be smaller than or have a smaller value than another number.
6	Mixed number:	A number with an integer and a proper fraction
7	Improper fractions	A fraction where the numerator is greater than the denominator.
8	Unit fraction	A fraction where the numerator is one
9	Whole	An integer or when the numerator is the same value as the denominator.
10	Equivalent	Something that is essentially the same or equal to something else, but might have a difference in how it is represented.

11 Representing Fractions

$\frac{1}{4}$ is represented in all the images

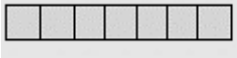
12 Add/Subtract unit fractions

With the same denominator ONLY the numerator is added or subtracted



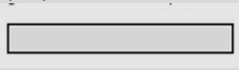
13 Mixed numbers and fractions

An improper fraction has a numerator which is greater than the denominator. For example:



$\frac{7}{5}$ Improper fraction

A mixed number is made up of an integer and a proper fraction. For example:



$1\frac{2}{5}$ Mixed number

Fractions can be bigger than a whole

To convert between improper fractions and mixed numbers, we need to look at how many parts make up the whole.

The bar models show $\frac{13}{6}$.

There are 6 parts in the whole.

$13 \div 6 = 2$ remainder 1

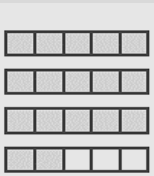
$\frac{13}{6} = 2\frac{1}{6}$

The bar models show $3\frac{2}{5}$.

There are 5 parts in the whole.

$3 \times 5 = 15$

$\frac{15}{5} + \frac{2}{5} = \frac{17}{5}$



14 Adding or Subtracting Fractions

Find the LCM of the denominators to find a common denominator. Use equivalent fractions to change each fraction to the common denominator. Then just add or subtract the numerators and keep the denominator the same

$\frac{2}{3} + \frac{4}{5}$

Multiples of 3: 3, 6, 9, 12, 15..

Multiples of 5: 5, 10, 15..

LCM of 3 and 5 = 15

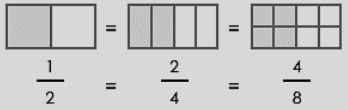
$\frac{2}{3} = \frac{10}{15}$

$\frac{4}{5} = \frac{12}{15}$

$\frac{10}{15} + \frac{12}{15} = \frac{22}{15} = 1\frac{7}{15}$

15 Understand and use equivalent fractions.

Equivalent fractions have different numerators and denominators but share the same value.



$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

16 Add and subtract proper fractions and mixed numbers.

Use the bar models to help you work out the calculation.

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$

$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

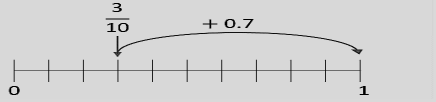
17 Use equivalence to add and subtract decimals and fractions

Example: Convert decimal to equivalent fraction 0.7 to 7/10 then add these fraction together.

$\frac{3}{10} + 0.7$

$0.3 + 0.7 = 1$

$\frac{3}{10} + \frac{7}{10} = \frac{10}{10} = 1$



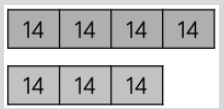
Year 8 Mathematics Knowledge Organiser – Ratio and Scale

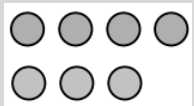
Key Vocabulary:

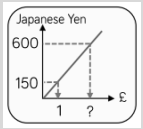
1	Ratio	Used to compare values; says how much of thing there is, compared to another thing.
2	Proportion	When two ratios or fractions are equal to each other.
3	Multiplier	The number that we are multiplying by.
4	Placeholder	Something that holds a place in a number, e.g. zero.
5	Factors	Numbers that we can multiply together to get another number. Numbers that go into another number.
6	Equivalent	Having the same value.
7	Scale	The relationship/ratio between two sets of measurements.
8	Circumference	The perimeter (the distance around the outside) of a circle.
9	Diameter	The distance from one point on a circle to another point on a circle, through the centre. The longest distance across the circle.

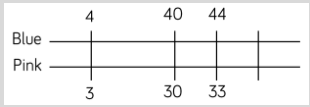
10 Representing Ratios

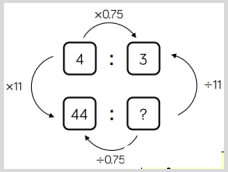
Ratios can be represented in many different ways:











11 Ratio Notation

Ratios are represented as numbers with colons in between, for example 3:1.
The order of the numbers in the ratio is always important; this tells us what the information is about.
Most ratios have two parts, but ratios can have more than two parts, for example 2:3:1.

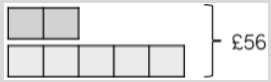
12 Solving Problems in the Ratio 1:n

The ratio 1:n means any ratio beginning with 1, followed by any number, for example 1:1, 1:4, 1:200 etc.
n can be any number, including decimals, but for this topic, n will always be an **integer** (a whole number).

13 Dividing Values into Given Ratios

We can use a bar model to help us understand how to divide values into a given ratio.

Example
Share £56 in the ratio 2:5.



There are 7 parts altogether, so we can share the £56 into these 7 parts by doing 56 ÷ 7 = 8.

Now we know that 1 part = £8, we can work out how much 2 parts are (2 x 8 = £16) and how much 5 parts are (5 x 8 = £40).

We can check our answer is correct by adding together our amounts and seeing if we get our original value: 16 + 40 = 56, so we are correct.

14 Expressing Ratios in Simplest Form

We can simplify ratios by finding **factors** in all parts of the ratio.

Example
Simplify the ratio 12:18.
We know the highest **factor** of both 12 and 18 is 6, so we can divide both numbers by 6.
12 ÷ 6 = 2
18 ÷ 6 = 3
So, the simplified ratio is 2:3.
(Remember, the order is important, this shouldn't change!)

15 Comparing Ratios and Fractions

We can use representations (like those in section 8) to help us compare ratios and fractions.

Example

Ratio	*Fraction*
Red : Yellow	$\frac{2}{7}$ are red
2 : 5	$\frac{5}{7}$ are yellow

16 Understanding π as a Ratio

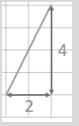
π is a number that represents the ratio of the **circumference** of a circle to the **diameter** of a circle, so $\pi = \frac{C}{d}$.
This can be rearranged to find the formula for the **circumference** of a circle: $C = \pi \times d$.
We can substitute values of the **diameter** into this formula to calculate the **circumference** of any circle.

Example
The radius of a circle is 8m. Find the circumference.
C = π x 8 = 25.132… m^2

17 Understanding Gradient as a Ratio

Gradient (or slope) describes how steep a line is.
We can calculate the gradient of a line using the ratio of width : height of a triangle.
Once we make the width equal 1, the height tells us the gradient of the line.

Example
Here the width : height ratio is 2:4.
This can be simplified to 1:2.
The width is 1, and the height is 2, so the gradient is 2.



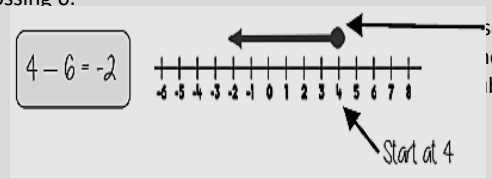
Year 8 Maths - Knowledge Organiser - Operations and equations with directed number - Autumn Term

Key Vocabulary:

1	Positive	A value greater than zero.
2	Negative:	A value less than zero.
3	Ascending	An arrangement of values from smallest to largest.
4	Descending	An arrangement of values from largest to smallest.
5	Increase	To become greater in value.
6	Decrease	To become less in value.
7	Add	To bring two or more numbers together.
8	Subtract	To take away a number(s) from another number.
9	Minus	To take away a number(s) from another number. (The same as to subtract.)
10	Zero Pair	When a set of two numbers that sum zero.
11	Square Root	A factor of a number that, when multiplied by itself, gives the original number, eg 4 is the square root of 16.
12	Power	A base number raised to an exponent, where the base number is the factor that is multiplied by itself and the exponent denotes the number of times the base number is multiplied.

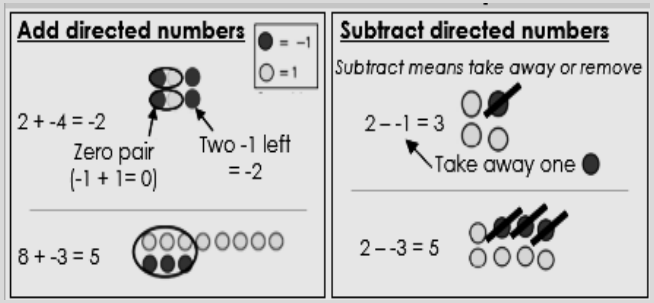
13 Understand and use representations of directed numbers

Number lines are useful to help you visualise the calculation crossing 0.

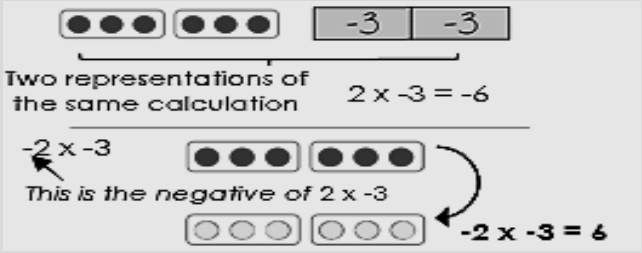


se the number
e to guide
btraction of 6

14 Add and subtracting negative numbers



15 Multiply and Divide directed numbers



16 Evaluate algebraic expressions

With negative numbers the brackets are important so that it performs -4 x -4

$a = 5$

$a^2 = 5^2$

$a^2 = 25$

$b = -4$

$b^2 = (-4)^2$

$b^2 = 16$

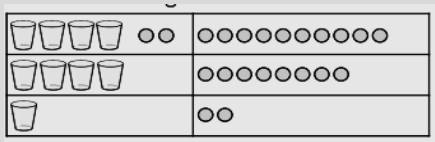
Substituted accurately and maintained the correct order of calculations throughout.

Brackets around negative substitutions helps remove calculation errors

$2a - b = 2 \times 5 - (-4) = 10 + 4 = 14$

17 Solve two-step equations

Use the bar model to write an equation and solve it to find the unknown value.
How does the diagram connect to the calculation?



$$\begin{aligned} 4x + 2 &= 10 \\ -2 \quad & \quad -2 \\ 4x &= 8 \\ \div 4 \quad & \quad \div 4 \\ x &= 2 \end{aligned}$$

18 Roots of positive numbers

Understanding square roots

A square number comes from multiplying a number by itself.

4 x 4 =16 therefore 16 is a square number.
16 though also has another square root, this is because:
-4 x -4 =16
Every number has a positive and negative square root.

What is the inverse of squaring a number?

The inverse of squaring a number is to find the square root of a number.

$4^2 = 16$ $(-4)^2 = 16$

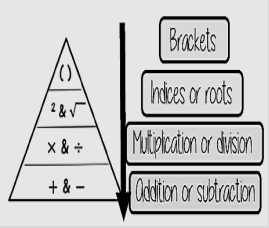
$\sqrt{16} = 4$ and -4

Remember square root have a positive and negative e value.

$\sqrt{10}$
3.162277 ...

19 Order of Operations (BIDMAS)

This is the order in which we do calculations:
Brackets
Indices
Division or Multiplication
Addition or Subtraction



REMEMBER
If you have a calculation that only has addition and subtraction, you go from left to right. The same applies if you only have division or multiplication.

Mi vida-Year 8 Todo sobre mi vida

1. Key Vocabulary / grammar

Present

Chateo con mis amigos – I chat with my friends
Comparto mis vídeos favoritos – I share my favourite videos
Descargo melodías o aplicaciones – I download ringtones or apps
Hablo por Skype – I talk on Skype
Juego – I play
Leo mis SMS – I read my texts
Escribo SMS – I send texts
Saco fotos – take photos
Veo - I watch
Salgo con mis amigos – I go out with my friends
Voy al cine – I go to the cinema
Hago mis deberes – I do my homework

Past

Chateé con mis amigos – I chatted with my friends
Compartí mis vídeos favoritos – I shared my favourite videos
Descargué melodías o aplicaciones – I downloaded ringtones or apps
Hablé por Skype – I talked on Skype
Jugué - I played
Leí mis SMS – I read my texts
Escribí SMS – I wrote texts
Saqué fotos – I took photos
Vi – I watched
Salí con mis amigos – I went out with my friends
Fui al cine – I went to the cinema
Hice mis deberes – I did my homework

4. Let's show off

Siempre me ha gustado ver/escuchar – I've always liked watching/listening to…

Cuesta un ojo de la cara – it costs an arm and a leg

Lo bueno es que… -

The good thing is that

Lo malo es que… - the bad thing is that

2. Adjectives

educativo – educational
gracioso - funny
informativo - informative
importante - important
inútil - pointless
interesante - interesting
estúpido/tonto – stupid/silly
útil - useful
entretenido - entertaining
pueril/infantil - childish
aburrido - boring
impresionante - impressive
bueno / malo – good/bad
emocionante – exciting

3. Music

Escucho de todo – I listen to everything
Escucho la música de… - I listen to ____'s music
Escucho… - I listen to…
El rap - rap
El R 'n' B - RnB
El rock - rock
La música clásica - classical music
La música electrónica – electro music
La música pop – pop music
La música Latina – Latin music
La música de los años sesenta – 60s music
Me gusta… - I like
La letra – the lyrics
La melodía – the tune
El ritmo – the rhythm
…**canta bien** - …sings welL

4. TV

Un programa de deportes – a sports programme
Una comedia – a comedy
Un concurso – a gameshow
Un documental – a documentary
Un reality – a reality show
Una serie policíaca – a police series
Un dibujo animado – a cartoon
Una telenovela – a soap
El telediario – the news

Una película de terror – a horror film
Una película de amor – a love/romantic film
Una película de guerra – a war film
Una película de acción – an action film
Una película de ciencia-ficción – a sci-fi film

5. Parallel Text:

1	Normalmente chateo con mis amigos o	Normally I chat with my friends or
2	saco fotos con mi móvil.	I take photos with my mobile.
3	Nunca juego en línea pero siempre	I never play online but always
4	comparto mis vídeos favoritos por Snapchat	I share my favourite videos on Snapchat
5	pero ayer escuché música.	but yesterday I listened to music.
6	Escucho música pop porque es entretenida,	I listen to pop music because it's entertaining,
7	pero a veces las letras son tristes.	but sometimes the lyrics are sad.
8	Sin embargo, odio la música de los años sesenta	However, I hate 60's music
9	porque es un poco aburrida.	because it's a bit boring.
10	Además, ayer vi un docuemental en la tele	In addition, yesterday I watched a documentary on the TV
11	y fue muy educativo	and it was very educational
12	pero normalmente me gusta ver las películas de acción	but normally I like to watch action films
13	porque son emocionantes.	because they are exciting.
14	La semana pasada fui al cine	Last week I went to the cinema
15	para ver una película de amor.	to watch a romance film.
16	Me encanta ir al cine pero cuesta un ojo de la cara.	I love going to the cinema but it costs an arm and a leg.
17	¡Qué pena!	What a shame!

Mi vida-Year 8-Mis vacaciones

Key Vocabulary / grammar

1

Present
Voy – I go
Vas – you go
Va – he/she goes
Vamos – we go
Vais – you(pl) go
Van – they go

Past
Fui – I went
Fuiste – you went
Fue – he/she went
fuimos- - we went
Fuisteis – you(pl) went
Fueron – they went

a… - to…
Escocia – Scotland
Gales – Wales
Italia – Italy
Grecia – Greece
Egipto – Egypt
Irlanda – Ireland
Alemania – Germany
Estados Unidos – USA

Con… - with

En… - by
Avión – plane
barco – boat
Autobús – bus
autocar – coach
Tren – train
coche – car

Let's show off

4

Acabo de ir a… - I have just been to…
Siempre he soñado con ir a… - I've always dreamed of going to…
Ojalá pudiera ir a… - I wish I could go to…
Cuesta un ojo de la cara – It costs an arm and a leg
El hotel era… - the hotel was…
El hotel tenía… – the hotel had…

Opinions

2

Fue… - it was

Guay – cool
Flipante – awesome
Genial - great
Regular - ok
Horroroso - terrible
Un desastre – a disaster
Raro – strange/weird

¡Lo pasé bomba! – I had a fantastic time
¡Lo pasé fenomenal! – I had a wonderful time
¡Lo pasé guay! – I had a great/cool time
Lo pasé mal – I had a bad/terrible time

Activities

3

El primer día - On the first day
El ultimo día – on the last day
Primero – first
Luego – then
Después – after
Más tarde - later

Visité monumentos – I visited monuments
Compré una camiseta – I bought a t-shirt
Saqué fotos – I took photos
Monté en bicicleta – I rode a bike
Descansé en la playa – I relaxed on the beach
Mandé SMS – I sent a message
Bailé – I danced
Nadé en el mar – I swam in the sea
Tomé el sol – I sunbathed
Escribí SMS – I wrote messages
Comí una paella – I ate paella
Bebí una limonada – I drank a lemonade
Conocí a un chico guapo – I met a good-looking boy
Salí con mi hermana – I went out with my sister
Vi un castillo interesante – I saw an interesting castle

5. Parallel Text:

1	El año pasado fui a España de vacaciones	Last year I went to Spain
2	Fui con mi familia y fuimos en avion	I went with my family and we went by plane
3	Luego fui en coche y luego en barco. ¡Qué rollo!	I went by car and then by boat. How annoying!
4	El primer día descansé en la playa y luego escuché música	On the first day I relaxed on the beach and then I listened to music
5	Más tarde monté el bici y saqué muchos fotos y fue flipante	later on I rode my bike and took lots of photos and it was great.
6	Otro día, por la mañana, tomé el sol.	On an other day, by the morning, I sunbathed.
7	El ultimo día nadé en el mar porque hizo calor. (¡Lo pasé bomba!)	On the last day I swam in the sea because it was hot. I had a fantastic time. (I had a blast!)
8	Por la mañana visité monumentos y vi un castillo interesante. ¡Qué divertido!	In the morning I visited sights and I saw an interesting castle.What fun!
9	Por la tarde salí con mi hermano y comí paella	In the afternoon I went out with my brother and I ate paella
10	Hice amigos. ¡Fue estupendo!	I made friends. It was amazing
11	Mis vacaciones fueron guay	My holidays were cool
12	Porque hizo buen tiempo.	Because it was good weather.
13	Me encantó.	I loved it.
14	pero comí algo mal, vomité. ¡Qué desastre!!	but I ate something bad,I was sick. What a disaster!
15	Perdí mi pasaporte también.	I lost my passport also.