

# Year 7 Computing Knowledge Organiser – History Of Computing

## Cryptography

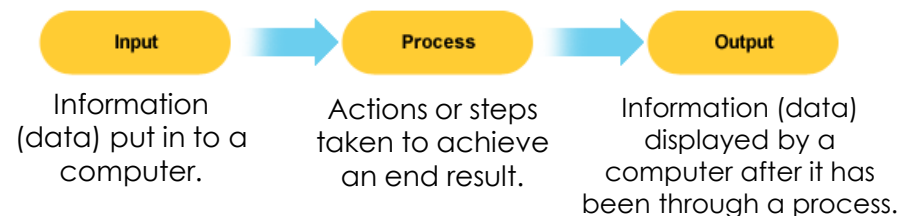
- Cryptography is derived from the Greek word 'kryptos' which means hidden or secret
- Cryptography is thought to date back to the Egyptians and their use of hieroglyphics.
- Julius Caesar developed the first modern cipher.
- It is known as the 'Caesar cipher'
- Each character in the message is replaced by the character three positions ahead of it in the alphabet

## How Computers were used during WW2

- The Germans developed a computer called **Enigma** to send secret messages between troops
- **Colossus** was the name of a set of computers developed by British code breakers in 1943-1945
- The Colossus computers were used to help decipher intercepted messages that had been encrypted using ENIGMA
- Colossus helped to crack the German coded messages, without this the messages were unreadable

Key Words	Definition
<b>Cryptography:</b>	The art of writing or solving codes.
<b>Decipher:</b>	Convert (a text written in code, or a coded signal) into normal language.
<b>Hardware:</b>	Parts of a computer system you can physically hold and touch.
<b>Software:</b>	The programs on a computer you cannot physically hold and touch.
<b>Binary:</b>	A number system that only uses two digits, 0 or 1.
<b>Input:</b>	Information (data) put in to a computer.
<b>Process:</b>	Actions or steps taken to achieve an end result.
<b>Output:</b>	Information (data) displayed by a computer after it has been through a process.
<b>Computer:</b>	An electronic device that is capable of receiving data (input), carrying out a process and outputting the required result.

## How Computers process information



# Year 7 Geography Knowledge Organiser – Exploring Cities

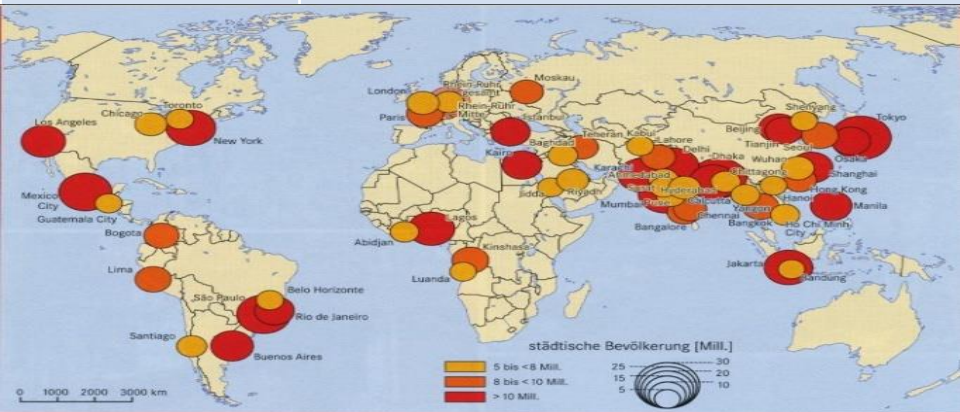
What is Urbanisation?	Consequences of Rapid Urbanisation in LIDCs	
	<p>Although there are lots of opportunities in urban areas, the rapid growth can place many pressures that causes various problems.</p>	<p>Social Consequences</p> <ul style="list-style-type: none"> <li>• Little official housing available.</li> <li>• Infrastructure struggles to support growing population.</li> <li>• Increase in crime rates.</li> </ul>
<p>This is an increase in the amount of people living in urban areas such as towns or cities.</p> <p>In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.</p>	<p>Environmental Consequences</p> <ul style="list-style-type: none"> <li>• Rubbish may not be collected.</li> <li>• Sewage and toxic waste pollutes river environments.</li> <li>• Increased congestion produces more pollution.</li> </ul>	<p>Economic Consequences</p> <ul style="list-style-type: none"> <li>• May not be enough jobs – increased unemployment.</li> <li>• Informal sector increases Little access to education and healthcare.</li> </ul>

Migration is caused by two types of factors: push and pull factors which are either pushing people away or pulling them towards an area.	
<p>Pull factors can include: education, jobs, quality of housing, leisure and entertainment opportunities, safety.</p>	<p>Push factors can include: lack of jobs, no transport, poor housing, conflict, natural disasters, lack of healthcare.</p>

Migration occurs within countries and between countries. It can be voluntary, which means people move because they want to improve their life. This movement is often from rural to urban areas and is called rural-urban migration and this drives urbanisation.

## Types of Cities

Megacity	An urban area with over 10 million people living there.
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More than two thirds of current megacities are located in either EDCs and LIDCs. The amount of megacities are predicted to increase from 28 to 41 by 2030.

## Consequences of Re-urbanisation

Social Consequences	
<ul style="list-style-type: none"> <li>• Shops and services benefit from the additional residents.</li> <li>• House prices in redeveloped areas increase.</li> <li>• Schools benefit from the increase of students.</li> <li>• More jobs and less employment within the area.</li> </ul>	

World City	Cities that are centres for trade and business. They hold global influence.
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Key 'world cities' include London, New York, Tokyo and Paris. Most are located within ACs but are now gradually expanding into EDCs, for example Moscow.

Environmental Consequences	Economic Consequences
<ul style="list-style-type: none"> <li>• Redevelopment of brownfield sites improves old industrial and polluted areas</li> <li>• Decreases pressures on greenfield areas.</li> <li>• Could destroy urban wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>• New shops and services will improve local economy.</li> <li>• Jobs available may not be accessible to original residents.</li> <li>• Urban tourism may increase.</li> </ul>



# Henry VIII, the Reformation and his heirs

## Year 7 Knowledge Organiser



### What do Catholics and protestants believe?

### Key Vocabulary

**Heir** – the person who will be the next king or queen

**Evidence** – facts or remaining sources from the past.

**Succession** – the process of becoming the new king

**Interpretation** – a person's point of view

**Catholic** – the oldest form of Christianity

**Judgement** – a decision about the importance of something.

**Protestant** – a type of Christianity formed after the Reformation.

**Consequence** – what happens because of an event.

**Reformation** – Christianity split into Catholicism and Protestantism.

**Sources** – evidence from the past.

**Sin** – when you have done something wrong or against the teachings of the Church.

**Significance** – an event that leads to change in the future

**Finance** – anything to do with money

**Hypothesis** – a prediction

**Religion** – belief in and worship of a god or gods.

**Heresy** – when your beliefs go against accepted religious ideas.

#### The Bible and Church Services

in Latin

#### The appearance of the church building

Catholics thought that churches should be decorated with paintings and statues to show God's glory

#### The role of priests.

Catholics said that people needed the priest as a link between them and God.

#### Forgiveness of sins.

Catholics said that the Pope and his bishops could forgive sins in exchange for a gift for the church.

#### Lifestyle of priests

Catholics said priests should wear special clothes because of their special link with God. Priests had to remain unmarried and devote their lives to God.

#### The Bible and Church Services

Bible and church services should be English so that more people could understand them.

#### The appearance of the church building

Protestants thought they should be plain, so that people concentrated on the priest and what he said about God.

#### The role of priests.

Protestants thought people could talk to God without a priest.

#### Forgiveness of sins.

Protestants said that only Jesus could forgive sins.

#### Lifestyle of priests

Protestants said that priests were just ordinary people. They should wear ordinary robes and should be able to get married if they wanted to.

### Who were Henry's wives?

#### Catherine of Aragon, 1509-33

Catholic  
A Spanish princess, one married to Henry's older brother.  
She brought friendship with Spain.  
Clever and popular.  
All her male babies died but she had a daughter called Mary who survived.  
Henry thought Catherine was old and boring when she reached 40 so he divorced her.

#### Anne Boleyn, 1533-36

Protestant.  
Young, pretty and fashionable.  
At first, made Henry wait until they were married before consummating their relationship.  
Had a daughter, Elizabeth.  
Henry sulked for weeks because he wanted a boy.  
Miscarried a baby boy in 1536. Henry accused Anne of being unfaithful with five other men. Despite having no proof, Henry has her beheaded in 1536.

#### Jane Seymour, 1536-37

Protestant.  
Calm, gentle and caring. She tried hard to be friends with Henry's daughters.  
Would not consummate their relationship until they were married.  
Had a son, Edward. Henry was delighted – a boy at last!  
Jane died of an infection a few weeks after the birth.

#### Anne of Cleves, 1540

Protestant. Cleves was an area of Germany, Henry married Anne because it brought friendship between England, and this powerful European region. She was serious and unfashionable. Friends tried to teach her some of Henry's favourite card games but she didn't understand them. Henry has seen a painting of her and liked what he saw. However when he saw her for real, he described her as a 'fat mare from Flanders'. Henry divorced her.

#### Catherine Howard, 1540-42

Protestant.  
Young, lively and pretty. She flirted with lots of men...and Henry found out. She once finished off a letter to her lover with the words, 'Yours as long as life endured'. Henry was furious  
Henry also found out that she had several serious boyfriends before she met the King. He felt a Queen should not have had a past like that and had her executed.

#### Catherine Parr, 1543-47

Protestant.  
Catherine enjoyed a close relationship with Henry's three children, Mary, Elizabeth, and Edward. She was personally involved in the education of Elizabeth and Edward. About six months after Henry's death, she married her fourth and final husband, Thomas Seymour, 1st Baron Seymour of Sudeley. Seymour was the uncle of King Edward VI (Catherine's stepson)



# Henry VIII, the Reformation and his heirs

## Year 7 Knowledge Organiser



### Why did Henry Break from Rome?

Money	Henry needed lots of money to fight wars but he was broke. The Catholic Church owned lots of land and wealth. If Henry took over the Church then he would also take over the land and wealth of the Catholic Church. He could then use this money for himself.
Religion	Lots of people began to think that the Catholic Church was superstitious and corrupt. These people were called Protestants. If Henry breaks away from Rome then he will be able to gain the support of these new Protestants.
Power	Henry didn't feel that he had control over many Catholics. They listened to the Pope and so he had more power than Henry. If Henry took over the Church then the Pope would have no say in England. People would have to look up to Henry instead and follow his orders.
Love	Henry wanted a divorce from Catherine of Aragon because he loved Anne Boleyn. If Henry became head of the Church he would not have to follow the Pope's orders and so could divorce Catherine and marry the woman he loved.

### What happened after Henry?

Edward VI	•Henry's male heir, Edward VI, was raised by Protestant men such as his uncles, Edward and Thomas Seymour. During his short reign, England became an increasingly devout Protestant. This led to a Catholic rebellion in 1549. Known as the Prayer Book Rebellion, it was led by people who didn't like Edward's new Book of Common Prayer, or the changes he was making to the Church.
Mary I	•Under Mary I, daughter of the Catholic Catherine of Aragon, England became a Catholic country once again. Many people who had been keen to keep their Catholic faith during the religious upheaval of the previous years celebrated Mary's arrival on the throne, throwing bonfires and parties. Protestants, however, were persecuted: around 300 were executed during Mary's reign. Others fled abroad. As a result of this brutal persecution, Mary earned the nickname of 'Bloody Mary'.
Power	•Under <a href="#">Elizabeth I</a> , daughter of Anne Boleyn, the religion of England changed again. Elizabeth shifted the country towards a more moderate Protestantism using acts of Parliament, which became known as the Religious Settlement. Elizabeth was opposed by Protestants who wanted even further reform, and Catholics who wished for the return to Rome. Elizabeth also had to deal with Catholic rebellions against her rule in both England and Ireland.
After the Tudors	•After Elizabeth, and into the reigns of King James I (King James VI of Scotland) and beyond, laws were passed which punished and lessened the rights of Catholics across the British Isles. In Ireland, the Catholic community was excluded from having any influence in politics, and they were not allowed to own land

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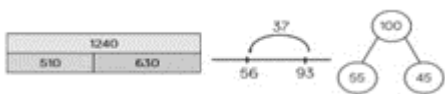
# Year 7 Mathematics Summer Term Knowledge Organiser

## Solving problems with addition and subtraction.

### Addition and subtraction with integers

Modelling methods for addition and subtraction:

- Bar models
- Number lines
- Part whole models



### Addition is commutative



$6 + 3 = 3 + 6$   
The order of addition does not change the result.

**Subtraction**  
the order  
must stay the  
**same.**

- Number lines help for addition and subtraction.
- Working in 10s first helps mental addition and subtraction.
- Show relationships by writing fact families.

Formal written methods:

	H	T	O		H	T	O	
	1	8	7		4	2	7	
+	5	4	2		-	2	4	9

Remember the place value of each column.

### Addition and subtraction with decimals

4	.	3	8
7	.	9	0
			+

0 can be used to fill empty place with value.

Revisit fraction and decimal equivalence (term 1):

$$5.43 + \frac{8}{10}$$

The decimal place acts as the place holder and aligns the other values.

### Problems with finance

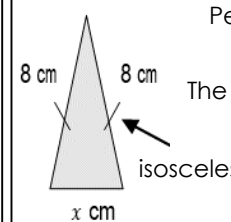
Profit = Income - Costs

Credit - Money coming into an account

Debit - Money leaving an account

Money uses a two decimal place system. 14.2 on a calculator represents £14.20

### Solve problems with perimeter



Perimeter is the length around the outside of a polygon.

The triangle has a perimeter of 25 cm  
Find the length of x

$$8\text{cm} + 8\text{cm} + x\text{cm} = 25\text{cm}$$

$$16\text{cm} + x\text{cm} = 25\text{cm}$$

$$x = 9\text{cm}$$

### Tables and timetables

#### Distance tables

London		
211	Cardiff	
556	493	Glasgow
518	392	Belfast

Shows the distance between Glasgow and London.  
It is where their row and column intersects.

#### Bus and train timetables

Harton	1005	1045	1130
Bridge	1024	1106	1147
Aville	1051	1133	1205
Ware	1117	1202	1233

Each column represents a journey.

**Time calculations:** use a number line.

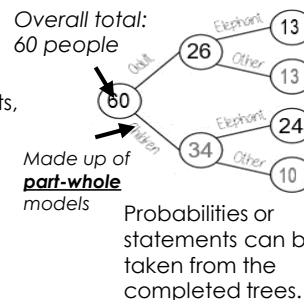
#### Two-way tables

	H	T
H	HH	HT
T	TH	TT

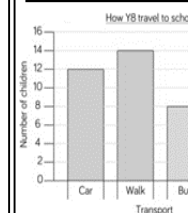
Where rows and columns intersect is the outcome of that action.

### Frequency trees

60 people visited the zoo one morning.  
26 of them were adults,  
13 of the adults' favourite animal was an elephant.  
24 of the children's favourite animal was an elephant.



### Bar charts and line graphs



When describing changes or making predictions:

- Extract information.
- Make comparisons of difference or sum of values.
- Put into the context of the scenario.

Use addition and subtraction methods to extract information from bar charts.

## Solving problems with multiplication and division.

### Factors

Arrays can help represent factors

$5 \times 2$  or  $2 \times 5$

Factors of 10: 1, 2, 5, 10

$1 \times 10$  or  $10 \times 1$

The number itself is always a factor.

**Square numbers** have an **odd number** of factors

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

Be strategic!  
Lay factors out in pairs to help you not to miss any.

### Multiples

Bar models can represent multiples.  
E.g.: 20 is a multiple of 4

Lowest common multiples:

LCM of 9 and 12

9: 9, 18, 27, 36, 45, 54  
12: 12, 24, 36, 48, 60

The first time their multiples match.  
LCM = 36

### Order of operations

If you have multiple operations from the same tier, work from left to right.

### Multiply and divide by powers of 10

Repeated multiplication and division by powers of 10 is commutative.

$3 \times 100 = 300$

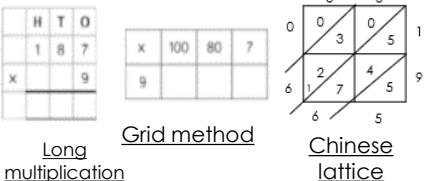
$0.03 \times 100 = 3$

$\div 10$  then  $\div 10 \rightarrow \div 100$

# Year 7 Mathematics Summer Term Knowledge Organiser

## Solving problems with multiplication and division.

### Multiplication methods



**Estimations:** using estimations allows a 'check' if your answer is reasonable.

### Multiplication with decimals:

1 Perform multiplications as integers.  
E.g:  $0.2 \times 0.3 \rightarrow 2 \times 3$   
2 Make **adjustments** to your answer to match the question:  
 $0.2 \times 10 = 2$   
 $0.3 \times 10 = 3$   
Therefore  $6 \div 100 = 0.06$

### Division methods

$$3584 \div 7 = 512$$

$$7 \overline{) 3584}$$

### Division with decimals:

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

$$24 \div 0.02 \rightarrow 24 \div 0.2 \rightarrow 240 \div 2$$

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

### Area problems

Rectangle:



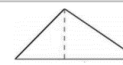
Base x perpendicular height

Parallelogram:



Base x perpendicular height

Triangle:



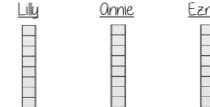
$\frac{1}{2} \times \text{Base} \times \text{perpendicular height}$

### Mean Problems

A measure of average. It gives an idea of the central value.



The average amount each person would have if shared out equally.

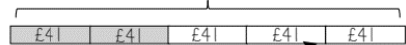


## Fractions and percentages of amounts

### Fraction of a given amount

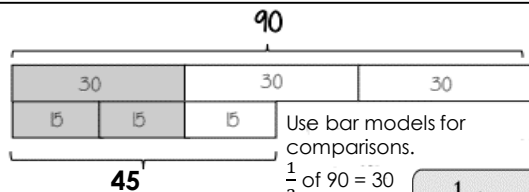
Find  $\frac{2}{5}$  of £250

The bar represents the whole amount.



2 out of the 5 equal parts  
 $2 \times £41 = £82$

$£205 \div 5 = £41$   
Each part of the bar model represents £41.



Use bar models for comparisons.

$$\frac{1}{3} \text{ of } 90 = 30$$

$$\frac{2}{3} \text{ of } 45 = 30$$

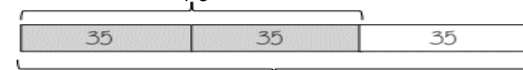
$$\therefore \frac{1}{3} \text{ of } 90 = \frac{2}{3} \text{ of } 45$$

### Use fraction of an amount

$\frac{2}{3}$  of a value is 70.

What is the whole number?

$70 \div 2 = 35$   
Each part of the bar model represents 35



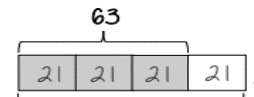
$$35 \times 3 = 105$$

The whole number is 105

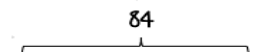
The wording of the question is important to setting up the bar model

$\frac{3}{4}$  of a number is 63

What is  $\frac{1}{6}$  of the number?



Find the whole.



Use the whole to find a given part.

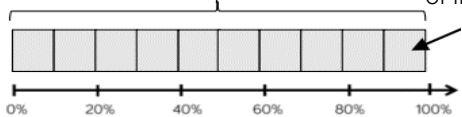
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### Find the percentage of an amount

#### (mental methods)

$10\% = \frac{1}{10}$  of the whole

The whole represents 100%



$$10\% = \frac{1}{10} \text{ of the whole} \quad 50\% = \frac{5}{10} = \frac{1}{2} \text{ of the whole}$$

$$20\% = \frac{2}{10} = \frac{1}{5} \text{ of the whole} \quad 5\% = \frac{1}{20} \text{ of the whole}$$

### Calculator method

Using a multiplier

Fraction, decimal, percentage conversion

Find 65% of 80

$$0.65 \times 80 = 52$$

$$65\% = \frac{65}{100} = 0.65$$

← The multiplier

Using the percentage button

Find 65% of 80

Type 65

Press **SHIFT** **(%)**

Press **80** and then press **=**

This brings up the % button on screen. You will see 65%

## Operations with equations and directed numbers

### Perform calculations that cross zero

Number lines are useful to help you visualize the calculation crossing zero.

$$4 - 6 = -2$$



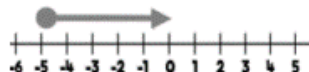
Use the number line to guide subtraction of 6.

Start at 4

$$-5 + 5 = 0$$

Rearrangements of the same equation

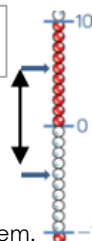
$$5 - 5 = 0$$



Find the difference between 6 and -4.

From 6 to 0  
6  
From 0 to -4  
4

10 beads between them.



# Year 7 Mathematics Summer Term Knowledge Organiser

## Operations with equations and directed numbers

**Add directed numbers**

$2 + -4 = -2$

Zero pair  $(-1 + 1 = 0)$

Two -1 left  $= -2$

$8 + -3 = 5$

**Subtract directed numbers**

Subtract means take away or remove

$2 - -1 = 3$

Take away one

$2 - -3 = 5$

**Multiply and Divide directed numbers**

Two representations of the same calculation.  $2 \times -3 = -6$

$-2 \times -3 = 6$

This is the negative of  $2 \times -3$

$-2 \times -3 = 6$

**Evaluate algebraic expressions**

$a = 5$        $b = -4$

$a^2 = 5^2$        $b^2 = (-4)^2$

$a^2 = 25$        $b^2 = 16$

With negative numbers the brackets are important so that it performs  $-4 \times -4$

**Brackets around negative substitutions helps remove calculation errors.**

## Addition and subtraction of fractions

**Representing fractions**

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

$1 \div 4$

**Mixed numbers and fractions**

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

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

**Add/Subtract unit fractions**

$\frac{1}{12} + \frac{1}{12} - \frac{1}{12} = \frac{2}{12}$

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

With the same denominator, only the number is added or subtracted.

**Add/Subtract fractions** *Same denominator*

$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$

Sequences  $\frac{1}{3}, 1, 1\frac{2}{3}, 2\frac{1}{3}, 3, \dots$

Represent this on a number line to help.

**Add/Subtract from integers**

$1 - \frac{2}{6} = \frac{4}{6}$

$3 + \frac{1}{6} = 3\frac{1}{6}$

The denominator indicates the number of parts a whole is made up of.

**Equivalent fractions**

Numerator and denominator have the same multiplier.

$\frac{2}{3} = \frac{4}{6}$

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

**Add /Subtraction of fractions (common multiples)**

$\frac{3}{5} + \frac{7}{10} = \frac{6}{10} + \frac{7}{10} = \frac{13}{10}$

**Add /Subtraction of any fractions**

$\frac{4}{5} - \frac{2}{3} = \frac{12}{15} - \frac{10}{15}$

Use equivalent fractions to find common multiple for both denominators.

**Add/Subtraction fractions (improper and mixed)**

$2\frac{1}{5} - 1\frac{3}{10} = 2\frac{2}{10} - 1\frac{3}{10} = \frac{22}{10} - \frac{13}{10} = \frac{9}{10}$

- Convert to an improper fraction.
- Calculate with the common denominator.

**Fractions in algebraic contexts**

$k - \frac{5}{8} = 2$

Apply inverse operations

$k = 2 + \frac{5}{8}$

Form expressions with fractions

$b + \frac{7}{9} \rightarrow b + \frac{7}{9}$

$p = 5$     $m = 2$

Substitution

$\frac{p}{8} + \frac{1}{m} = \frac{5}{8} + \frac{1}{2}$

# Year 7 Summer Term Knowledge Organiser Music

## The Elements of Music

Element	Definition
Melody	The main tune or musical theme
Articulation	How the notes are played
Dynamics	How loud and quiet the volume is
Instruments	The apparatus used to make and play the music
Structure	How the sections of music are organised
Harmony	The supporting chords used with the melody
Rhythm	The patterns of notes used and their durations
Tempo	How fast or slow the speed of the music is
Texture	How the layers of music fit together

## Dynamics: Key Terms

Dynamic symbol	Italian Term	Defintion
	Crescendo	Getting Louder
	Decrescendo	Getting Quieter
<b><i>ff</i></b>	Fortissimo	Very loud
<b><i>f</i></b>	Forte	Loud
<b><i>p</i></b>	Piano	Quiet
<b><i>pp</i></b>	Pianissimo	Very Quiet

Key Term	Definition
<b>Ostinato</b>	A repeating rhythm or pattern
<b>Sequence</b>	The repetition of a melody at a different pitch
<b>Counter melody</b>	An extra tune or melody on top of the main melody or musical theme
<b>Retrograde</b>	The melody is played backwards
<b>Theme</b>	The main melodic idea
<b>Rhythmic Diminution</b>	Halving the note values of the main theme doubling the tempo
<b>Rhythmic Augmentation</b>	Doubling the note values of the original theme making them twice as long



# Year 7 Summer Term Knowledge Organiser Music

## Textures: Key Terms

### Key Term

Unison

All instruments playing the same melody at the same time.

Polyphonic

Different melodies played together.

Call and Response

A melodic question and answer made by different instruments.

Canon

The same melody line is played at different points by different instruments.

### Definition

### THE MUSIC NOTE TREE

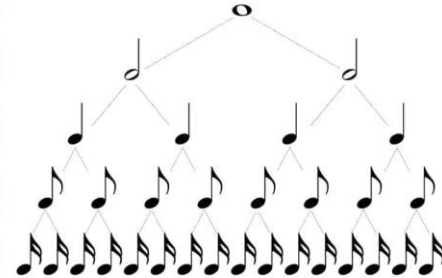
Semibreve - 4 beats

Minim - 2 beats

Crotchet - 1 beat

Quaver - 1/2 beat

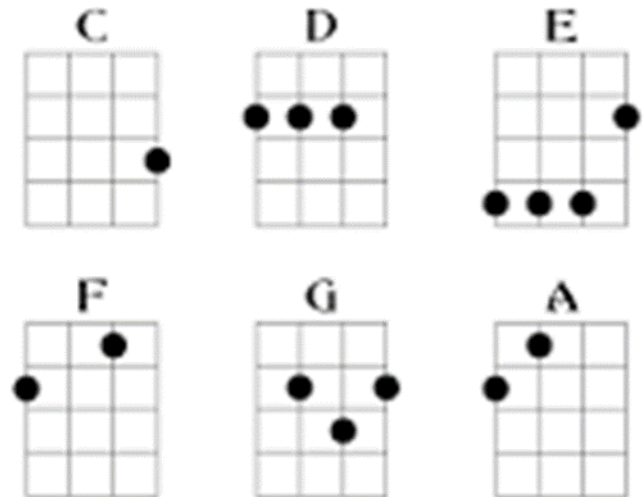
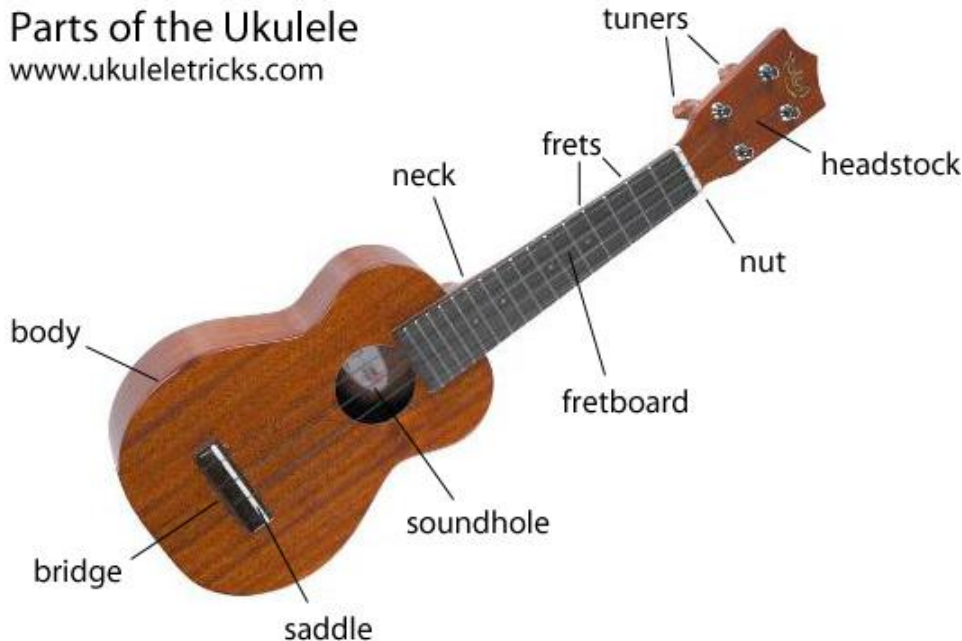
Semiquaver - 1/4 beat



### Ukulele chords

### Parts of the Ukulele

[www.ukuleletricks.com](http://www.ukuleletricks.com)



How do Hindus understand God?

**Hindus believe in Polytheism.** This is the belief in or worship of more than one God.

**Concept of Brahman.** Brahman is understood as the life giving force that is the 'origin of all that comes into being'. This power dwells within all living beings but is also beyond the universe. Brahman is often described as 'it' showing there is not gender as God is not a physical being

**Hindu understanding of God.** They believe there is one supreme universal spirit, Brahman, the origin of all that comes into being. This power dwells in all living beings. God is invisible and formless, God is not material but a power or spirit and thus has not gender.

**What is the Trimurti?** The triad of gods consisting of Brahma the creator, Vishnu the preserver, and Shiva the destroyer as the three highest manifestations of the one ultimate reality.

**The symbolism of the Trimurti** The Trimurti (meaning "three forms" of God), also known as the Hindu **Trinity**, is a representation of God in Hinduism, which depicts divinity as a three faced figure



**What is the nature of the Goddess in Hinduism?** the Goddess is seen as the activating force that enables the male gods to exert their power

**The different forms of the Goddess** The goddess has many forms. One of them is Kali. She represents the ferocious nature of the goddess. Another form of the goddess is Parvati, she represents the kindness and gentleness of the goddess.

**What is meant by the Atman?** *Hindus believe the atman is the soul*

**the nature of the Atman** Hindus call the atman the 'deep self-hidden in all beings' This soul within all living things is part of the pervading spirit of Brahman

**The concept of the Atman within Hinduism** *Hindus* they believe that life has a spark of the presence of God within it. The atman is eternal and indestructible. When the body dies, the atman continues to exist and enters another body



**What is meant by Ahimsa?** Showing respect for all living things and avoidance of violence towards others

**Why Hindus follow the principle of Ahimsa?** Hindus believe Ahimsa is a universal vow that is required for self-realisation. It is a necessity for anyone who aims to control their mind.

**How is the principle of Ahimsa shown in practice?** By being a vegetarian  
By refusing to fight in war and being a pacifist  
By protecting the environment e.g. not dropping litter.

**What do Sikhs believe about the afterlife?** Hindus believe that after death the atman continues to exist and enters another body just 'as a man casts off old clothes and takes on other clothes'. This is because the atman is 'eternal' and 'indestructible'. This is known as reincarnation.

**Samsara, Karma and Moksha** Hindus believe that the soul passes through a cycle of successive lives (samsara) and its next incarnation is always dependent on how the previous life was lived (karma). **Moksha** is the end of the death and rebirth cycle and is classed as the fourth and ultimate goal.

**How these beliefs affect a Hindu's everyday life**  
*Karma* literal meaning is 'action'. Hindus believe in a law that every action has an equal reaction either immediately or at some point in the future. Good or virtuous actions, will have good reactions or responses and bad actions, will have the opposite effect. So Hindus try to conduct good actions in their lives.



**Assessment Objectives:**

**AO1. Learning about religion.** To be able to Describe, explain and analyse key beliefs teachings and practices.

**AO2: Learning from religion** Use evidence and reasoned argument to express and evaluate personal and religious responses to the issues you have studied.

# Form & Structure (Shakespeare) Knowledge Organiser

## Plot

### Act 1

The Montagues and the Capulets are families involved in a bitter feud. Under penalty of death, the Prince of Verona orders the families to stop fighting. Romeo, a Montague, is lovestruck. His cousin, Benvolio, and best friend, Mercutio plan to cheer him up by gatecrashing a party at the Capulet house. Meanwhile, Lady Capulet plans for her daughter, Juliet, to marry Paris, a wealthy gentleman. At the party, Romeo and Juliet meet and fall in love at first sight.

### Act 2

After the party, Romeo sneaks back into the Capulet house and asks for her hand in marriage. Friar Laurence agrees to marry the lovers in secret, hoping that it will end the feud.

### Act 3

Tybalt, Juliet's cousin, is enraged that Romeo snuck into his family party. He tries to fight Romeo, who will not fight back. Mercutio dies defending his friend Romeo. Having heard of the violence, the Prince banishes Romeo from Verona. Capulet, in order to cheer his daughter up, arranges for her to marry Paris in two day's time.

### Act 4

Friar Laurence hatches a plan for Juliet to take a sleeping potion and appear dead, so she can meet Romeo in the family crypt and run away together. Juliet takes the potion, and funeral plans are made.

### Act 5

Romeo learns of Juliet's death, but not the secret plan. He fights his way back to Verona, buying poison on the way. Romeo kills Paris in order to be the one lying next to Juliet's grave. He kills himself just as Juliet wakes up. She then uses Romeo's dagger to take her own life. After the death of their children, the Montagues and Capulets end their feud.

## THE MONTAGUES

### Romeo

*A lovesick teenager.*

### Benvolio

*Romeo's cousin and all-round nice guy.*

### Mercutio

*Romeo's fight-loving best friend*

### Lord and Lady Montague

*Romeo's parents.*

## THE CAPULETS

### Juliet

*A teenager who won't be forced into love.*

### Tybalt

*Juliet's fiery cousin*

### Nurse

*Basically raised Juliet.*

### Lord and Lady Capulet

*Juliet's pushy parents.*

## OTHERS

### Friar Laurence

*Tries to end the feud. Succeeds – at a price.*

### Prince Escalus

*The lawmaker in Verona*

### Paris

*A nice guy, but not Juliet's true love.*

## Themes

### ROLES

What makes a good lover? Parent? Priest?

### AGE

Especially the old vs. young battle

### AUTHORITY

How to use it and abuse it.

### LOVE

Romantic, family, and friendships.

## Key Quotations

*"Peace? I hate the word, as I hate all Montagues"* Tybalt – A1S1

*"Here's much to do with hate, but more to do with love."* – Romeo – A1S1

*"But soft! What light through yonder window breaks? It is the east, and Juliet is the sun!"* Romeo – A2S2

*"My only love sprung from my only hate!"* Juliet - A2S2

*"A rose by any other name would smell as sweet!"* Juliet – A2S2

*"These violent delights have violent ends."* Friar Laurence – A2S5

*"A plague on both your houses!"* Mercutio – A3S1

*"O! I am Fortune's fool!"* Romeo – A3S1

*"Get thee to church on Thursday, or never after look me in the face"* Lord Capulet – A3S5

*"All are punished"* Prince Escalus – A5S3

## Context

### Feuds and Conflict

*The families hate each other, and within each family there are several different layers of conflict.*

### Religion

*In the 1600s, religion dictated strict rules – no sex before marriage, no divorce, and suicide sent you to hell.*

### Family

*Fathers ruled the household. Disobeying them was unheard of. Daughters were married off in exchange for money.*

### Love

*Courtly love is a cold, distant way of admiring someone. R+J share the passion of real love.*

### Fate

*A higher power determines the lover's future – many people in the 1600s believed that people had a prewritten destiny.*

# Year 7 - Form and Structure Poetry Knowledge Organiser

Dramatic Monologue	Dramatic monologue is a type of poetry written in the form of a speech of an individual character
Free Verse	Free verse is any form of poetry that does not rely on consistent patterns of rhyme and meter.
Sonnet	a poem of fourteen lines using any of a number of formal rhyme schemes, in English typically having ten syllables per line.
Stanza	a stanza (from Italian stanza, "room") is a group of lines within a poem, usually set off from others by a blank line or indentation
Rhyme	correspondence of sound between words or the endings of words, especially when these are used at the ends of lines of poetry
Tercet	A tercet is a three-line stanza.
Meter	The meter is the pattern of beats in a line of poetry.
Iambic Pentameter	Iambic pentameter is a rhythm structure, used most commonly in poetry, that combines unstressed syllables and stressed syllables in groups of five.
Iambic tetrameter	Iambic pentameter is a rhythm structure, that combines unstressed syllables and stressed syllables in groups of four.

<b>The Eagle by Alfred Lloyd Tennyson</b>	The Eagle' by Alfred Lord Tennyson portrays the swiftness and agility of the king of birds.
<b>My Last Duchess by Robert Browning</b>	A dramatic monologue which is being spoken by a Duke of Ferrara to a courier The poem begins at a point where the duke is showing a painting of his last duchess to his listener.
<b>Sonnet 18 – 'How shall I compare thee to a Summer's day'</b>	"Sonnet 18" is one of the best-known of the 154 sonnets written by the English playwright and poet William Shakespeare.

<b>Tone</b>	is an attitude of a writer or narrator toward a subject or an audience. Tone is generally conveyed through the choice of words, or the viewpoint of a writer on a particular subject.
<b>Metaphorical Language</b>	Language used to create and represent figurative meaning.
<b>Enjambment</b>	the continuation of a sentence without a pause beyond the end of a line, couplet, or stanza.
<b>Semantic Field</b>	Is a set of words (or lexemes) related in meaning

# Year 7 Art and Design Summer Term 3 Knowledge Organiser

## Keywords

1. Formal Elements of Art
2. Line
3. Shape
4. Tone and Form
5. Texture
6. Colour Theory
7. The Colour Wheel
8. Pattern and Zentangle Art

## The Formal Elements of Art

The formal elements of art are used to make a piece of artwork. The art elements are line, shape, form, tone, texture, pattern, colour and composition. They are often used together, and how they are organised in a piece of art determines what the finished piece will look like.

## Mark Making

Mark making describes the different lines, dots, marks, patterns and textures we create in an artwork. Artists use gesture to express their feeling and emotions in response to something seen or something felt .

<b>Line</b>	A Line is a mark or link between two points.
<b>Shape</b>	Shape is a flat, enclosed area such as a square or triangle.
<b>Tone</b>	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.
<b>Form</b>	A form can refer to a three-dimensional composition or object.
<b>Texture</b>	The texture stimulates two different senses: sight and touch.
<b>Colour</b>	Colour is the element of art that is produced when light, striking an object, is reflected back to the eye.
<b>Pattern</b>	A repeated decorative design.



## Colour Wheel

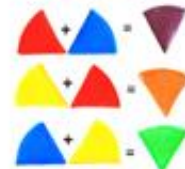
A colour wheel is an illustrative organisation of colour hues around a circle, which shows the relationships between primary colours, secondary colours and tertiary colours.

### Warm colours:

red, orange, yellow

### Cold colours:

blue, purple, green



## Colour Theory

### Primary:

red, yellow, blue

### Secondary:

orange, green, purple

### Tertiary:

Secondary + Primary

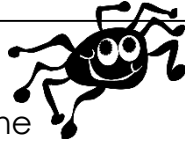
**Shades:** add black

**Tint:** add white

# Y7 Design Technology Summer Term Knowledge Organiser

**Structures:** Why understanding the uses and the forces associated with different types of structures is important when developing design ideas and putting them into practice?

## Organic structures



Find out together where the structures that can be found in nature are - plants, shells, spider webs, nuts...

Often inspiration is taken from nature and incorporated into designs.



## Frame structures

Have you seen The Eiffel tower? Or have you climbed a climbing frame?

They are comprised of jointed lengths of materials and typically use triangulation to increase stability.

## Mass structures

Do you know that piles of things such as a sandcastle, ant hill or termite mound are counted as a mass structure?

Mass structures are solid constructions made from smaller components.

## Shell structures



Have you tried to take apart packaging and other shell structures (boxes, packaging, glasses cases, drinks cans) to see how they are constructed?

Fun activities will be included!

## Beam structures

What are the beam structure and where might we find them?

Beam structures are simple frame structures where a beam carries the weight.

## Cable structures

True or false? Cables under tension transfer forces away from load bearing platforms. They offer good resistance under tension but have poor strength under compression.



Remove any jewellery and tie back long hair.    Wear an apron and roll up your sleeves.    Walk safely and calmly around the classroom/ workshop.    Keep your work area and floor area clear.    Make sure that you are wearing the correct equipment for tasks.    Report all spillages and clean up properly after yourself.

# Y7 Design Technology Summer Term Knowledge Organiser

**Forces:** Structures need to use and withstand the pulling, pushing, bending and twisting forces that act upon their construction to hold it together but also threaten to pull them apart.

## Links to Science

### What are the principal forces?

**Compression** – the effect of forces pushing on and trying to squeeze (compress) an object, for example the downwards force of books on a shelf.

**Tension** – forces that try to pull apart an object or cable, as in a tug of war.

**Bending** – causes compression and tension, for example in a wardrobe pole that is weighed down by clothes.

**Shearing** – when two surfaces are moved in opposite directions creating stress in joints.

**Torsion** – twisting action which can cause buckling such as in suspension bridges in high winds.



### Strength can be added to structures through:

**Ribbing** – ribs are added to a structure for added strength, for example in aeroplane wings.

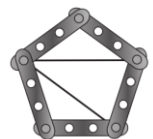
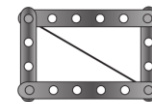
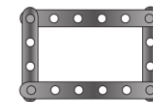
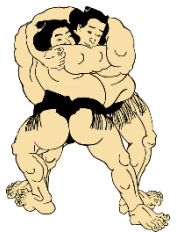
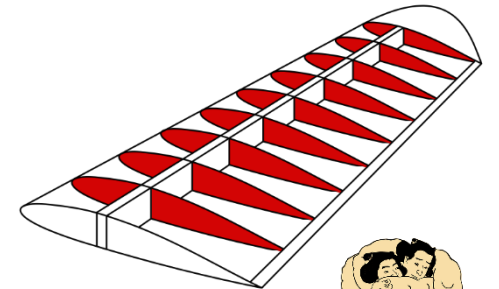
**Laminating** – layers of materials are bonded together, often with the 'grain' running in different directions as in plywood.

**Corrugating** – cardboard, steel sheets or other materials have a layer in which sheets have ridges and grooves.

**Joining methods** – nuts and bolts, strews, rivets, glues and welding all help to strengthen structures.

**Triangulation** – to prevent twisting and increases strength and rigidity.

Some structures may have **built-in weaknesses**, for example food packaging often has perforated lines to allow easy opening.



Look at this model text about holidays – do you think you could replicate it with your own information?

## Key verbs and vocab

Present		Past	
Voy	I go	Fui	I went
Vas	You go	Fuiste	You went
Va	He/she goes	Fue	He/she went
Vamos	We go	Fuimos	We went
Vais	You lot go	Fuisteis	You lot went
Van	They go	Fueron	They went

a... - to...

<b>Escocia</b> – Scotland	<b>Gales</b> – Wales
<b>Italia</b> – Italy	<b>Grecia</b> – Greece
<b>Egipto</b> – Egypt	<b>Irlanda</b> – Ireland
<b>Alemania</b> – Germany	<b>Estados Unidos</b> – USA

Con... - with

En... - by

<b>Avión</b> – plane	<b>barco</b> – boat
<b>Autobús</b> – bus	<b>autocar</b> – coach
<b>Tren</b> – train	<b>coche</b> – car

Fue... - it was

<b>Guay</b> – cool
<b>Flipante</b> – awesome
<b>Genial</b> - great
<b>Regular</b> - ok
<b>Horroroso</b> - terrible
<b>Un desastre</b> – a disaster
<b>Raro</b> – 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

**El primer día** - On the first day

**El último 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

## Let's show off

**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...

El año pasado fui a España de vacaciones	Last year I went to Spain
Fui con mi familia y fuimos en avion	I went with my family and we went by plane
Luego fui en coche y luego en barco. ¡Qué rollo!	I went by car and then by boat. How annoying!
El primer día descansé en la playa y luego escuché música	On the first day I rested on the beach and then I listened to music
Más tarde monté el bici y saqué muchos fotos y fue flipante	later on I rode my bike and took lots of photos
Otro día, por la mañana, tomé el sol.	On an other day, by the morning, I took the sun.
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!)
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!
Por la tarde salí con mi hermano y comí paella	In the afternoon I went out with my brother and I ate paella
Hice amigos.Fue estupendo!	I made friends,It was amazing
Mis vacaciones fueron guay	My holidays it was cool
Porque hizo buen tiempo.	Because it did good weather.
Me encantó.	I loved it.
pero comi algo mal, vomité.¡Qué desastre!!	but I ate something bad,I was sick.What a disaster!
Perdí mi pasaporte también.	I lost my passport also.

## Opinions



Opinions



Past tense holidays



Countries and transport



# Year 7 Food Summer Term Knowledge Organiser

**A balanced diet** consists of a variety of different types of food, providing adequate amounts of the nutrients necessary for good health – carbohydrates, fats, proteins, vitamins, minerals, fibre and water.

## CARBOHYDRATES



**Types of food:** Bread, Rice, Pasta, Potato

**Benefits:** Main source of energy, stored and quick release. Good for endurance performers.

**TYPE OF MACRONUTRIENT**

## PROTEIN



**Types food:** Eggs, fish, meat, cheese, nuts

**Benefits:** energy source, growing new body tissue, body tissue repair

**TYPE OF MACRONUTRIENT**

## FATS



To Eat or Not to Eat

**GOOD FATS:** Fish, nuts, olive oil, avocado

**BAD FATS:** Fried food, chips, chocolate, butter, cheese

**Benefits:** source of energy, all fats need to be eaten in moderation.

**TYPE OF MACRONUTRIENT**

**Food is produced all around the world.**

A lot of the food we eat is grown in the UK, but some food comes from other countries where the weather or seasons are different to ours.

**UK food**



**World food**



**Different dishes have different a country of origin.**



## VITAMINS

**TYPES:**

**A** – Fruit and Vegetables

**B** – Dairy, eggs, fish

**C** – Fruit

**D** – Dairy, fish

**E** – Fruit, Vegetables, cheese, oil, dairy

**K** – Fruit, vegetables, cheese, chicken

**Benefits:**

**A** – treats eye disorders and skin infections

**B** – relief from Kidney and Liver disorders plus anaemia

**C** – helps treat scurvy, common colds and cancer

**D** – helps relieve arthritis and diabetes

**E** – helps blood circulation and ageing process

**TYPE OF MICRONUTRIENT**

## MINERALS



**TYPES:**

**Calcium** – milk, cheese, broccoli

**Sodium** – salt, bacon, fruit, vegetables

**Iron** – red meat, chicken, broccoli, spinach, fish

**Benefits:**

**Calcium** – forms bones and teeth

**Sodium** – regulates body fluid

**Iron** – helps oxygen transportation

**TYPE OF MICRONUTRIENT**

## WATER / FIBRE



**Types of food** – cereals, bread, fruit and vegetables

**Benefits:**

**Water** - hydrates the body, 70% of our body weight is water. Stops overheating, helps waste disposal.

**Fibre** - regulates the digestive system and intestines helping with the removal of waste products

**TYPE OF MICRONUTRIENT**

**Macronutrients** - Carbohydrate, protein and fat (macro means large)

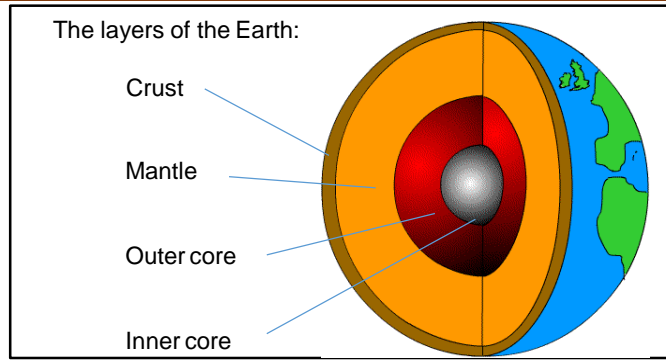
**Micronutrients** – Vitamins and minerals (micro means small)

<i>Too much salt</i>	<b>High blood pressure (hypertension)</b> Having high blood pressure puts strain on your heart that can lead to your blood vessels becoming damaged, making them more at risk of heart disease.
<i>Too much saturated fat</i>	<b>High cholesterol</b> High levels of cholesterol (a type of fatty substance) in the blood can build up in the walls of the coronary arteries, restricting blood flow to the heart and rest of the body.
<i>Too much sugar</i>	<b>Diabetes</b> The increased levels of blood glucose that can occur in type 1 and type 2 diabetes can damage the coronary arteries, increasing the chances of heart disease developing.
<i>Too much fat</i>	<b>Being overweight or obese</b> Research shows that being overweight or obese can raise your blood cholesterol levels, increase your blood pressure and increase your risk of developing type 2 diabetes.

# Earth's Structure

# Year 7 Science Knowledge Organiser

Key Word	Definition
rock cycle	Processes that lead a rock changing from one type to another.
weathering	The wearing down of a rock by physical, chemical or biological processes.
erosion	Weathering of rock and its movement by water, ice and wind.
minerals	Chemicals that a rock is made from.
sedimentary rocks	These rocks are formed from layers of sediment. These rocks can contain fossils.
igneous rocks	These rocks are formed from cooled magma, with the minerals arranged in crystals.
metamorphic rocks	These rocks are made from existing rocks that are heated and withstand high pressure over long periods of time.
strata	Another term for layers. E.g. the strata in a sedimentary rock.
magma	Molten rock



The layers of the Earth:

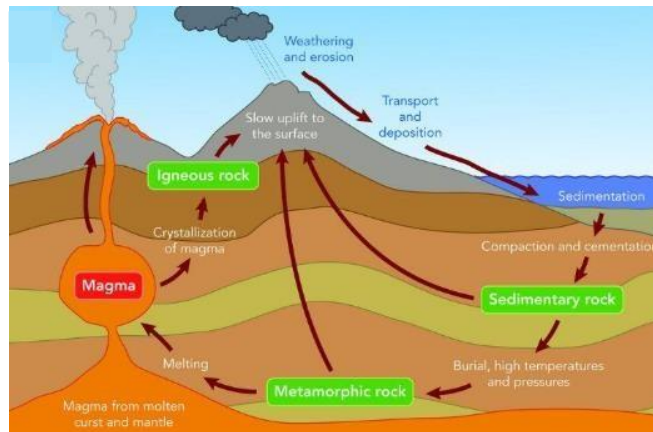
**Crust** – The outermost layer, it is thin and made out of sections called tectonic plates.

**Mantle** – A semi liquid, that causes the plates above to move due to convection currents.

**Outer core** – A liquid layer made out of molten iron and other elements.

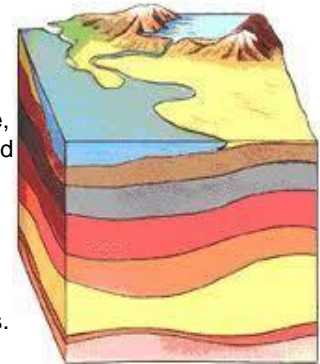
**Inner core** – The inner most section, it is solid. It is mainly made out of iron and nickel.

The rock cycle:



Sedimentary Rock:

These are formed when **sediment** hardens. Over time, more sediments add to **layer** with their own layers. Over many years, lots of layers are formed. Sedimentary rocks can contain **fossils**.



Examples of sedimentary rock: **Limestone, chalk, sandstone.**

Metamorphic Rock:

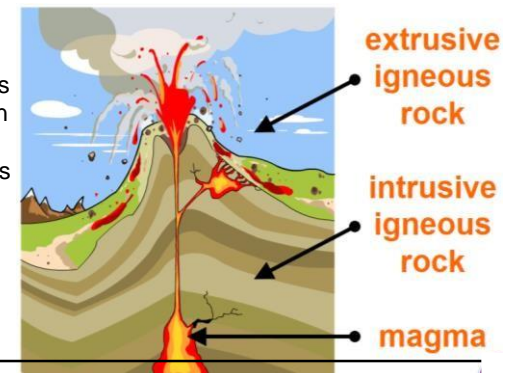
Metamorphic rocks, are rocks that have changed due to changes in **heat** and **pressure**.

When **igneous** or **sedimentary** rocks are **heated** or undergo **high pressures**, their structures change, making **metamorphic** rocks.

Examples of metamorphic rock: **Marble, slate** and **schist**.

Igneous Rock:

Igneous rocks have varying sizes of **crystals**. When the **magma** has longer to **cool**, this forms rocks with larger crystals. Examples of igneous rock: **Granite, basalt** and **obsidian**.



# The Universe | Year 7 Science Knowledge Organiser

Term	Definition
Day	The time it takes for a planet to rotate once on its axis. Different planets have different days. On Earth this is 24 hours.
moon	A satellite of the Earth that takes about 28 days to orbit.
Orbit	The pathway of an object around another.
year	The time taken for a planet to travel around the sun, on Earth this is 365.24 days.
star	Typically at the centre of a Solar System containing the majority of the mass. Nuclear fusion takes place here creating elements heavier than Helium.
comet	Balls of ice and dust that have a very elliptical orbit around the sun.
asteroid	Rocks that orbit the sun, many can be found in the asteroid belt between Mars and Jupiter.
Dwarf planet	Neither a planet or a natural satellite it is in orbit of the sun with gravity strong enough to cause it to be a sphere however it has not cleared its neighbours of other materials around its orbit.
reflection	When light from a luminous object bounces back off another object.
refraction	When light enters different densities of material it appears to 'bend'.

## Satellites, orbits and gravity

A satellite is an object that has is in orbit. Natural satellites such as the Earth and the Moon or artificial satellites placed into orbit. There are many uses for artificial satellites such as TV, communication, monitoring the environment and spying on different countries.

Objects in orbit are said to always be 'falling' towards the earth due to gravity.

The Gravity of a planet or star depends on its mass. The greater the mass the stronger the gravitational field. On Jupiter gravity is more than twice that of Earth, on the moon gravity is one fifth of that on Earth, imagine what it would be like to walk on each one!

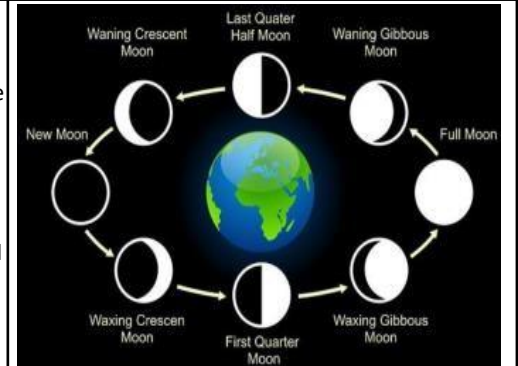
## How does the Moon move around the Earth?

The Moon orbits the Earth anticlockwise and takes approximately 28 days, we call this the **lunar month**. The Moon spins once on its axis every time it orbits Earth. This means that we only see one side of the Moon. The side of the moon we do not see is called the dark side of the moon.

The Moon has different phases depending on where it is in its orbit. Each lunar month, the moon is unilluminated, this is call the new moon. As the lunar month continues, more of the moon is illuminated by the sun until it becomes a full moon.

**Waxing** occurs after a new moon and before a full moon, as more of the moon is illuminated.

**Waning** occurs after a full moon and before a new moon, as less of the moon is illuminated.



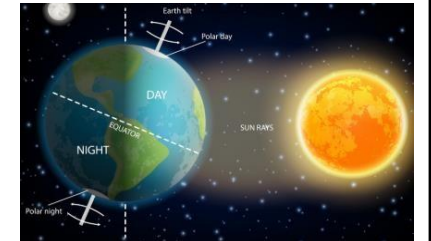
**There is gravity on the moon. However it is a much lesser force than the gravity on earth.**

## What causes day and night?

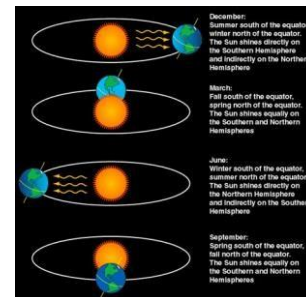
The Earth rotates on its axis anti-clockwise and makes a complete rotation over 24 hours (a day).

This makes it appear as the Sun moves through the sky but the Earth's rotation causes day and night. Different parts of the Earth experience daylight at different times - this means that it is morning, afternoon and night in different places.

This is also the reason why we have time zones. Because of the Earth's tilt, the poles experience 24 hours of sunlight in the summer, and very few hours of sunlight in the winter. As the Earth rotates, shadows that are formed change in size and orientation



## What causes the seasons on earth?











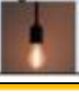

Earth's tilted axis causes the seasons. Throughout the year, different parts of Earth receive the Sun's most direct rays. So, when the North Pole tilts toward the Sun, it's summer in the Northern Hemisphere. And when the South Pole tilts toward the Sun, it's winter in the Northern Hemisphere.

# Energy

# Year 7 Science Knowledge Organiser

## Energy models

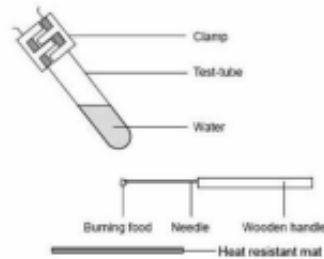
- Jobs get done when energy is **transferred** from one store at the start, to another at the end.
- This energy can change form as it is being transferred
- These **energy stores** can have energy of different types in them.
- Dissipated**: spreads out **wastefully**. Energy is dissipated, reducing the amount of useful energy.

Type of energy	Description	Type of energy	Description
<b>Kinetic</b> 	The energy in moving objects	<b>Thermal (Internal)</b> 	The heat stored in an object
<b>Chemical</b> 	When a substance undergoes a chemical reaction	<b>Gravitational potential</b> 	When an object is raised to a height
<b>Magnetic</b> 	When 2 objects attract or repel	<b>Electrostatic (electrical)</b> 	Allows an electric current to flow
<b>Elastic potential</b> 	When an object is stretched or squashed	<b>Nuclear</b> 	Energy stored in an atom (not needed till GCSE)
<b>Light</b> 	From a bright object (not stored)	<b>Sound</b> 	From a vibrating object (not stored)

keyword	Definition
Energy	Measured in Joules (J)
Power	The rate of work done or the energy transferred per second
Vacuum	A space in which there is no matter (particles)
Fossil fuel	Natural, finite fuel formed from the remains of living organisms, e.g. coal, oil and natural gas
Renewable	An energy resource that will not run out such as solar and wind energy
Non-renewable	An energy resource that cannot be replaced when it is used up, such as fossil fuels (finite resource)

## Measuring the energy in food

We can measure the amount of energy in food to see how burning it changes the chemical energy to thermal energy in the test tube (shown below)

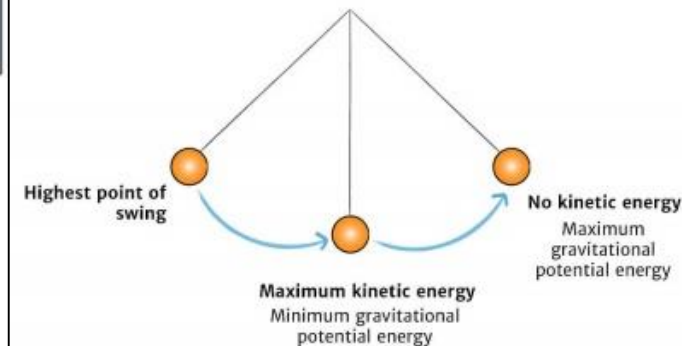


There are several problems with this experiment such as not all the energy from the food going into the water – it is dissipated to the surroundings. The volume of water must remain the same throughout the experiment without evaporation. The mass of the food should be equal each time the food is tested.

## Calculating cost

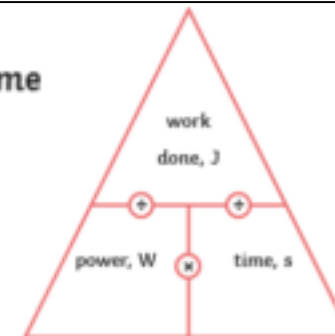
- Electricity bills are calculated based on the amount of energy transferred.
- Cost = Power x time x price**
- Power** measured in **kiloWatts**
- Time measured in **hours**
- Price** measured in **kiloWatt-hours**

## Pendulum Example



$$\text{power} = \text{work done} \div \text{time}$$

$$P (W) = W (J) \div t (s)$$

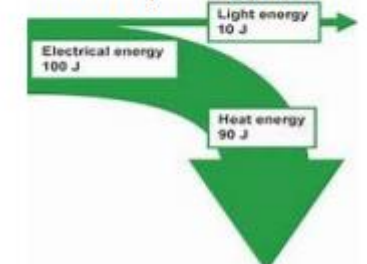


## Energy transfers

- When energy is transferred, the total amount is **conserved**.

$$\text{efficiency} = \frac{\text{useful output power}}{\text{input power}}$$

- Sankey diagrams



# Keywords

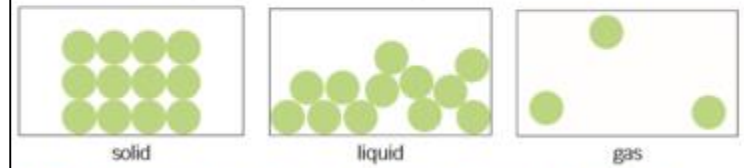
Amplitude	The height of a wave crest or trough
Wavelength	The distance from one wave crest to the next.
Frequency	The number of wave crests passing a fixed point every second.
Reflection	The change of direction of a light ray or wave at a boundary when the ray or wave stays in the incident medium.
Refraction	The change of direction of a light ray when it passes across a boundary between two transparent substances (including air).
Echo	Reflection of sound that can be heard

# Year 7 Science Knowledge Organiser

## Waves

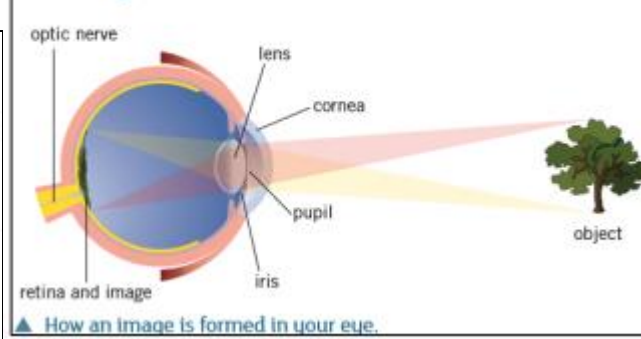
### How fast does sound travel?

Sound travels at 330 m/s in air. Sound travels much faster in liquids, about 1500 m/s. Sound travels fastest in solids. In metals like steel it can travel at 5000 m/s. You can explain why a sound wave travels faster in a solid than in a gas if you think about particles.



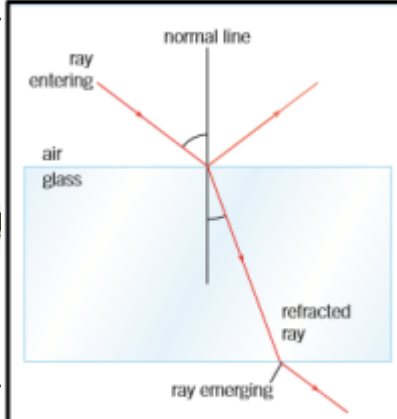
▲ The arrangement of particles explains the speed of sound in different materials.

### How do you see?



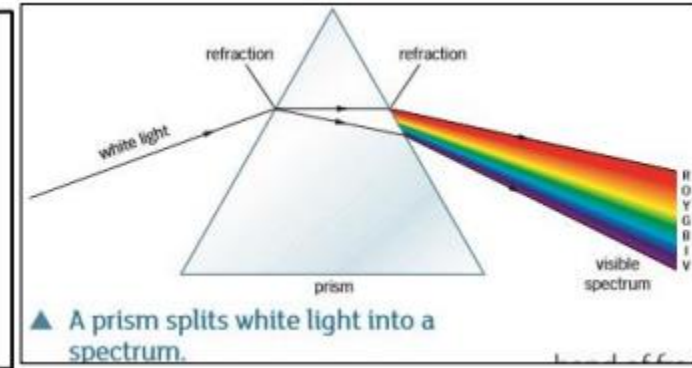
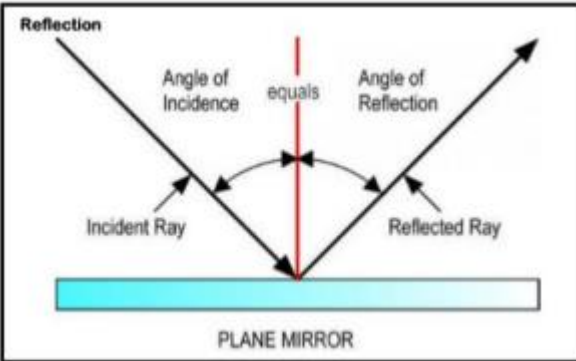
▲ How an image is formed in your eye.

# Refraction



▲ Light refracts when it enters or leaves a glass block.

# Reflection

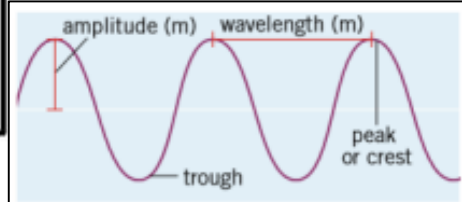


▲ A prism splits white light into a spectrum.

**Speed of Light**  
300,000km/s

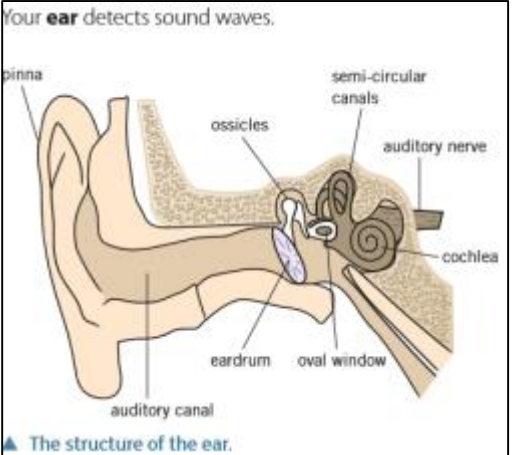
**Speed of Sound (air)**  
343m/s

Light can travel through a vacuum but sound cannot. Sound needs a medium to travel through either a solid, liquid or gas. Sound travels fastest in a solid because the particles are closer together.



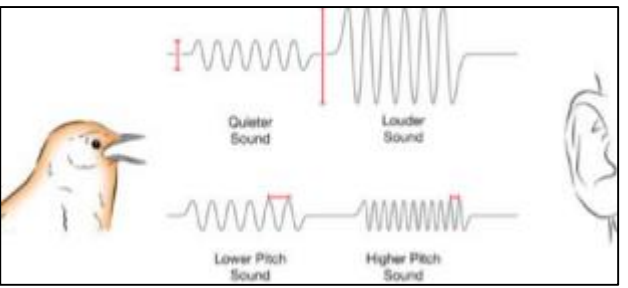
▲ This diagram shows the amplitude and wavelength of a wave.

# The Ear



▲ The structure of the ear.

# Describing sounds

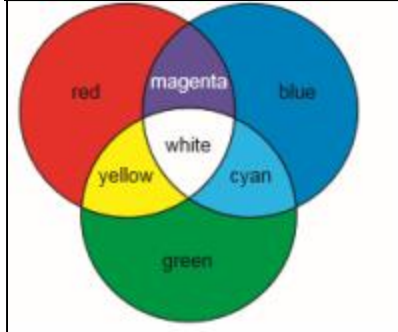


### Features of a wave

- All waves have three important features:
- an **amplitude**, which is the maximum amount of vibration as measured from the middle of the wave, measured in metres
  - a **frequency**, which is the number of waves produced in one second, measured in hertz
  - a **wavelength**, which is the distance between two corresponding points on a wave, measured in metres.

The top of a wave is called a **peak** or **crest**, and the bottom of a wave is called a **trough**.

# Seeing colours



▲ This Venn diagram shows the primary and secondary colours of light.

# Year 7 Drama Summer Term Knowledge Organiser

## The World Around Us: News reporting

### Verbatim Drama

What is Verbatim Performance? Also known as ethnodrama or documentary theatre, verbatim performance involves actors portraying as precisely as possible the exact words and gestures of people from media artifacts, such as video and audio recordings, interviews, court reports, or newspaper articles.

### Key Knowledge

You will be able to develop vocal and physical skills in an improvised scene. You will explore ways to create characters and storylines that you will include the basic drama techniques and conventions.

### Key Skills

Communication  
Freeze Frames  
Teamwork  
Characterisation  
Research  
Reading  
Vocal and physical

### News reporting

What is the importance of news reporting? Mainly to inform the public about events that are around them and may affect them. Often news is for entertainment purposes too; to provide a distraction of information about other places people are unable to get to or have little influence over. News can make people feel connected too

### Performance Key Language

**Characterisation:** Use of voice and movement to create a role.

**Monologue:** A character speaks directly to the audience about their feelings.

**Tableaux:** A single frame forming a motionless image.

**Media:** the means of communication, as radio and television, newspapers, magazines, and the internet, that reach or influence people widely

**Research:** can find answers to things that are unknown, filling gaps in knowledge and changing the way that healthcare professionals work.

**Documentary or Verbatim Drama:** Based on real accounts and facts

