Knowledge

is power

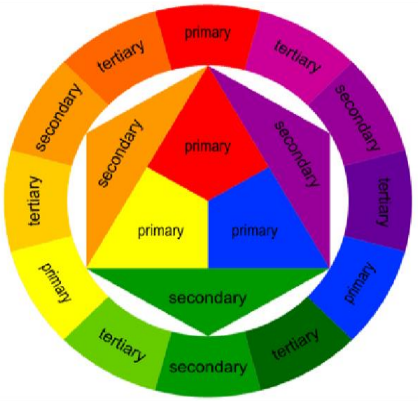
In PSHE you will learn about tolerance. You will explore different kinds of relationships. This will give you the opportunity to discuss why some people are intolerant. Is there are reason for their hatred? You will have the chance to consider what makes a successful relationship. It would be a great idea to reflect on how social change has accelerated in the 21st Century and how much further we might need to go. It is also worth considering that not all people will be happy with the changes to society. This is a great opportunity for an intergenerational conversation within your family.

1

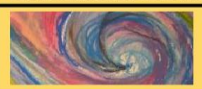
Media	The substance that an artist use to make art
Materials	The same as media but can also refer to the basis of the art work eg, canvas, paper, clay
Techniques	The method used to complete the art work, can be generic such as painting or more focus such as blending
Processes	The method used to create artwork that usually follows a range of steps rather than just one skill

3

Colour Theory	
Primary= RED, YELLOW, BLUE	Complimentary; Colours opposite on the colour wheel
Secondary= Primary+Primary	Harmonious; Colours next to each other on the wheel
Tertiary= Secondary+Primary	Monochromatic; shades, tones & tints of one colour
Shades – add black	Hue – the pigment
Tint – add white	Warm; RED, ORANGE YELLOW. Cold; BLUE, GREEN, PURPLE



2

Pencil		The basic tool for drawing, can be used for linear work or for shading
Biro		Drawings can be completed in biro and shaded using hatching or cross hatching
Pastel (chalk/oil)		Oil and chalk pastels can be used to blend colours smoothly, chalk pastels give a lighter effect
Coloured pencil		Coloured pencil can be layered to blend colours, some are water soluble
Acrylic paint		A thick heavy paint that can be used smoothly or to create texture
Watercolour		A solid or liquid paint that is to be used watered down and layered
Gouache		A pure pigment paint that can be used like watercolours or more thickly for an opaque effect
Pressprint		A polystyrene sheet that can be drawn into to print white lines – can be used as more than 1 layer
Monoprint		Where ink is transferred onto paper by drawing over a prepared surface
Collograph		A printing plate constructed of collaged materials
Card construction		Sculptures created by building up layers of card or fitting together
Wire		Thick or thin wire manipulated to create 2d or 3d forms
Clay		A soft substance used for sculpting, when fired can be glazed to create shiny colourful surfaces
Batik		A fabric technique using hot wax to resist coloured inks
Silk painting		Fabric inks painted onto silk, Gutta can be used as an outliner to prevent colours mixing

Art: Some techniques and language explored by all students during Key Stage 3.

1

Methods of Recording

Observational drawing	Drawing from looking at images or objects
First hand observation	Drawing directly from looking at objects in front of you
Second hand observation	Drawing from looking at images of objects
Photographs	Using a camera or smartphone to record images will class as first hand observation
Sketches	Basic sketches and doodles can act as a starting point for development

Stages of Drawing

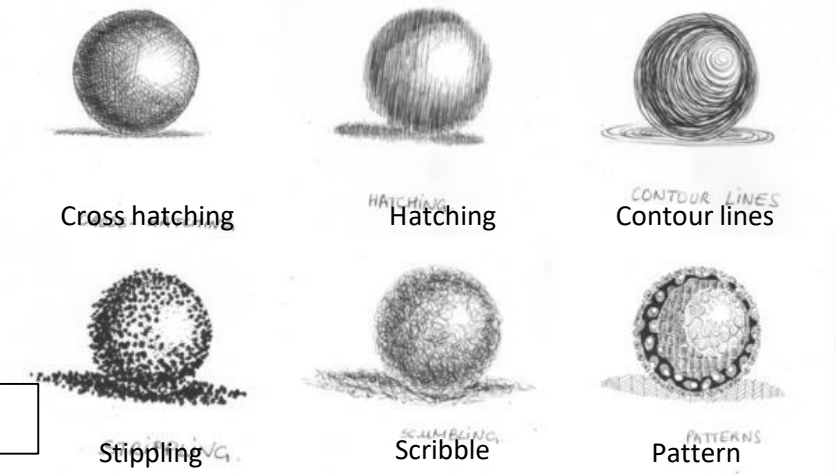
Basic shapes → Accurate shapes → Detail → Shade

2

Tonal shade

Produce a range of tones by varying the pressure and layering – consider using softer pencils for darker shades

Alternative shade techniques



3

Annotation

Describes writing notes, using images and explaining your thoughts to show the development of your work.

Step 1 - Describe
What is this an image of?
What have you done here?
What was this stage of the project for?

Step 2 - Explain
How was this work made?
How did you produce particular effects? How did you decide on the composition?

Step 3 - Reflect
Why did you use these specific methods? Why do particular parts work better than others?
Why might you do things differently next time?

Art Key Stage 3

1

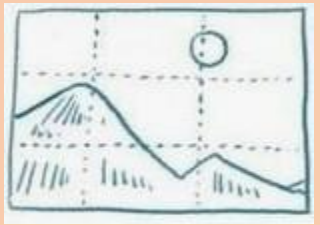
Formal Elements of Art

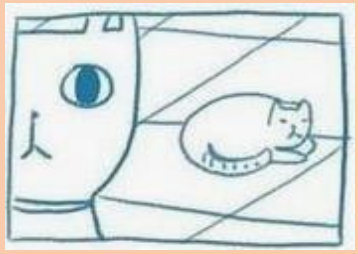
LINE	the path left by a moving point, e.g. a pencil or a brush dipped in paint. It can take many forms. e.g. horizontal, diagonal or curved.
TONE	means the lightness or darkness of something. This could be a shade or how dark or light a colour appears
TEXTURE	the surface quality of something, the way something feels or looks like it feels. There are two types : Actual and Visual
SHAPE	an area enclosed by a line. It could be just an outline or it could be shaded in.
PATTERN	a design that is created by repeating lines, shapes, tones or colours. can be manmade, like a design on fabric, or natural, such as the markings on animal fur.
COLOUR	There are 2 types including Primary and Secondary . By mixing any two Primary together we get a Secondary

2

Composition Layouts

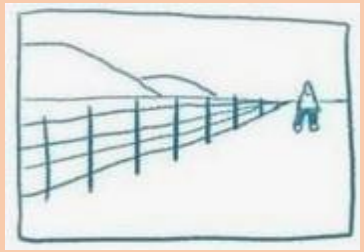
Rule of thirds – Place focal objects at 1/3 or 2/3 of the image horizontally or vertically. Not in the middle





Balance elements. If there is an emphasis on one side balance it out with smaller objects on the other

Simplify and fill. Enlarge or crop the image to fill the space



Use lines. Lines will draw the viewer in, they don't have to be straight, consider S or C

3

A Rough	A Visual/ Maquette	Final Piece
A basic sketch of a final idea	A small image or model created in selected materials	An image or sculpture pulling all preparatory work together

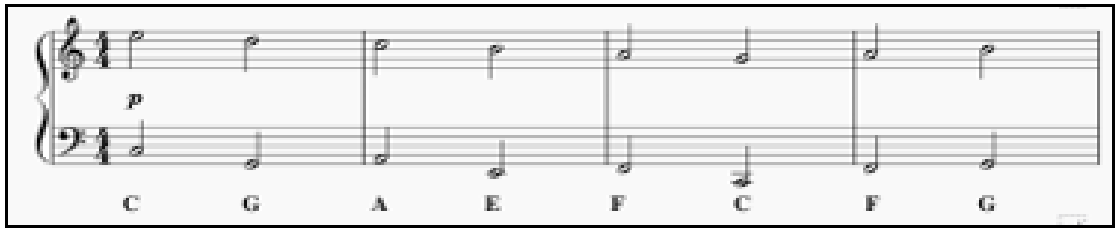
Art Key Stage 3

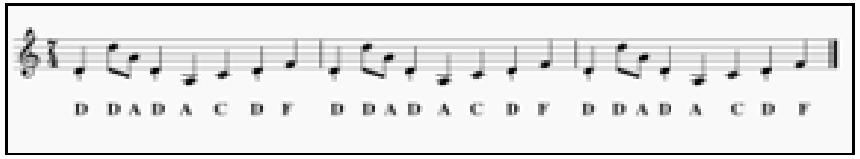
1. "Van Gogh Skies"- In this project the students learn about the artist Vincent Van Gogh and recreate a section of night sky using his unique mark making style and bold use of colour.
2. "Mannequin figures"- The students study the human form and learn about proportion and scale. They make oil pastel studies of mannequin figures using contrasting tones to emphasise light and shadow.
3. "African Masks" – the students learn about the mask culture in certain African countries and how this has influenced modern art forms e.g. Cinema. They create their own 3D mask using a variety of materials.

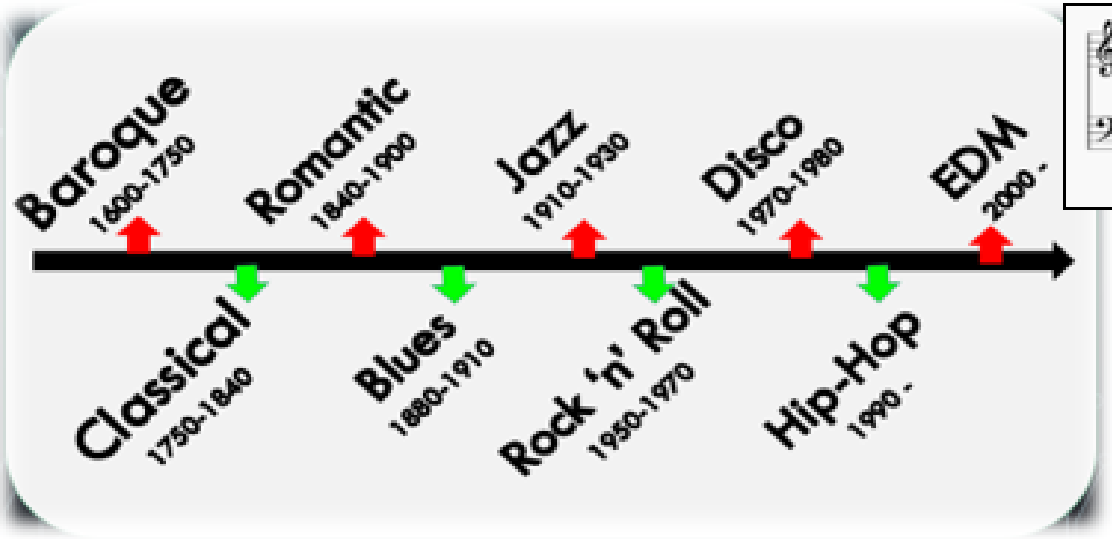
Year 8 Music Knowledge Organiser

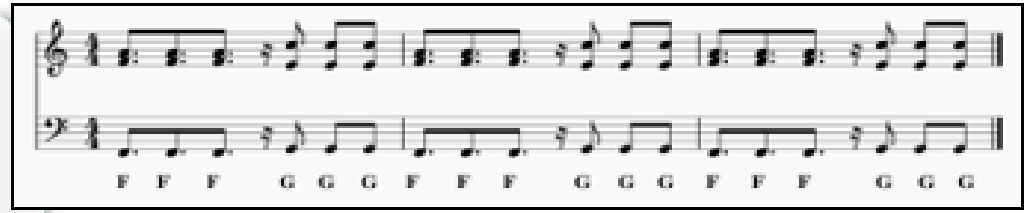
Ostinatos

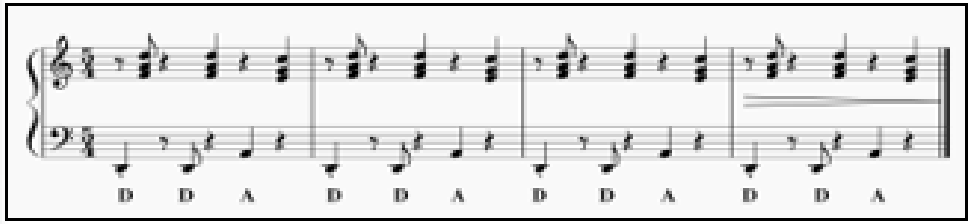
Ostinatos are musical patterns that repeat. They can be melodic (has pitch) or rhythmic (has duration) and never change. Don't confuse these with motifs which are similar but those patterns can shift in terms of pitch, duration or instrument!







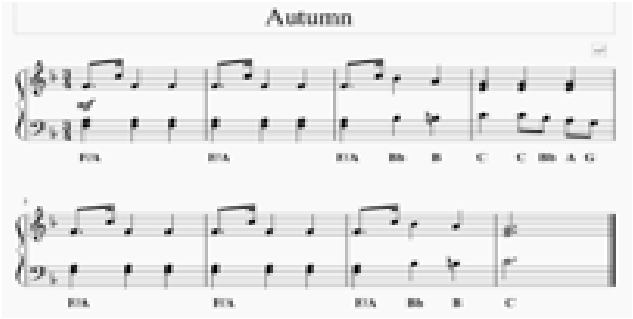


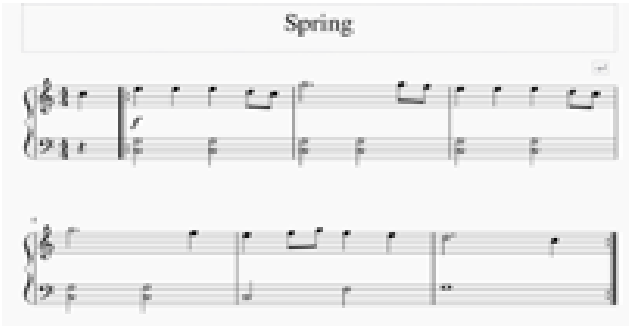


Baroque Era – 1600 - 1750

The Baroque era in music history occurred between 1600 to 1750. Baroque music has strong melodies and is very organized. The music is very dramatic because it contains lots of sudden contrasts in dynamics and composers began to experiment with different instruments like the trumpet and the clarinet.

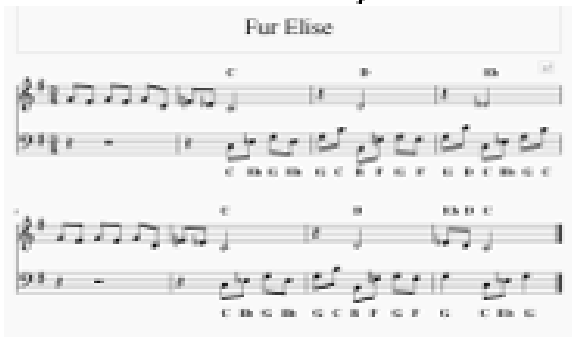
Famous composers include J.S. Bach, Vivaldi (who wrote the Four Seasons), Purcell and Handel.





Classical Era – 1750 - 1825

- The classical era lasted from 1750 – 1825. During this time, the orchestra, the piano and opera were developed!
- The music was more lyrical and less organised than the Baroque era. Symphonies, sonatas and concertos were invented.
- The famous composers were Mozart, Beethoven and Haydn.



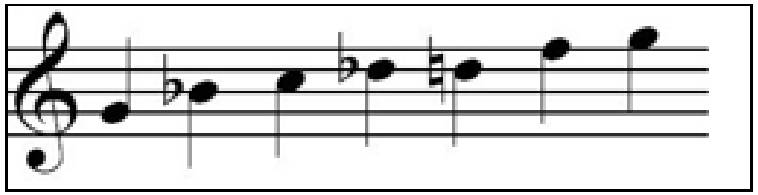
Romantic Era – 1840 - 1900

Key features

- Bigger range of dynamics
- Larger range of pitch
- Music that expressed emotion
- Music that represented nationalism or nature

Famous composers

Debussy, Prokofiev, Mendelssohn and Tchaikovsky!



C	C	C	C
F	F	C	C
G	F	C	C

Blues and Jazz – 1880 - 1930

- Blues and Jazz music share a lot of similarities but jazz uses more extreme improvisation whereas Blues usually sticks to key notes based on the blues scale (see above!)
- Improvisation means making something up on the spot, with no preparation!
- It originated in America and came from the slave trade, where slaves sang about their woes and struggles and used those songs as they did their labour, hence why the blues has its name.
- The Blues produced a very popular chord progression called the 12 bar blues which became the basis for a lot songs and was used in a lot of early rock 'n' roll (see above – read from left to right, top to bottom)
- Jazz popularised instruments such as the trumpet, saxophone, clarinet, flute and trombone!
- The genre developed 7th chords (chords are 2 or more notes played at the same time) and swing rhythms.

Rock 'n' Roll – 1950 -

- ✓ The Beatles
- ✓ The Rolling Stones
- ✓ Led Zeppelin
- ✓ Pink Floyd
- ✓ AC/DC
- ✓ Fleetwood Mac
- ✓ Queen
- ✓ Elvis Presley

Key features

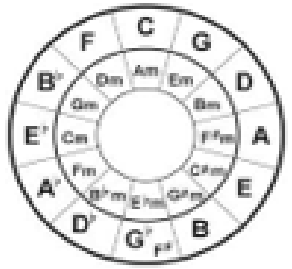
Rock 'n' roll music invented the band formula still being used to this day, using guitars, drums and vocals. Songs usually contained some sort of instrumental solo section and the lyrics centred around more adult content. Rock music has developed into many branches since the 1950's including metal, punk, soft and heavy.

Disco – 1970 – 1980

Disco is a genre of dance music and a subculture that emerged in the 1970s from the United States' urban nightlife scene.

The disco sound usually has a "four-on-the-floor" beats, syncopated basslines, and string sections, horns, electric piano, synthesizers, and electric rhythm guitars.

The most famous artists from Disco are ABBA, the Bee Gees (with Saturday Night Fever) and Gloria Gaynor – I Will Survive which uses the circle of 5ths chord progression!

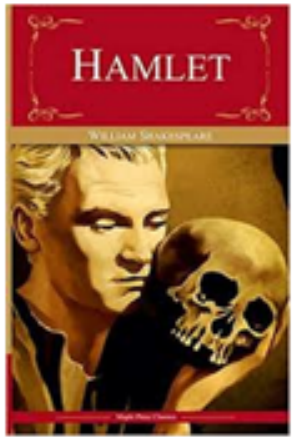


Hip-Hop/Rap

- In the 1990's, hip-hop and rap became very popular, often talking about social or political issues
- Recognisable drum beats or samples from others songs were often used as a bedding track for lyrics
- Beat-boxing and body percussion also became popular meaning this music was accessible to anyone
- Rap lyrics often have a mix of perfect and imperfect rhymes and are set to a 4/4 time signature to allow for an easy rhythmic flow

Vocabulary to learn

Shakespeare
Soliloquy
Tragedy
Performance
Production
Theme
Justify
Fear
Pronoun
Singular noun
Plural noun



First performed around 1600, Hamlet tells the story of a prince whose duty to revenge his father's death entangles him in philosophical problems he can't solve.

Structure analysis - methods:

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
  - inside to outside (and vice versa)
  - focus
  - time
  - topic
  - setting/place
  - mood/atmosphere
  - description to dialogue (and vice versa)

Language analysis Checklist:

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings
- Aim higher: layers of meaning

Sentence Form	Definition	Example
Fragment sentence	An incomplete idea.	*Rolling thunder.*
Simple sentence	Contains one complete idea in an independent clause.	*The lightning flashed.*
Compound sentence	Contains two independent clauses linked by a conjunction or a semi-colon.	*The lightning flashed **and** the rain fell.* *The lightning flashed; the rain fell.*
Complex sentence	Contains an independent clause and at least one dependent clause.	*Despite the thunder and lightning, there was no rain.*

Evaluate — weigh up, form a judgement

This question asks you to **evaluate** the **extent** to which you agree with a given statement about a text.

how much

You will need to consider:

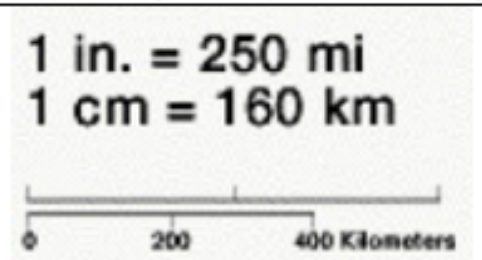
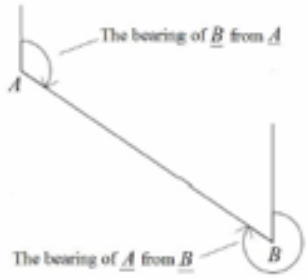
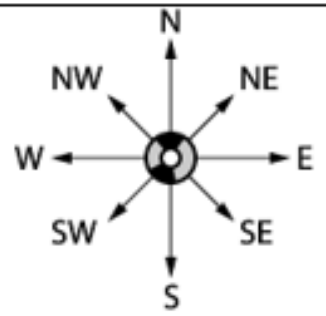
- The impressions (**opinions**) you have of the text in relation to the statement
- The methods the writer has used to create these impressions
- How the particular methods create these impressions

Words/phrases
Linguistic devices
Structural features
Sentence forms

Literary devices and word class

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass danced in the wind*
- Simile – as/like/as if – *he was like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds - *really rather raucous*
- Lists – to emphasise many reasons
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote **neatly**
- connotations of words – associations – night-time = mystery

Topic: Bearings and Scale Diagrams

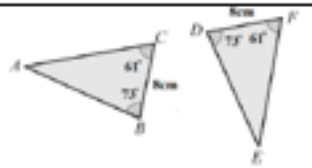
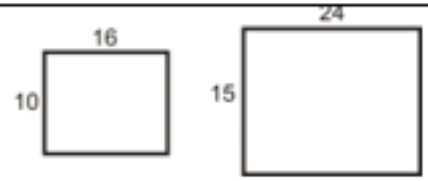
Topic/Skill	Definition/Tips	Example
1. Scale	The **ratio** of the **length** in a **model** to the length of the **real** thing.	 Real Horse 1500 mm high 2000 mm long Drawn Horse 150 mm high 200 mm long
2. Scale (Map)	The **ratio** of a **distance on the map** to the actual **distance in real life**.	
3. Bearings	1. Measure from **North** (draw a North line) 2. Measure **clockwise** 3. Your answer must have **3 digits** (eg. 047°) Look out for where the bearing is measured from.	
4. Compass Directions	You can use an acronym such as **'Never Eat Shredded Wheat'** to remember the order of the compass directions in a clockwise direction. Bearings: $NE = 045°, W = 270°$ *etc.*	

Topic: Algebra

Topic/Skill	Definition/Tips	Example
1. Expression	A mathematical statement written using **symbols**, **numbers** or **letters**,	$3x + 2$ or $5y^2$
2. Equation	A statement showing that **two expressions are equal**	$2y - 17 = 15$
3. Identity	An equation that is **true for all values** of the variables An identity uses the symbol: $\equiv$	$2x \equiv x+x$
4. Formula	Shows the **relationship** between **two or more variables**	Area of a rectangle = length x width or A= LxW
5. Simplifying Expressions	**Collect 'like terms'.** Be careful with negatives. x^2 and x are not like terms.	$2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
6. x times x	The answer is x^2 not $2x$.	Squaring is multiplying by itself, not by 2.
7. $p \times p \times p$	The answer is p^3 not $3p$	If p=2, then p^3=2x2x2=8, not 2x3=6
8. $p + p + p$	The answer is 3p not p^3	If p=2, then 2+2+2=6, not $2^3 = 8$
9. Expand	To expand a bracket, **multiply** each term **in the bracket** by the expression **outside** the bracket.	$3(m + 7) = 3x + 21$
10. Factorise	The **reverse** of **expanding**. Factorising is writing an expression as a product of terms by '**taking out' a common factor**.	$6x - 15 = 3(2x - 5)$, where 3 is the common factor.

Solving One Step Equations	goo.gl/lMchbr	goo.gl/XZGmT5	Collecting Like Terms	goo.gl/WPz2AW	goo.gl/rLngA7

Topic: Congruence and Similarity

Topic/Skill	Definition/Tips	Example
1. Congruent Shapes	Shapes are congruent if they are **identical** - **same shape** and **same size**. Shapes can be rotated or reflected but still be congruent.	
2. Congruent Triangles	4 ways of proving that two triangles are congruent: 1. **SSS** (Side, Side, Side) 2. **RHS** (Right angle, Hypotenuse, Side) 3. **SAS** (Side, Angle, Side) 4. **ASA** (Angle, Side, Angle) or **AAS** <u>ASS does not prove congruency.</u>	 $BC = DF$ $\angle ABC = \angle EDF$ $\angle ACB = \angle EFD$ ∴ The two triangles are congruent by AAS.
3. Similar Shapes	Shapes are similar if they are the **same shape but different sizes**. The proportion of the matching sides must be the same, meaning the ratios of corresponding sides are all equal.	
4. Scale Factor	The **ratio of corresponding sides** of two similar shapes. To find a scale factor, **divide a length** on one shape **by the corresponding length** on a similar shape.	 Scale Factor = 15 ÷ 10 = 1.5

Year 8 History: The Industrial Revolution

Key words	
Industrial revolution	A time of great change in Britain between 1750 to 1900
Population	The number of people living in a particular place
Invention	Something new which is created, can be an object or an idea
Economy	The system of how money is used within a particular country
Agriculture	The process of producing food, and fibres by farming of certain plants or raising animals
Urbanisation	The increase in the proportion of people living in towns and cities
Sanitation	The system that disposes of human waste
Mass production	The production of many products in one go e.g. textiles
Industry	The process of making products by using machines and factories

From 1750 Britain went through a process of change:

- Agriculture – New tools, fertilizers and harvesting techniques were introduced, resulting in increased productivity and agricultural prosperity.
- Industry – Factories sprung up all over the country creating more efficient ways to produce goods such as wool, cotton and coal. The increase in factories brought thousands of new jobs.
- Transport and communications – Thomas Telford built roads and canals in the 1700s and George Stephenson and Isambard Kingdom Brunel oversaw the 'Railway Mania' of the 1800s. There had previously been no very fast way of transporting goods and people around the country.
- Technology – There were many scientific discoveries and technological inventions that changed society and industry. Changes to sanitation and medical treatment such as the work of John Snow and Edward Jenner improved people's quality of life.

KEY INVENTIONS: The Steam Engine, Water Frame, Spinning Jenny and Locomotive

Factory working conditions

Long working hours: normal shifts were usually 12–14 hours a day, with extra time required during busy periods

Low wages: a typical wage for male workers was about 15 shillings (75p) a week, but women and children were paid much less, with children three shillings (15p). For this reason, employers preferred to employ women and children

Cruel discipline: Frequent "strapping" (hitting with a leather strap). Other punishments included nailing children's ears to the table, and dowsing them in water butts to keep them awake

Accidents: forcing children to crawl into dangerous, unguarded machinery led to many accidents and deaths

Health: The air was full of dust, which led to chest and lung diseases and loud noise made by machines damaged hearing.

Living conditions

Overcrowding: There were not enough houses in the cities

Disease: Typhus, typhoid, tuberculosis and cholera. low standard housing and poor-quality water supplies all helped spread disease.

Waste disposal: gutters were filled with litter. Human waste was discharged directly into sewers, into rivers

Poor quality housing: Built very close together so there was little light or fresh air inside. Houses did not have running water and people found it difficult to keep clean

Lack of fresh water: People could get water from streams, wells and stand pipes, but this water was often polluted

Factory owners such as Robert Owen argued improving conditions for workers would bring better profits. This influenced parliament to pass Factory Acts but many workers still lacked protection and a political voice

Year 8 History: Slavery

Key words	
Slavery	A relationship where one person has absolute power over another. They control their life, freedom and wealth
Trade Triangle	The name of the system for trading slaves across the world
Middle Passageway	The names used to describe the journey from Africa to America for slaves, it took up to 2 months
Plantation	A large farm that slaves worked on to produce cotton, tobacco and sugar
Abolition	Is the act of putting an end to something by law e.g. slavery.
The Slavery Abolition Act 1833	The Act passed in Britain that abolished slavery.

Who benefitted from the slave trade?

Plantation Owners – Grew 'cash' crops of sugar, tobacco, coffee, spices and cotton for sale back in Europe

African Tribal Leaders – Captured slaves through war between rivals over land. They would then trade their captures for weaponry and gunpowder to increase their power in their native land

British Business Men – Areas such as Liverpool and Bristol where the ships were built and goods imported got extremely rich

African Slaves – Some slaves worked in the plantation owner's house as butlers, cooks or housemaids. They were able to learn new skills, such as cooking and cleaning. They were often dressed in finer clothing and given a better diet than those that worked in the fields

During the 19th century Britain saw its empire grow significantly. It was regarded as a great source of wealth and status for Britain, however this came at a terrible human cost in the Transatlantic Slave Trade.

Slaves were traded across the world. Ships were loaded in England with goods such as guns, cloth and salt. This was taken to Africa and traded for slaves. The ships then went on a 2-month journey known as the Middle Passageway to the Caribbean. Here the slaves were sold to work in the cotton plantations and farms. The ship was then loaded with sugar and cotton, to be taken back to England to be sold for huge profits.

Slaves suffered through terrible conditions and many died during the journey. They were packed into the ship tightly and laid down for most of the journey. They were severely punished should they disobey orders. Slaves were chained up for the entire journey; diseases spread quickly. Many threw themselves overboard.

Why was Slavery abolished?	Abraham Lincoln was against slavery. It was abolished on the 31st January 1865 but this did lead to a civil war in the USA	Economics: Sugar plantations closed as cheap sugar could be bought from Brazil and Cuba
Slave rebellions such as Nat Turner's Revolt	Key Individuals: Granville Sharp and Thomas Clarkson fought freedom cases in court. Olaudah Equiano sold his story. Press and publicity influenced attitudes against slavery	Religion – Christian groups, such as the Quakers, thought that slavery was a sin. William Wilberforce used his position as MP to campaign for change

Components of *Physical* Fitness

Aerobic Endurance – The ability of the cardiorespiratory system to work efficiently, supplying nutrients and oxygen to working muscles during sustained physical activity.

Muscular Endurance – The ability of the muscular system to work efficiently, where a muscle can continue contracting continuously against a light to moderate fixed resistance load.

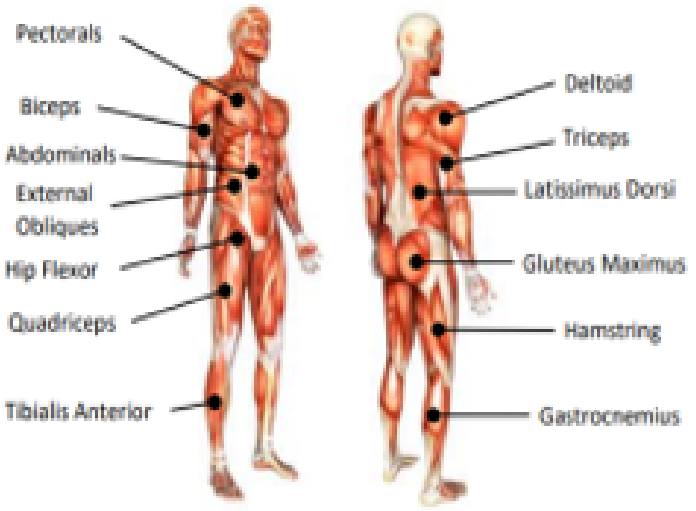
Speed – The ability to cover a distance quickly. There are 3 types of speed (Accelerative speed, Pure speed and Speed Endurance. This is calculated by Distance travelled divided by the time taken.

Muscular Strength – The maximum force, measured in kilograms (Kg) or newtons (N) that can be generated by a muscle or group of muscles.

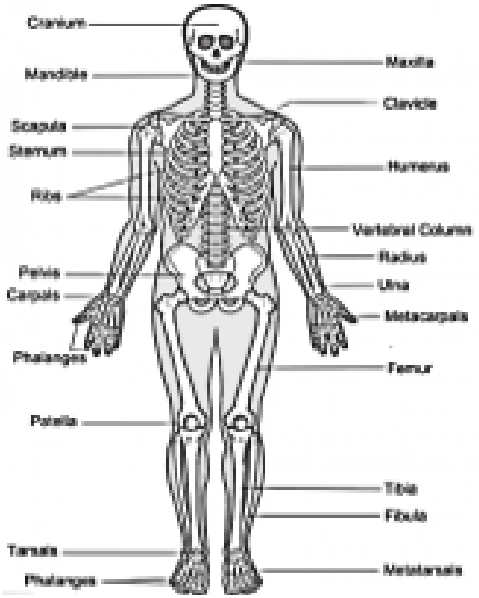
Flexibility – The adequate range of motion in all joints of the body and the ability to move a joint fluidly through its complete range of movement.

Body Composition – The ratio of fat to fat-free muscle mass. Sporting success is a combination of body composition and athletic ability.
https://www.youtube.com/watch?v=KycE8YJeaEI

Structure of the Muscular system



Structure of the Skeletal system



Components of *Skill-related* Fitness

Agility – The ability of a sports performer to quickly and precisely move or change direction without losing balance or time

Balance – The ability to maintain your centre of mass over a base of support. There are two forms of balance (static which is maintaining balance in a stationary position and Dynamic which is maintaining balance while in motion)

Co-ordination – The ability of the body to work together to move smoothly and accurately

Power - The ability to use strength and speed. It is the work done in a unit of time and is calculated in the following way Power- = Force (Kg) x Distance (m) / time (mins or seconds)

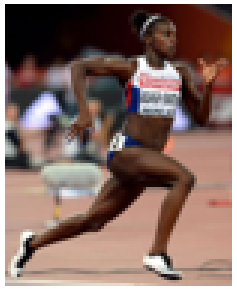
Reaction time – The time taken for a sports performer to respond to a stimulus, for example, the time taken for a sprinter to react to the starter gun.

https://www.youtube.com/watch?v=nJleyUBesI8

DID YOU KNOW…?

The recommended safe heart rate for an individual during exercise is called your **Maximum Heart Rate (HR max)**. To estimate your HR max you need the following formula: **MAXIMUM HEART RATE = 220 – Your AGE**. For example, if you are 20 Years old your HR max would be 220 - 20 = 200 beats per minute (bpm)

It is important to understand that different sports and sports performers require different aspects of fitness. Many sports need the same types of physical and skill related fitness, however some a unique and require specific components.



Dina Asher-Smith is a British and World Champion sprinter. She needs to have **speed, power and reaction time** to cover as much distance as possible, respond to the starter's pistol and move powerfully out of the blocks to get a good start. It is also important for sprinters to have excellent **muscular strength and muscular endurance**

Harry Kane will require similar components of fitness in order to be successful. **Speed and agility** will be essential to move quickly into position avoid defenders when he has possession of the ball. He will also need a very high-level of **aerobic endurance and muscular endurance.**

Can you think of other sports performers who would require different components of fitness?

Warming up and cooling down

Components of a warm up:

- Pulse raiser
- Stretches
- Skill related

5 reasons why we must warm-up

1.) Increases the temperature of the muscles, tendons and ligaments, which reduces the chances of injury.
2.) Increases heart rate and body temperature safely, which reduces chances of injury.
3.) Increases flexibility, which aids flexibility.
4.) Mentally prepares you for exercise, which can help improve performance.
5.) Increases oxygen delivery to the working muscles, which supports performance

6 reasons why we must cool down

1.) Gradually returns body temperature, breathing and heart rate back to their resting rate.
2.) To mentally unwind.
3.) To remove lactic acid, helping to prevent DOMS (Delayed Onset Muscle Soreness)
4.) To remove carbon dioxide and waste products.
5.) Improves flexibility.
6.) Avoids blood from gathering in muscles (pooling), which can cause dizziness

https://www.nhs.uk/live-well/exercise/how-to-warm-up-before-exercising/
https://www.nhs.uk/live-well/exercise/how-to-stretch-after-exercising/

Some key terminologies to learn and remember

Aerobic Endurance	**Muscular Endurance**	**Muscular Strength**	**Speed**	**Flexibility**	**Body Composition**
Pulse Raiser	**Stretches**	**Skill related**	**Gastrocnemius**	**Hamstring**	**Quadriceps**
Gluteus Maximus	**Pectorals**	**Biceps**	**Triceps**	**Pectorals**	**Oblique**
Tibia	**Fibula**	**Humerus**	**Femur**	**Radius**	**Ulna**
Scapula	**Clavicle**	**Vertebral Column**	**Cranium**	**Ribs**	**Sternum**
Agility	**Power**	**Balance**	**Co-ordination**	**Reaction Time**	**Maximum Heart Rate**

Principles of training

F – **Frequency – How often you train**

I – **Intensity – How hard you train**

T – **Time – How long you train**

T – **Type – How specific your training should be**

Think back to a sport you have played and consider the training you would need to complete in order to perform to your best. The FITT principle ensures you are working at a level that will challenge you. If you are not working hard enough, your body will not adapt and your fitness will not improve.

An example of the FITT principle in action….

Katarina Johnson-Thompson is a Team GB athlete and competes in the Heptathlon. Katarina has begun circuit training to improve her fitness to be able to compete in her seven different events. After 2 weeks, she feels her sessions should last longer. **Which principle is this focusing on?**

After one month, Katarina increases the number of sessions she takes part in. **The amount of sessions over a period of time is known as what?**

Katarina is now benefiting from her circuit training but is now looking to add more variation to her sessions. **Which principle would she be using if she wanted to change the training programme?**

One year before the next Olympic games, Katarina needs to step up her training programme. **Name the component of the FITT principle she would use to increase the difficulty of the training.**

Exercise intensity: The Borg scale (RPE – Rating of Perceived Exertion)

RPE	Intensity
6	No exertion
7	
8	
9	
10	
11	Light exertion
12	
13	Somewhat hard
14	
15	Hard (Heavy)
16	
17	Very Hard
18	
19	
20	Maximal Exertion

This scale measures how hard performers think they are working. It can also be used to measure Heart Rate and training zones.

(RPE x 10 = Heart Rate)

Additional Principles of training

S – **Specificity**

P – **Progressive Overload**

A – **Adaptability**

R – **Reversibility**

V – **Variation**

I – **Individual Needs**

R&R – **Rest and Recovery**

Methods of training

Circuit training – This involves a number of different activities that can be sport-specific or tailored to help improve certain levels of fitness.

Continuous training – This is training at a steady pace, moderate intensity to develop aerobic endurance. At least 30 minutes of steady running is an example of continuous training.

Fartlek training – This is a form of continuous training but the intensity is changed by running at different speeds over different terrains.

Interval training – This method requires periods of exercise followed by rest and recovery periods.

Plyometric training – This training develops sport-specific explosive power and strength.

Flexibility training – The method to develop flexibility at a joint. This is conduction using stretching. The three stretching categories are Static, Ballistic and Proprioceptive Neuromuscular Facilitation (PNF)

Speed training – Speed training can take many forms and can be sport specific. The three types of sprints are Acceleration, Interval and Hollow sprints.

Weight training – Weight training is a form of interval training and involves using reps and sets of reps.

Things to consider

Think about the methods of training and consider which sporting activities would require each method. Consider, football, badminton, rugby, netball, gymnastics and athletics. **When would you require each method of training?**

Now consider the principles of training. **Can you explain how one of the methods of training could use the FITT or additional principles of training?**

Your turn

Attempt to answer the following questions to help you understand.

1. Why is variation important in training for a sporting activity?
2. Give three examples of the circuit training sessions you could include to improve your muscular endurance
3. Which type of Olympic athlete is most likely to use continuous training?
4. Why would a 100m sprinter feel like they are at maximal exertion on the RPE scale?
5. Can you name 2 advantages and disadvantages of interval training?
6. What method of training would be best suited to a footballer and why?
7. Give an example of how a weight lifter could increase the intensity of their training.
8. How long would you need to exercise for to be taking part in continuous training?
9. Can you find at least one difference between hollow and acceleration sprints?
10. You are planning to train for a 10k fun run. Plan a training programme which includes methods of training and the FITT principle.

Can you challenge yourself to complete the beginner's push-up challenge?

Simply complete the amount of push-ups for each day, until you complete the challenge.

What did you feel when completing the challenge?

How has your muscular strength improved?

Some key terminologies to learn and remember

Frequency	**Intensity**	**Time**	**Type**	**Continuous training**	**Interval training**
Speed training	**Fartlek training**	**Weight training**	**Circuit training**	**Plyometric training**	**Specificity**
Progressive Overload	**Adaptation**	**Individual needs**	**Rest and Recovery**	**Reversibility**	**Variation**

Extension activities

Consider joining a club or team with in the Open Academy.
Join a club or team outside of the Open Academy and tell your teacher of your experiences.
Watch online clips of sporting skills and games for the sports you take part in at the Open Academy.
Create posters or informational material to promote your favourite sport and fitness activities.

Year 8 Spring Term Spanish Knowledge Organiser

El tiempo libre (1.5); En la ciudad (1.6)

En mi tiempo libre	**In my free time**
¿Qué haces en tu tiempo libre?	What do you do in your free time?
Voy al cine.	I go to the cinema.
Voy a la piscina.	I go to the swimming pool.
Voy de compras.	I go shopping.
Salgo con mis amigos.	I go out with my friends.
Hago mis deberes.	I do my homework.
Monto en bicicleta.	I ride my bike.
Escucho música.	I listen to music.
Veo la televisión.	I watch television.
Navego por internet.	I surf the net.
Juego con mi ordenador.	I play on my computer.

¿Con qué frecuencia?	***How often?***
todos los días	*every day*
los lunes	*on Mondays*
una vez por semana	*once a week*
dos veces a la semana	*twice a week*
los fines de semana	*at weekends*
nunca	*never*

Los deportes	**Sports**
¿Qué deportes haces?	What sports do you do?
Hago atletismo.	I do athletics.
Hago ciclismo.	I do/go cycling.
Hago equitación.	I do/go riding.
Hago esquí.	I do/go skiing.
Hago natación.	I do/go swimming.
Hago patinaje.	I do/go skating.
Juego al baloncesto.	I play basketball.
Juego al fútbol.	I play football.
Juego al hockey.	I play hockey.
Juego al tenis.	I play tennis.
Juego al voleibol.	I play volleyball.
No hago deporte.	I don't do any sports.

¿A qué hora … ?	***At what time … ?***
¿Qué hora es?	*What time is it?*
Es la una.	*It's one o'clock.*
Son las dos.	*It's two o'clock.*
Es la una y cinco.	*It's five past one.*
Son las dos y diez.	*It's ten past two.*
Son las tres y cuarto.	*It's quarter past three.*
Son las cuatro y veinte.	*It's twenty past four.*
Son las cinco y veinte cinco.	*It's twenty-five past five.*
Son las seis y media.	*It's half-past six.*

Year 8 Spring Term Spanish Knowledge Organiser

El tiempo libre (1.5); En la ciudad (1.6)

Son las siete menos veinticinco.	*It's twenty-five to seven.*
Son las ocho menos veinte.	*It's twenty to eight.*
Son las nueve menos cuarto.	*It's quarter to nine.*
Son las diez menos diez.	*It's ten to ten.*
Son las once menos cinco.	*It's five to eleven.*
Son las doce.	*It's midday/midnight.*
de la mañana	*in the morning*
de la tarde	*in the afternoon*
de la noche	*in the evening*
¿A qué hora comes?	*At what time do you eat?*
¿A qué hora vas al cine?	*At what time do you go to the cinema?*
¿A qué hora escuchas música?	*At what time do you listen to music?*
¿A qué hora sales con tus amigos?	*At what time do you go out with your friends?*
¿A qué hora vas de compras?	*At what time do you go shopping?*
¿A qué hora navegas por internet?	*At what time do you surf the net?*
¿A qué hora ves la televisión?	*At what time do you watch TV?*
A las dos.	*At two o'clock.*

¿Qué te gusta hacer?	***What do you like doing?***
¿Qué te gusta hacer en tu tiempo libre?	*What do you like doing in your free time?*
¿Qué no te gusta hacer?	*What don't you like doing?*
Me gusta …	*I like …*
Me gusta mucho …	*I really like …*
No me gusta …	*I don't like …*
No me gusta nada …	*I don't like … at all.*
Me encanta …	*I love …*
Prefiero …	*I prefer …*
jugar al fútbol	*playing football*
hacer atletismo	*doing athletics*
navegar por internet	*surfing the internet*
ir al cine	*going to the cinema*
salir con mis amigos	*going out with my friends*
ver la televisión	*watching television*
hacer mis deberes	*doing my homework*
escuchar música	*listening to music*
ir de compras	*going shopping*
hacer natación	*going swimming*
¿Por qué?	*Why?*
Porque es …	*Because it's …*
aburrido	*boring*
barato	*cheap*

Year 8 Spring Term Spanish Knowledge Organiser

El tiempo libre (1.5); En la ciudad (1.6)

bueno	*good*
caro	*expensive*
divertido	*amusing*
fácil	*easy*
interesante	*interesting*
sano	*healthy*

¿Qué vas a hacer mañana?	***What are you going to do tomorrow?***
¿Qué vas a hacer?	*What are you going to do?*
Voy a jugar al tenis.	*I'm going to play tennis.*
Va a escuchar música.	*He/She's going to listen to music.*
Vamos a ir de compras.	*We're going to go shopping.*
Vais a hacer natación.	*You're going to go swimming. (pl)*
Van a ver la televisión.	*They're going to watch television.*
mañana	*tomorrow*
la semana que viene	*next week*
este fin de semana	*this weekend*
en las vacaciones	*in the holidays*
to the beach.	

Palabras muy útiles	***Very useful words***
sobre todo	*above all*

Mi ciudad	***My town***
Vivo en …	*I live in …*
un pueblo	*a village*
una ciudad	*a town/city*
¿Cómo es tu pueblo?	*What's your village like?*
Es un poco/muy …	*It's a bit/very …*
bonito	*pretty*
feo	*ugly*
histórico	*historic*
moderno	*modern*
pequeño	*small*
tranquilo	*peaceful*
túristico	*appealing to tourists*
industrial	*industrial*
importante	*important*
grande	*big*
¿Cómo es tu ciudad?	*What's your town like?*
Es un poco/muy …	*It's a bit/very …*
bonita	*pretty*
fea	*ugly*
histórica	*historic*
moderna	*modern*
pequeña	*small*
tranquila	*peaceful*
túristica	*appealing to tourists*

Year 8 Spring Term Spanish Knowledge Organiser

El tiempo libre (1.5); En la ciudad (1.6)

industrial	*industrial*
importante	*important*
grande	*big*
Es la capital de …	*It's the capital of …*

una plaza de toros	*a bullring*
una tienda	*a shop*
unos/muchos museos	*some/many museums*
unas/muchas tiendas	*some/many shops*
Me gusta … porque …	*I like … because …*

En la ciudad	***In town***
¿Qué hay en la ciudad?	*What is there in town?*
Hay …	*There is/are …*
No hay …	*There isn't/aren't …*
un castillo	*a castle*
un centro comercial	*a shopping centre*
un cine	*a cinema*
un estadio	*a stadium*
un hospital	*a hospital*
un mercado	*a market*
un museo	*a museum*
un parque	*a park*
un polideportivo	*a sports centre*
una estación de autobuses	*a bus station*
una estación de trenes	*a train station*
una piscina	*a swimming pool*
una playa	*a beach*
una plaza	*a square*

Invitaciones	***Invitations***
¿Quieres ir … ?	*Do you want to go… ?*
Quiero ir …	*I want to go …*
al castillo	*to the castle*
al centro comercial	*to the shopping centre*
al cine	*to the cinema*
al estadio	*to the stadium*
al mercado	*to the market*
al museo	*to the museum*
al parque	*to the park*
al polideportivo	*to the sports centre*
a la piscina	*to the swimming pool*
a la playa	*to the beach*
a la plaza de toros	*to the bullring*
¿Cuándo?	*When?*
El lunes.	*On Monday.*
El martes.	*On Tuesday.*
El miércoles.	*On Wednesday.*
El jueves.	*On Thursday.*
El viernes.	*On Friday.*

Year 8 Spring Term Spanish Knowledge Organiser

El tiempo libre (1.5); En la ciudad (1.6)

El sábado.	*On Saturday.*
El domingo.	*On Sunday.*
¿A qué hora?	*At what time?*
A las diez de la mañana.	*At ten in the morning.*
De acuerdo.	*OK.*
Está bien.	*Fine.*
Bueno.	*Good.*
Vale.	*OK.*
Lo siento, no puedo.	*I'm sorry, I can't.*

El tiempo	***Weather***
¿Qué tiempo hace (en Madrid)?	*What's the weather like (in Madrid)?*
Hace buen tiempo.	*It's nice.*
Hace mal tiempo.	*It's bad.*
Hace calor.	*It's hot.*
Hace frío.	*It's cold.*
Hace sol.	*It's sunny.*
Hace viento.	*It's windy.*
Hay niebla.	*it's foggy.*
Hay tormenta.	*It's stormy.*
Llueve.	*It's raining.*
Nieva.	*It's snowing.*
Cuando llueve, voy al cine.	*When it rains, I go to the cinema.*
Cuando hace sol, voy a la playa.	*When it's sunny, I go to the beach.*

Las estaciones	**The seasons**
en primavera	in spring
en verano	in summer
en otoño	in autumn
en invierno	in winter

¿Cuándo?	**When?**
normalmente	normally
ahora	now
los fines de semana	every weekend
mañana	tomorrow
este fin de semana	this weekend
en las vacaciones	in the holidays

Palabras muy útiles	**Very useful words**
aquí	here
cuando	when
pero	but

NORTHERN LIGHTS MAGNETS AND ELECTROMAGNETS

Bar Magnets
Bar magnets have two poles, a North pole (N) and a South pole (S), **opposite poles attract and like poles repel.**
Magnets create magnetic fields. These cannot be seen. They fill the space around a magnet where the magnetic forces work, where they can attract or repel magnetic materials.
Although we cannot see magnetic fields, we can detect them using iron filings. The tiny pieces of iron line up in a magnetic field. We can draw simple magnetic field line diagrams to represent this. In the diagram, note that:

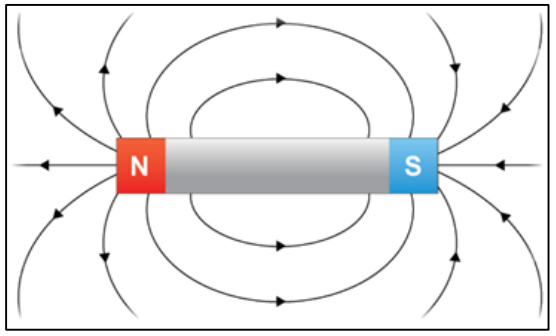
- **field lines have arrows on them**
- **field lines come out of N and go into S**
- **field lines are more concentrated at the poles.**

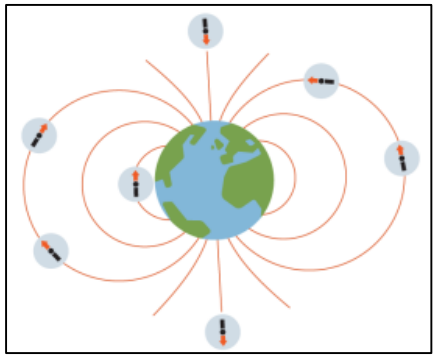
The **magnetic field is strongest at the poles**, where the field lines are most concentrated.
The Earth has a magnetic field because the core rotates, it acts like a giant bar magnet.

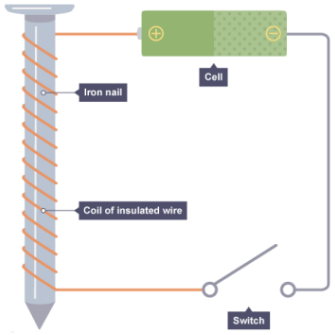
Key Terms	Definitions
Electromagnet	A magnet created by the flow of electricity in a wire
Magnetic Field	The area around a magnet, where the magnetic field acts

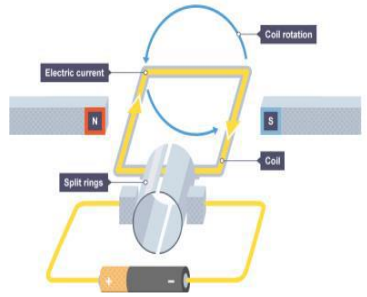
Electromagnets

When an electric current flows through a wire, it creates a magnetic field, this can be used to make **an electromagnet**, by making the wire into a coil.
You can increase the strength of an electromagnet by doing three things:
1. Increase the number of coils
2. Increase the current
3. Add a soft iron core



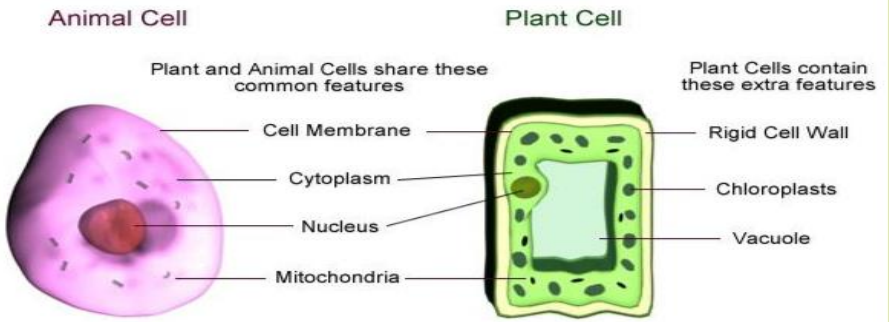






The motor effect: A simple electric motor can be built using a coil of wire that is free to **rotate between two opposite** magnetic poles. When an electric current flows through the coil, the coil experiences a force and moves. This is called the motor effect.

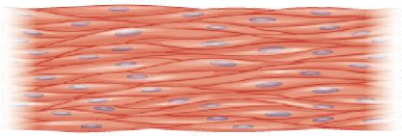
CELLS Reminder



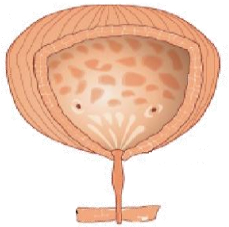
Key Terms	Definition
Cell wall	Made of cellulose, which supports the cell
Cell membrane	Controls movement of substances into and out of the cell
Cytoplasm	Jelly-like substance, where chemical reactions happen
Nucleus	Contains genetic information (chromosomes) made of DNA. Controls what happens inside the cell
Vacuole	Contains a liquid called cell sap, which keeps the cell firm
Mitochondria	Where most respiration reactions happen
Chloroplast	Where photosynthesis happens

Body organization
All living organisms are made up of one or more cells. **Unicellular organisms**, like amoebas, consist of only a single cell. **Multicellular organisms**, like people, are made up of many cells. Cells are considered the fundamental units of life.
The cells in complex multicellular organisms like people are organized into **tissues**, groups of similar cells that work together on a specific task. **Organs** are structures made up of two or more tissues organized to carry out a particular function, and groups of organs with related functions make up the different **organ systems.**

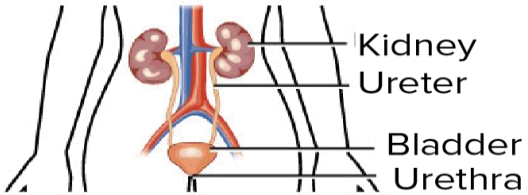
Muscle cell



Muscle tissue



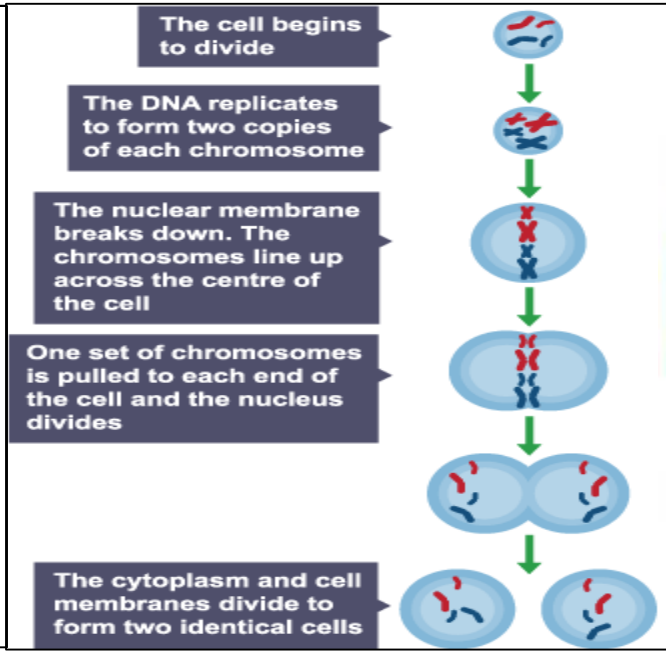
Organ (bladder)

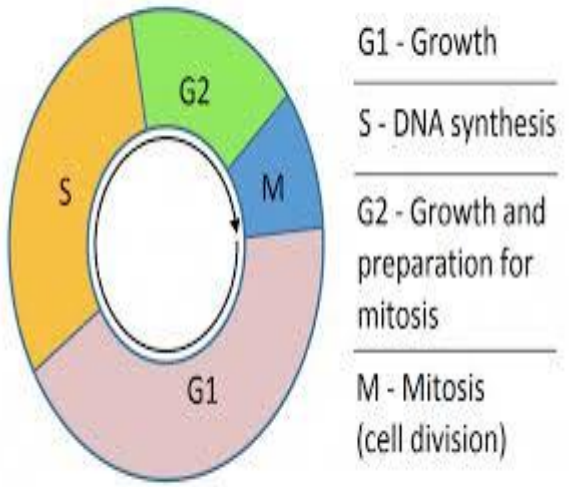


Organ system

The human cell nucleus contains 46 chromosomes or 23 pairs. They are ultimately long strands of coiled up DNA.

Cells are continually lost or made. All cells have a life cycle known as the cell cycle To make new cells the body carries out cell division in a process known as mitosis





POND LIFE (COMMUNITIES AND DISTRIBUTION OF SPECIES

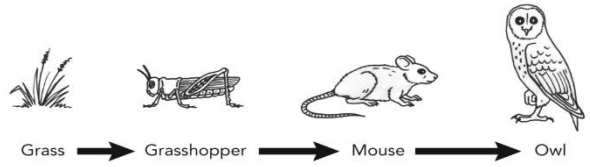
Environment	The conditions surrounding an organism; abiotic and biotic.
Habitat	Place where organisms live e.g. woodland, lake.
Population	Individuals of a species living in a habitat.
Community	Populations of different species living in a habitat.

Plants	*Animals*	*Extremophiles*
Cactus in dry, hot desert	Polar bear in extreme cold artic	Deep sea vent bacteria
No leaves to reduce water loss, wide deep roots for absorbing water.	Hollow hairs to trap layer of heat. Thick layer of fat for insulation.	Populations form in thick layers to protect outer layers from extreme heat of vent.

Organisms adaptations enable them to survive in conditions where they normally live.

Feeding relationships in a community

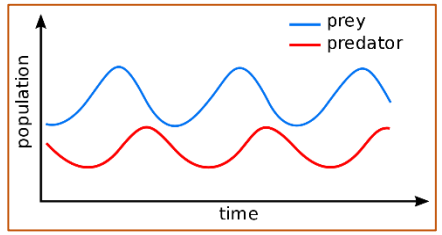
Producer	Primary consumer	Secondary consumer	Tertiary consumer



All food chains begin with a producer e.g. grass that is usually a green plant or photosynthetic algae.

Consumers that kill and eat other animals are predators and those eaten are prey.

In a stable community the numbers of predators and prey rise and fall in cycles.



Non-living (ABIOTIC) factors that affect a community	*Living factors (BIOTIC) that affect a community*
Living intensity.	Availability of food.
Temperature.	
Moisture levels.	New predators arriving.
Soil pH, mineral content.	
Wind intensity and direction.	New pathogens.
Carbon dioxide levels for a plant.	One species outcompeting so numbers are no longer sufficient to breed
Oxygen levels for aquatic organisms.	

Competition	Plants in a community or habitat compete with each other for light, space, water and mineral ions.
	Animals compete with each other for food, mates and territory.
Interdependence	Species depend on each other for food, shelter, pollination, seed dispersal etc. Removing a species can affect the whole community

MORE METAL MORE MONEY

(CHEMICAL CHANGES)

Increasing reactivity

Potassium	Please
Sodium	Send
Calcium	Charlie's
Magnesium	Monkeys
Aluminium	And
CARBON	**CRAZY!**
Zinc	Zebras
Iron	In
Lead	Lead
Copper	Cages
Silver	Securely
Gold	Guarded

The reactivity of a metal determines the method of extraction. Metals **above** carbon must be **extracted** using **electrolysis**. Metals **below** carbon can be extracted by **reduction** using **carbon**, coke, or charcoal. **Gold** and **silver** do not need to be extracted. They occur **native** (naturally).

	Reactions with water	Reactions with acid
Group 1 metals	*Reactions get more vigorous as you go down the group*	*Reactions get more vigorous as you go down the group*
Group 2 metals	*Do not react with water*	*Observable reactions include fizzing and temperature increases*
Zinc, iron and copper	*Do not react with water*	*Zinc and iron react slowly with acid. Copper does not react with acid.*

Displacement reactions

Displacement reactions involve a metal and a compound of a different metal. In a displacement reaction:
a more reactive metal will <u>displace</u> a less reactive metal from its compounds
Displacement reactions are easily seen when a salt of the less reactive metal is in the solution. During the reaction:
the more reactive metal gradually disappears as it forms a solution
the less reactive metal coats the surface of the more reactive metal

You can investigate the reactivity of metals using displacement reactions. The table shows the results from a series of experiments involving four metals and solutions of their salts. A tick shows where there is a visible reaction and a cross shows where there is no visible reaction.

	Magnesium	Zinc	Iron	Copper
Magnesium sulfate	✗	✗	✗	✗
Zinc sulfate	✓	✗	✗	✗
Iron sulfate	✓	✓	✗	✗
Copper sulfate	✓	✓	✓	✗
Reactions seen	3	2	1	0

MORE METAL MORE MONEY

(CHEMICAL CHANGES)

The reactivity of a metal determines the method of extraction. Metals **above** carbon must be **extracted** using **electrolysis.** Metals **below** carbon can be extracted by **reduction** using **carbon,** coke, or charcoal. **Gold** and **silver** do not need to be extracted. They occur **native** (naturally).

During electrolysis: In a solution or molten compound when electricity is passed through it **positive metal** ions move towards the **negative electrode. Negative non metal** ions move towards the **positive electrode.**

Low Grade Copper Ores: Small amount of copper.
1. Phytomining: Plants absorb **copper** ions from low-grade ore. **Plants** are **burned.** Copper ions dissolved by adding **acid. Use displacement** or **electrolysis** to extract pure Copper.
2. Bioleaching: Bacteria feed on low-grade ore Produce a **waste product** that contains **copper** ions
Use **displacement** or **electrolysis** to extract pure copper.

A **metal compound** within a **rock** is an **ore.** The metal is **often combined** with **oxygen.** Ores are **mined** and then **purified.**

Copper-rich Ores: Large amounts of copper.
1. Smelting: 80% of copper is produced this way. **Heat copper ore in a furnace with air.**
Then use electrolysis to purify the copper. **Expensive** as needs lots of heat and power.
2. Copper Sulphate: Add **sulphuric acid** to a copper ore. Produces copper sulphate. Extract copper using electrolysis or displacement.

Textiles – Equipment and Fabric

What is Textiles and what is a Textile Designer?

- A textile is a type of woven cloth.
- A textile designer comes up with innovative ideas, **designs** and prints for a variety of fabrics, clothing and non-clothing materials, furnishing materials, industrial fabrics and other related materials, using both natural and manmade fibres.

Tools and equipment

Embroidery Scissors
Used to cut off loose threads when sewing

Embroidery thread
Thick, colourful thread using for decoration in hand embroidery

Embroidery needle
Needle with a large eye so the thread ca fit through. Used to sew decoration onto fabric.

Embroidery hoop
Used to keep fabric taught (tight) so that it doesn't crease or bunch when sewing

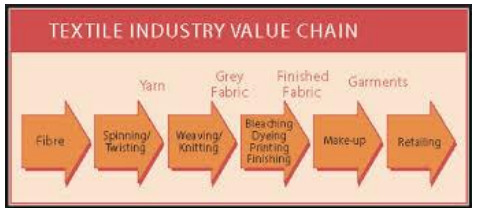
Unpicker
Used to cut through stitches and thread. Usually used to amend mistakes.

Sewing machine
Used to join fabric together, construct garments and textiles and also for decoration.

Example exam questions:

Give an example of a synthetic material. (1 mark)
Explain the term 'textile design'. (2 marks)
What is an unpicker used for?. (1 mark)
Name one different between a sewing needle and an embroidery needle. (1 mark)

Fabrics



Natural Fabrics

Cotton – produced from a cotton ball. Cotton is a soft breathable fabric used to make many fabrics for many uses. Can hold strong, bright colours when dyed.

Linen – produced from the flax plant. Linen is a strong, absorbent fabric and dries quickly.

Wool – produced commonly from sheep but also other animals such as goats and rabbits. Wool is insulating and water resistant.

Silk – the silk work produces a silk cocoon which is processed into silk. Silk is light and comfortable, has good insulating properties (warm in winter, cool in summer) and is strong.

Synthetic fabrics

Polyester – manmade from coal, water and petroleum. Polyester resilient fabric and can with stand a lot of wear an tear, holds dye well.

Nylon – manmade from petroleum, gas, coal and other materials. Nylon is a silky, strong and elasticated fabric.

Regenerated Fibre - Viscose is known as a regenerated fibre as it is made from cellulose found in wood pulp. It is often regarded as only partially man-made. It's a light, airy, breathable and biodegradable.

Bonded fabrics - Blended fabrics are created when two or more different kinds of fibres are mixed together to create a new fabric with unique properties e.g. polycotton.

Textiles – Decorative techniques

Applique

Applique is attaching shapes and patterns of fabric onto a larger piece of fabric to form a picture or pattern. Is it commonly used as decoration. The fabric can be attached by bondaweb or sewed using a machine or by hand.

Materials Required

Bondaweb, a variety of fabrics, tracing paper (if required and an iron.

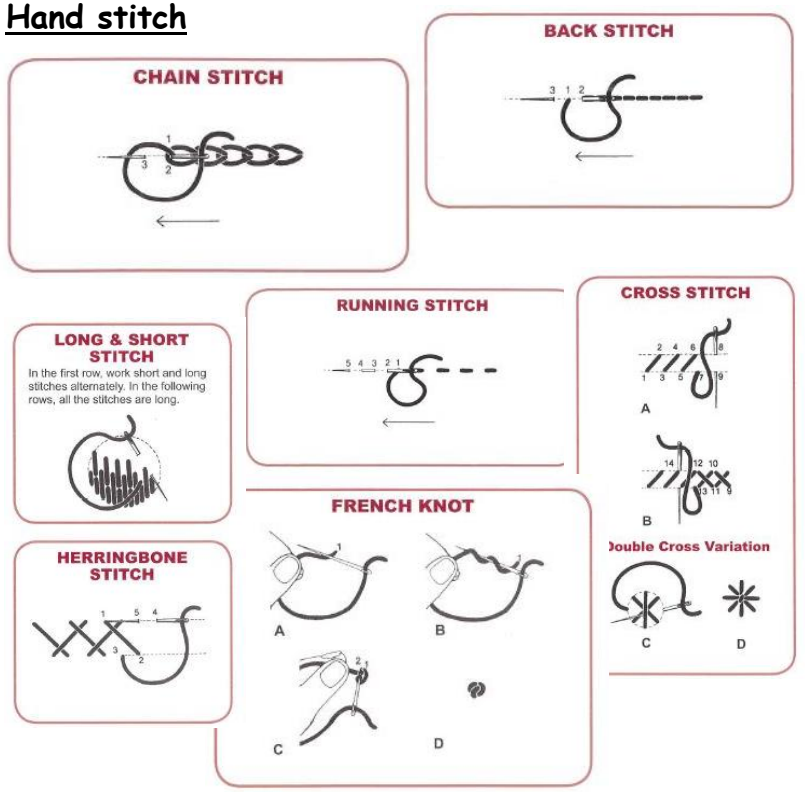
How to do Applique

- Draw a simple design
- Trace the design onto the Bondaweb - on the smooth side
- When using letters or words, you must do a mirror image using tracing paper
- Label each colour that you want to use on your design
- Select each colour fabric from the scrap fabric draws
- Cut roughly each section of the Bondaweb – this will be ironed onto each colour
- Iron onto the coloured fabric that you have selected – place the Bondaweb and the fabric in between two pieces of paper in case the design signs to the iron or the ironing board
- Cut out each shape
- Collect a larger swatch to put your applique onto
- Return to the iron, with your swatch and sections of your design
- Peel back the paper from your cut out design and lay onto the larger swatch
- Make sure that the applique is the correct way – place the design between two pieces of paper incase the design sticks to the iron or the ironing board
- Iron onto the larger swatch

Example exam questions:

Explain how to complete an applique sample when using Bondaweb (8 marks)
List 3 piece of equipment needed when completing hand embroidery. (3 marks)
Name one disadvantage of hand embroidery. (1 mark)
Explain what the term 'applique' means. (2 marks)

Hand stitch



Materials required

Embroidery needle, thread, fabric, embroidery hoop.

Advantages of hand embroidery:

- Control over length of stitches
- Range of stitches to choose from

Disadvantages of hand embroidery:

- Time consuming
- Must be tied off correctly or will unravel
- Thread can get caught and tangled.

Patterns and the sewing machine

Patterns

Patterns are used as a template when making textiles and fashion garments. They instruct you where to cut, sew, add zips and any other details you may need to know.

Pattern symbols

Notch – Pattern notches are small marks made on the pattern to ensure that one pattern piece will match up to the pattern next to it.

Grain line – this is the direction on the fabric that the pattern should be cut. Some things are cut on the grain line, other are cut on the bias which is diagonal to the grain line.

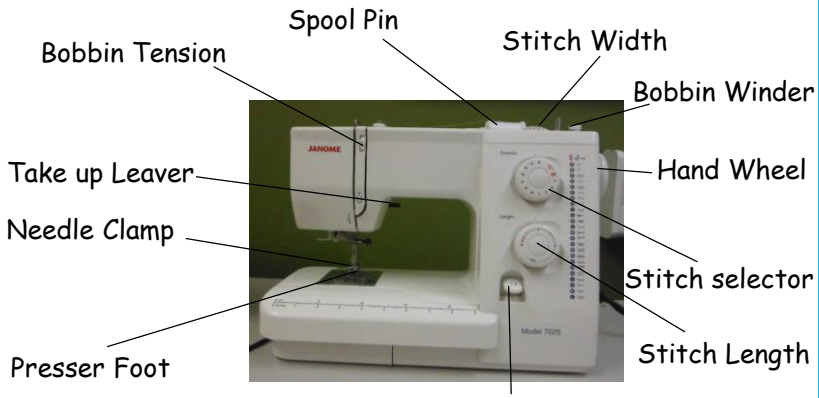
Seam Allowance – This is the space between the edge of the fabric and the sew line. Cut along this line when cutting out fabric from a pattern, this allows room for sewing it together. The seam allowance is usually 1cm.

Sewing line – Sew along this line when constructing your textile/garment.

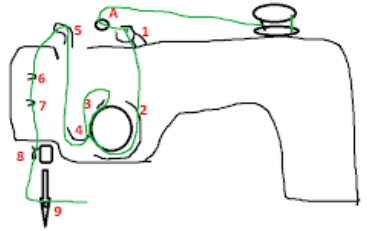
Example exam questions:

Why are notches used on pattern pieces. (2 marks)
Explain the advantages of using a sewing machine to construct textiles over hand sewing. (3 marks)
Why would the reverse stitch button be used when constructing a textile? (2 marks)
What is a bobbin used for? (2 marks)
Why is a seam allowance important? (3 marks)
What does this symbol mean on a pattern? (2 marks)
Name two disadvantages of using a sewing machine for embroidery. (2 marks)

Sewing Machine



How to thread a sewing machine



Materials required

Sewing machine, fabric, thread, scissors

Advantages of sewing machines

- Quick embroidery
- Secure stitching and construction
- Quick to use a range of stitches are available

Disadvantages sewing machines:

- Must understand how to use a sewing machine
- Can take some time to unpick incorrect stitches
- Less control over stitch lengths
- Cannot use wide a variety of different threads

Health and Safety

Micro-organisms

Micro-organisms are tiny forms of life. They can only be seen under a microscope and are sometimes called microbes.
They spoil food and make it unsafe to eat because they contaminate it with their waste products, their physical presence and the toxins they produce.

What micro-organisms can spoil food and make it unsafe to eat?

There are three groups of micro-organisms that you need to know about that spoil food and cause food poisoning. These are..

- Bacteria
- Moulds
- Yeasts

Micro organisms need 5 conditions to grow and multiply:

1. A warm temperature
2. Plenty of moisture (water)
3. Plenty of food
4. The right PH level (not too acidic or alkaline
5. Enough time (bacteria split every 10-20 minutes)

High risk foods

- High risk food have ideal conditions for bacteria
- High risk foods are ready to eat foods that could grow harmful bacteria
- They are moist and high in protein which is food for bacteria.
- High risk foods have a short shelf life – you can't keep them for long or the bacteria might multiply to dangerous levels.

Examples of high risk foods:

Cooked meat, fish and poultry, dairy products (eggs, cheese etc.), gravies, stocks and sauces, shellfish, cooked rice.

Example exam questions:

What five conditions to bacteria need to grow and multiply? (5 marks)
What is a high risk food? (5 marks)

Storing food safely

Cooking (75°C)	The danger zone (5°C-63°C)
• Cooking food above 75°C kills bacteria • Re-heat food properly, only once. Reheat food so 75°C for at least 3 minutes • Check the food is 75°C with a temperature probe	• Bacteria can grow and multiply quickly between 5°C to 63°C. • This is called the danger zone • The optimum temperature for bacterial growth is 37°C
Chilling (0°C – 5°C)	**Freezing (-18°C)**
• Keeping food between 0°C and 5°C slows down the growth of bacteria • This extends the shelf life of food • Chilling food doesn't change the properties much – food looks and tastes the same	• Freezing food below -18°C stops bacteria growing – they become dormant • Freezing generally extends shelf life and the nutrients aren't lost • It doesn't kill the bacteria though. They become active again once the food defrosts.

Preparing self for cooking

- Tie hair back to prevent hair and dandruff falling in food
- Take off coats and blazers
- Wear an apron to prevent bacteria transferring from our clothes to our food
- Wash hands with hot soapy water to kill bacteria

Preparing the room for cooking

- Sanitise all work surfaces
- Check equipment is clean and dry
- Tuck all stools in as they can be a trip hazard
- Put all high risk foods in the fridge to slow bacteria growth

Wash your hands after:

- Coughing
- Sneezing
- Tying shoe laces
- Going to the toilet
- Touching hair or face

Nutrition

Nutrients

Macro nutrients – needed in large quantities in the diet. The three macro nutrients are: PROTEIN, CARHOHYDRATES, FAT
Micro nutrients – needed in small quantities in the diet. The two micro nutrients are: VITAMINS, MINERALS

Protein

Proteins are made up of amino acids, often referred to as the 'building blocks' of the body. Non-essential amino acids can be made by the body, how ever, essential amino acids cant be made by the body and we must get from the food we eat.
High biological Value (HBV) proteins contain all the essential amino acids we need and generally come from animal sources. Low biological value (LBV) proteins are missing one of more essential amino acids and generally come from plant sources.

Food sources

HBV - beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk
LBV – beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

Function

Needed for growth from childhood to adulthood and the growth of nails, hair and muscle mass, repair of muscles, tissues and organs after illness or injury and to make enzymes for digestion and antibodies to stop us getting ill.

Example exam questions:
What are the two types of fat? (2 marks)
Explain the difference between a HBV and LBV protein (6 marks)

Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

Food sources

Starchy – bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.
Simple – fruit, some vegetables, chocolate, sweets, biscuits, cakes

Function

Starchy/complex carbohydrates are digested slowly and provide long term energy.
Sugary/simple carbohydrates are digested slowly and provide short term energy

Fat

There are two types of fat, saturated and non saturated.
Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.
Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant based sources.

Food sources

Animal –beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk
Plant – vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds

Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

Dietary related health problems

Too much sugar can cause:

1. Weight gain (which can lead to obesity)
2. Tooth decay
3. Diabetes (your body cannot produce enough/any insulin to regulate your blood sugar levels)

Too much salt can cause:

1. High blood pressure (this can increase your risk of heart disease and a stroke).

Too much saturated fat can cause:

1. Weight gain (which can lead to obesity)
2. High cholesterol (this narrows arteries making it harder for the blood to travel around, putting you at risk of heart disease).

The Eatwell guide

The Eatwell guide

The Eatwell guide is a government guide designed to show you the proportions of different foods groups you should eat over a day or more.

Tips on making healthy choices from the eatwell guide:

Fruit and vegetables: eat 5 portions of fruit and vegetables a day, this should make up 1/3 of your plate a day, fresh, frozen, canned, dried and fruit juice/smoothies all count, don't exceed 150ml of fruit juice/smoothie a day as it can cause tooth decay, try snacking on fruit over high sugar and fat foods,

Potatoes, bread, rice, pasta and other starchy carbohydrates: choose non-sugary cereals, leave the skin on potatoes, choose wholemeal options of foods such as bread, rice and pasta.

Oils and spreads: choose unsaturated fats such as vegetable oils and margarine over butter, use in small amounts.

Dairy and alternatives: choose lower fat options such as skimmed milk and low fat and salt cheese, choose low sugar yogurts and add fruit as a natural sweetener.

Beans, pulses, fish, eggs, meat and other proteins: eat more beans and pulses as they are high in fibre and fill you up for longer, cut the visible fat off meat, choose lower fat meat options, eat 2 portions of fish a week.

Water: drink 2-3 litres of water a day, choose lower sugar option drinks.

8 Guidelines for Healthy Eating

1. Base your meals on starchy carbohydrates	• This should make up 1/3 of your diet • Chose high fibre, whole grain options e.g. pasta, rice • Try to include one starchy food with each meal	5. Eat less salt – no more than 6g a day for adults	• Eating too much salt can raise blood pressure, this puts you at high risk of heart disease or a stroke • Most of the salt you eat is already in food, check the labels to help you choose low salt options
2. Eat lots of fruit and vegetables	• Try adding a banana to cereal or swap crisps for fruit • Always serve main meals with two vegetables • Beans and pulses can count as 1 of your 5 portions	6. Get active and be a healthy weight	• Regular exercise can reduce your risk of getting serious health conditions • Aim for 150 minutes of exercise a week
3. Eat more fish – including one portion of oily fish	• Fish is a source of protein and vitamins and minerals • It contains omega 3 (good for eyes, skin, brain heart) • Oily fish includes: salmon, herring, mackerel, sardines	7. Don't get thirsty	• 6-8 cups a day, 2-3 litres • Avoid sugary and fizzy drinks as they're bad for teeth • Remember fruit juice and smoothies is also high in sugar
4. Cut down on saturated fat and sugar	• All types of fat are high in energy and should be eaten in small amounts • Excess sugar can cause weight gain and tooth decay	8. Don't skip breakfast	• Kick starts you for the day • choose healthy low fat, sugar and salt and high fibre • Choose low sugar cereals and granola

Seasonal Produce and Air Miles

Seasonal produce

Seasonality of **food** refers to the times of year when the harvest or the flavour of a given type **food** is at its peak. This is usually the time when the item is the cheapest and the freshest on the market.
The **food's** peak harvest time usually coincides with when its flavour is at its best.

Advantages of local, seasonal foods foods

- Often cheaper as it is not imported and there is a larger quantity of the food available
- Fresher as it has taken less time to travel and less storage time.
- High in nutrients – fruit and vegetables lose nutrients over time after being picked. With less travel and storage time, they lose less nutrients.
- Tastes better as it is fresher and higher in nutrients.

Disadvantages of local, seasonal foods

- There is a smaller range of foods available
- Not importing foods means not supporting farmers in developing countries.

Examples of UK grown produce

Autumn	Winter	Spring	Summer
Apples Mushrooms Beetroot Pears Potatoes Pumpkin Garlic	Cauliflower Sprouts Suedes Sweet potato Broccoli Oranges Cabbage	Strawberry Carrot Lettuce Leeks Asparagus Peas Spring onion	Cucumber Aubergine Tomato Raspberry Courgette Onion Corn on the cob

Food miles

- If we're not eating fresh, seasonal food grown in the UK, the food has travelled from abroad to reach us.
- Food miles are clocked up by the fresh fruit and vegetables arriving by plane from across the globe.
- Then the fruit gets loaded in to lorries and driven across various parts of the country to supermarkets
- Then once on a shelf the products are then bought by people who then drive it back home.

Food miles are the measure of the distance a food travels from field to plate. This travel adds substantially to the Carbon Dioxide emissions that are contributing to climate change. The amount of food being flown into the UK doubled in the 1990s and is predicted to rise further each year. Consumers are also directly responsible for increased food miles. We now travel further for our shopping and use the car more often to do it.

Advantages of importing foods

- A wide range of foods are available in our shops all year round e.g. strawberries at Christmas.
- Less energy is used growing certain crops in poorer countries as there is no need for heating glasshouses etc. (less damage to the environment)

Disadvantages of importing foods

- Its harder to monitor food production standard and conditions for workers in countries far away.
- Taxes on imported foods means farmers in developing countries don't always receive a fair price for their foods.
- Food that has travelled a long distance is less fresh by the time it reaches the shelves
- People do not buy local produce as much so local UK farmers don't make as much money
- Increased road traffic as more food is being transported around the holiday
- There is increased used of fuel for the road transport plus the carbon dioxide emissions related
- The amount of food flown into the UK increases each year which means the UK is not self-sufficient
- Pressure to expand food production has led to the destruction of environments in some poorer countries
- Over 60% of household waste is a result of food packaging
- Fresh spinach looses over 90% of its vitamin C in the first 24 hours of harvest

Examples of imported foods

Pineapple, mango, tomatoes, celery, potatoes, bananas, nuts, sugar, chicken, lamb, beef, fish, oil, cocoa beans, grapes, tea, coffee, rice, soya bean, herbs, spices, olives, capers, avocado, cauliflower, broccoli

Food Packaging

Food packaging
Food is packaged to protect the product during transport and whilst sitting on shelves.

Why is food labelling important?
Symbols on packaging show important information to customers.

Giving farmers a fair price for their products.	Forest Stewardship Council – helping effectively manage forests.	Suitable for home freezing.	Eggs have been produced to the highest standards of food safety.	Vegetarian approved – free from animal products.
This product can be recycled.	A British organisation that promotes and regulates food quality.	Tidy man – do not litter.	Food which abides by the Islamic law. The Islamic way of slaughtering is cutting the throat and draining the blood.	An ethical food label – helping farm animals have a good life.

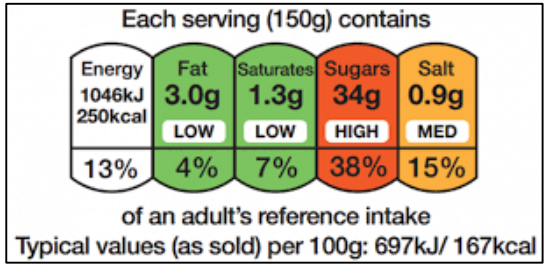
Example exam questions:
Seasonal produce and air miles
What are the advantage of buying locally produced, seasonal produce? (6 marks)
Explain the disadvantages of buying imported foods. (10 marks)
Explain the term 'air miles' (3 marks)
Explain the term 'seasonal produce' (3 marks)
How might a restaurant use the fact they only use

Food packaging
Compare the two dishes and explain which dish is a healthier choice. Use the traffic light system to help you with your answer (6 marks).
Why is it important to include a vegetarian symbol on food packaging of vegetarian products? (2 marks)

Reference intake

You'll see reference intakes referred to on food labels. They show you the maximum amount of calories and nutrients you should eat in a day. Most packaging has a colour coded label on the front to help you make healthy choices.

Reference in take amounts:
Kcal (calories) – 2000
Total Fat -70g
Saturated fat – 20g
Sugar – 90g
Salt – less that 6g



Red means HIGH in that nutrient
Amber means MEDIUM in that nutrient
Green means LOW in that nutrient

Reference intakes are not meant to be targets. They just give you a rough idea of how much energy you should be eating each day, and how much fat, sugar, salt and so on.
The percentages represent how much of your reference intake is in the product, e.g. the product has 3.0g of FAT in it, that is 4% of 70g of fat.

Year 8 Knowledge Organiser: Globalisation

Topics covered

- ✓ What is Globalisation?
- ✓ Benefits of Globalisation
- ✓ Drawbacks of Globalisation
- ✓ What are TNC's?
- ✓ TNC's – good or bad?
- ✓ What is the chain of production?
- ✓ What are 'sweatshops'?
- ✓ Measuring wealth/poverty
- ✓ Ways to reduce poverty
- ✓ Fairtrade

Key Ideas:

1. I can define the meaning of Globalisation
2. I can describe the advantages and disadvantages of Globalisation
3. I can explain how TNC's operate and exploitation through the chain of production.
4. I can measure poverty and suggest ways to reduce poverty

Skills

- ❑ To research amazing facts using ICT
- ❑ To understand different opinions and viewpoints
- ❑ To calculate levels of development using Atlas data
- ❑ To create graphs of different types (line, bar, pie)
- ❑ To write a detailed piece of extended writing

Places and Environments

- ❖ Asia
- ❖ Bangladesh
- ❖ Vietnam
- ❖ Indonesia
- ❖ Cameroon
- ❖ Norwich

Key Terms Used in this Unit

- ❑ Communications
- ❑ Trade
- ❑ Migration
- ❑ Trans-National Corporations
- ❑ Multi-National Corporations
- ❑ Inward Investment
- ❑ Head office
- ❑ Chain of production
- ❑ Consumers
- ❑ Child Labour
- ❑ Exploitation
- ❑ Sweatshops
- ❑ Gross Domestic Product
- ❑ Quality of Life
- ❑ Charity
- ❑ Fair Trade Premium
- ❑ WTO

Knowledge Organiser: Year 8 Spring Term 1 Part 2 Textual Programming—Micorosoft Small Basic

Summary

Sometimes we need computers to remember the information we give it and that it calculates during programs. A **variable** can be thought of as a box that the computer can use to store a value. The value held in that box can change or 'vary'.

A program can use as many variables as it needs it to. **Variables are a key element of programming.** They are used for calculations, for storing values for later use, in decisions and in iteration. It is important to use meaningful names for variables.

Programs require data to be **input**. This data is used (**processed**) by the program, and data (or information) is **output** as a result. Once data has been processed, programs often need to output the data they have

Key Vocabulary

Algorithm	A sequence of logical instructions for carrying out a task. In computing, algorithms are needed to design computer programs.
Flowchart	A diagram that shows a process, made up of boxes representing steps, decision, inputs and outputs.
Instruction	A single action that can be performed by a computer processor.
Programming	The process of writing computer software.
Programming language	A language used by a programmer to write a piece of software. There are many programming languages.
Pseudocode	A method of writing up a set of instructions for a computer program using plain English. This is a good way of planning a program before coding.
Variable	In a computer program, this is a memory location where values are stored.

Microsoft Small Basic

Variable

Computer programs use variables to

Variables could be used to store the score in a game, the number of cars in a car park or the cost of items on a till. They work in a similar way to algebra, where a letter in your code can stand for a number.

```
TextWindow.Write("Enter your Name: ")
name = TextWindow.Read()
TextWindow.Write("Hello " + name + ".  ")
TextWindow.WriteLine("How are you doing " + name + "?")
```

Sequencing

Sequencing is the specific order in which instructions are performed in an algorithm.

Algorithms consist of instructions that are carried out

```
GraphicsWindow.Width = 200
GraphicsWindow.Height = 200
GraphicsWindow.PenColor = "Green"
GraphicsWindow.DrawLine(10, 10, 100, 100)
GraphicsWindow.PenColor = "Gold"
GraphicsWindow.DrawLine(10, 100, 100, 10)
```

Selection

Selection is a decision or question.

At some point, a program may need to ask a question because it has reached a step where one or more options are available. Depending on the answer given, the program will follow a certain step and ignore the others.

```
If (Clock.Hour < 12) Then
  TextWindow.WriteLine("Good Morning World")
EndIf
If (Clock.Hour >= 12) Then
  TextWindow.WriteLine("Good Evening World")
EndIf
```

Iteration

Iteration is the process of repeating steps.

Iteration allows us to simplify our algorithm by stating that we will repeat certain steps until told otherwise. This makes designing algorithms quicker and simpler because they don't have to include lots of unnecessary steps.

```
For i = 1 To 24
  TextWindow.WriteLine(i)
EndFor
```

Algorithms

Algorithms can be represented as **pseudocode** or a **flowchart**, and programming is the translation of these into a computer program.

Pseudocode

```
IF GameWon THEN
  .. Instructions here ..
  IF Score > HighScore THEN
    .. Instructions here ..
  ENDIF
  .. Instructions here ..
ENDIF
```

Flowchart

http://bit.ly/33WS6NC

BBC Bitesize

Year 8 RS: Why is Islam the way it is?

Key words	
Muhammad	The Last Prophet in Islam.
Abu Bakr	A close companion of Muhammad
Mecca and Medina	Holy cities in Saudi Arabia
Ali	Muhammad's cousin
Quraysh	An influential tribe in Mecca
Quran	The holy book in Islam.
Muslim	A follower of Islam
Mosque	A place of worship in Islam.
Allah	The Arabic word for God

In 622**CE** Muhammad left Makkah. He and his followers were invited to live in Madinah (about 400 km away).

His departure, (Hijrah), was important because it was at Madinah that Muhammad set up the first Islamic community. Muslims begin their calendar from this date, the first year of hijrah. The Islamic calendar therefore reads AH 1 when the Christian calendar reads 622 **CE**.

This symbolises leaving behind darkness (disbelief) and moving into a new era full of light (belief).

Arabia- During the time of Muhammad

Countryside-Arabia was a very poor area, mostly desert or scrub.

People-Some of these were **Bedouins** who were Nomads, constantly moving their sheep, camels and tents from place to place in search

of food and water for themselves and for their animals.

Houses-The Nomad Arabs lived in tents as they had to move around Arabia from place to place. However those who lived in villages and towns had houses made out of mud. As they moved there animals around from market to market they would take everything with them.

Travel and Work-Many Arabs made a living from tending sheep.

Others used camels in groups, called caravans, to carry goods from town to town to sell.

Religion-There was no single religion in Arabia.

Most Arabs worshipped several gods and spirits that they believed lived in rocks and trees. A very small number of them believed in one **God** (such as the Arab **Christians** and Arab Jews.

Kings & Rulers-The Arabs were split into many tribes. There was no single king who ruled them. The Ka'ba was the most important building in all of Arabia. It was used as a temple for worship. The Ka'ba had over 360 altars, statues and other religious objects or idols which all the Arabs worshipped. People would travel hundreds of miles to visit and worship at the Ka'ba.

A young Muhammad

Muhammad was born in 570 in Mecca.
Muhammad was born into a noble tribe called the Quraysh. His father died before he was born, and his mother died when he was 6 years old. As an orphan he was looked after by his grandfather and when he died, by his uncle who was a merchant. When he was older, he became a trader for a rich widow called Khadijah, working as the leader of her caravans. He had done such an impressive job with profits through honesty (rather than cheating people like a lot of traders did in those days) that Khadijah asked him to marry her. Muhammad was 25 when he married Khadijah.
He was well known all over Makkah to be the most honest and hard-working man and was nicknamed 'Al-Amin' meaning 'The trustworthy'. Even the chiefs of the Quraysh praised him for this. Everyone knew that when Muhammad spoke, he always spoke to the truth.

The moment of revelation

According to Islamic teaching, the word of God was revealed through Muhammad in the year 610 CE (AD), when he was 40. God revealed his final message to mankind (about believing in the one God and worshipping the one God, and to lead good and honest lives etc.) through Muhammad. The same message that was delivered to all the other Prophets yet which had been distorted and corrupted over the centuries.

Muhammad was sitting in a cave on Mount Hira, just outside of the city of Makkah, when God spoke to him through the angel Jibril (Gabriel). These revelations happened again and again. In the year 613 CE Muhammad started preaching openly, he told the people of Makkah that there was only one God, and that God had created the world and everything in it. Since there was only one God it was wrong to worship statues and different gods.

At first there was a lot of opposition to Muhammad. His followers were beaten by people who did not want to give up their old way of life. Many people (including traders) did not like his teachings that duty to God, or Allah, was more important than family or tribe. They persecuted his followers for their new faith. The people were not willing to give up their ways of worshipping trees or rocks etc. The Quraysh were especially and extremely angry with Muhammad and his followers. They were losing business in Makkah due to Muhammad making these claims of one God.

Muhammad and his followers were persecuted for their beliefs by the powerful people of Makkah including the Quraysh. They feared they would lose their money, religion and power. They made up things about Muhammad so that people would not listen to him. They called him a liar and a madman. Many people questioned this though as he was once known as 'Al-Amin'. If this was the case, why would he lie about this matter?