



Year 9

Knowledge Organiser

Cycle 1 – 2019/20

“

*A winner is a dreamer
who never gives up.*

NELSON MANDELA

Stay
Positive
WORKHARD
Make it Happen

CREATIVE

Cycle 1

- **Art**
- **Drama**
- **Music**

Keyword Log

British Values

Iconic	Relating to or of the nature of an icon.
Society	The community of people living in a particular country or region and having shared customs, laws and organisations.
Imagery	Visually descriptive or figurative language, especially in a literary work.
Vibrant	(of colour) bright and striking.
Identity	The fact of being who or what a person or thing is.
Culture	The ideas, customs, and social behaviour of a particular person or society.
Commercial	Concerned with or engaged in commerce.
Gender	The state of being male or female (typically used with reference to social and cultural differences rather than biological ones).
Media	The main means of mass communication (broadcasting, publishing, and the internet) regarded collectively.
Contemporary	Living or occurring at the same time.
Patriotic	Having or expressing devotion to and vigorous support for one's country.

Cycle 1 – Grayson Perry

Who is Grayson Perry?

Grayson Perry [CBE RA](#) (born 24 March 1960) is an English artist, known mainly for his ceramic vases and [cross-dressing](#). Perry's vases have classical forms and are decorated in bright colours, depicting subjects at odds with their attractive appearance. There is a strong autobiographical element in his work, in which images of Perry as "Claire", his female alter-ego, often appear. His work often explores British culture and values.

What are values?

Values: A set of beliefs, principles and standards of behaviour which people may believe are important part of their lives.

Our values influence our political beliefs, religious and lifestyle choices.



Why values are important?

Values are important as it can form our emotions, words and actions, helping us to grow and develop. Values impact on our day to day lives because they impact on the decisions we make. Values can be individual or can apply to whole communities or nations for example people often talk about British values. Britain is a diverse country which includes people from various backgrounds, cultures and religions. We associate British culture with British people and the way British people behave in society.

Keyword Log

What happened to Lulu?

Hot seating	A technique used to develop in-depth knowledge of the character. The actor will answer questions in role.
Re-enactment	The acting out of a past event.
Flashbacks	Performing or exploring a previous moment in time.
Freeze frames	A frozen picture which is used to communicate meaning to the audience.
Characterisation	The act of changing voice, body language, movement, gestures etc. when in a role. An actor must use their skills to portray a character consistently throughout a performance.
Empathy	The ability to understand and share the feelings of another.
Evidence	Available facts or information surrounding a topic, belief or event.
Facial expressions	An acting skill. The way you use your face to express your characters feelings and emotions.
Body language	An acting skill. The way you use your body to express your characters feelings and attitudes.
Ensemble	A group of musicians, actors or dancers who perform together. Working as a group.

What happened to Lulu?

- Louise 'Lulu' Morgan
- Age: 14 years
- Height and build: 5ft 5in/slight
- Eyes: Blue
- Hair: Brown
- Pupil at Aldham Comprehensive School
- Last seen on the 5th September 2012
- Wearing blue jeans and green hoody
- Member of Aldham Athletic Club



This cycle you will investigate the disappearance of Louise Morgan. You will use the evidence provided, plus your imagination to try and solve the case.

You will use a variety of theatrical techniques to explore her character and the people around her. This is a sensitive subject and you need to use empathy and understanding to try and place yourself in her shoes.

Suggested structure:

Scene 1: Police appeal

Scene 2: Interview/ Hot seating

Scene 3: Flashback 1

Scene 4: Interview 2

Scene 5: Flashback 2

Scene 6: Where is Lulu now?

Develop skills in following:

Teamwork/ collaboration / cooperation

Concentration / focus

Voice - tone, projections, accent and pronunciation

Audience awareness

Sensitivity

Keyword Log

Pop Music

Pop Music	A genre that is characterised by the use of 'song structure'. Pop music borrows elements from many styles of music such as urban, dance, rock and country. Pop music is constantly evolving to incorporate new styles of music.
Song structure	Usually follows the following form but there are many variants: verse, chorus, verse, chorus, middle 8, chorus x 2, outro.
Melody	The main 'tune' that is usually sung in a pop song.
Harmony	Using chords to support the melody.
Chord	Two or more notes played at the same time.
Chord sequence	A sequence of chords used to make a section of the song.
Inversion	When the order of the notes in a chord are changed.
Bass line	Often played on a bass guitar, usually plays the lowest note of each chord.
Hook	A particularly catchy part of the melody that is often used in the chorus. It is usually repeated so that the listener can easily recognise the song.
Lyrics	The words to a song.

YEAR 9

Pop Music – Cycle 1

Knowledge Organiser

Pop Music

Pop music is a genre of music that originated in the United States and United Kingdom during the mid-1950s. "Pop" and "rock" were roughly synonymous terms until the late 1960s, when they became increasingly different from each other.



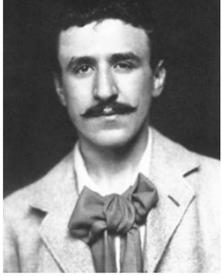
Pop music is eclectic, and often borrows elements from other styles such as urban, dance, rock, Latin, and country; nonetheless, there are core elements that define pop music. Identifying factors include generally short to medium-length songs usually written in a 'verse/chorus' format, as well as common use of repeated choruses, melodic tunes, and hooks.

The pop music industry is one of the most successful creative industries in the UK. Record labels such as EMI and Universal sign, record and promote their artists towards success.

DESIGN & TECHNOLOGY

Cycle 1

- **Design & Technology**
- **Food & Nutrition**

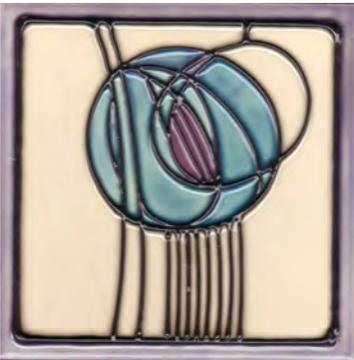


Charles Rennie Mackintosh was born in Glasgow in 1868, one of eleven children. At the age of 15 he enrolled at the Glasgow School of Art and a year later he joined an architectural practise to train as an apprentice. Briefly Mackintosh moved to the South of France in 1923, where he led a peaceful existence creating a large collection of architecture and landscape watercolour paintings. In 1927 he was diagnosed with throat and tongue cancer and moved back to London that year. He died on 10th December 1928 at the age of 60.

Influences

As an architect Mackintosh developed a love of sketching. Began studying nature, his drawings became less linear and more free flowing as the natural environment inspired him.

He greatly admired Japanese art and the techniques they used to draw plants and animals. He appreciated the simplicity of form



Significant work

One of his most architecturally outstanding buildings was his design for the Glasgow School of Art, built between 1897 and 1909, he was responsible for the total design which lead to him designing complete interiors, chairs, light fittings, wall decoration, even cutlery.



Mackintosh's influence on others

His work was labelled 'The Glasgow Style'. He was exhibited throughout Europe allowing designers to admire and adapt his style.

Art Nouveau is French for 'New Art,' a style of design that was becoming popular in the Western World at the end of the 19th Century.

Tools & equipment



Pillar Drill



Junior Hacksaw



File



Centre Punch



Drill bit

About Metals and Casting

Classification of Metals and Alloys

Metals are fantastically flexible materials that have been used for centuries to create an amazingly large range of products. They are classified into two groups, Ferrous and Non-Ferrous.

Ferrous metals

- Ferrous metals contain iron
- They will rust if exposed to moisture
- They are magnetic
- Examples include; iron and steel

Non-ferrous metals

- Non -ferrous metals do not contain iron
- They will not rust if exposed to moisture
- They are not magnetic
- Examples include; aluminium, copper and tin

Non-ferrous Metals		Ferrous Metals	
Aluminium	Lightweight, corrosion resistant, malleable, tough, high electrical and thermal conductivity.	Cast Iron	Iron + Carbon(2-4%) Brittle, hard
Copper	Tough, corrosion resistant, high electrical and thermal conductivity	Mild Steel	Iron + Carbon(0.25%) Malleable, ductile, tough
Zinc	Corrosion resistant, ductile	Tool Steel	Iron + Carbon(0.70-1.5%) Can be hardened
Brass	Alloy – Copper, Zinc Corrosion resistant, good thermal and electrical conductivity.	Stainless Steel	Alloy – Iron, Chromium, Carbon Corrosion resistant
		High Speed Steel	Alloy – Iron, Carbon, Tungsten Brittle, hard,

Casting

Casting is the name given to the process of pouring a molten substance into a shaped mould. The advantage of casting over forming by wastage is that the precise shape can be cut into a relatively soft and pliable material. It also allows for accurate multi reproductions.

There are several ways to manufacture moulds:

- Cut by hand (ideal for cuttlefish bone)
- Cut by a CNC router or mill into the surface of softwood blanks (blocks).
- Laser cut into multiple layers of MDF



Key word	Definition
Malleable/Malleability	The ability to be pressed or bent into shape, and hold that new form.
Ductile/Ductility	The ability to reshape the metal by stretching.
Thermal conductivity	The ability to transfer heat through the material.
Electrical conductivity	The ability to allow electricity to pass along it.
Hard/Hardness	The resistance to indentation or scratching.
Tough/Toughness	The ability to withstand impact.

Alloys

Alloys are materials manufactured to have specific qualities such as high strength to weight ratio. They are produced by mixing different metals or metals and other materials.

Alloys can be ferrous or non-ferrous, depending whether they contain iron.

E.g. Brass is a non-ferrous alloy

Copper + Zinc = Brass

Stainless steel is a ferrous alloy

Iron + Carbon + Chromium = Stainless steel

Pewter

Pewter is an alloy consisting mainly of tin, sometimes up to 99%, with copper and lead added to increase the hardness. Pewter has a low melting point, around 200°C, which makes it ideal for casting items that will not have to endure high temperatures.

Know your safety signs

KNOW YOUR SAFETY SIGNS

THERE ARE 5 TYPES

<p>PROHIBITION</p> <p>You must not do the actions given by this sign.</p>	<p>MANDATORY</p> <p>You must carry out the actions given by this sign.</p>	<p>WARNING</p> <p>Beware of a hazard. Possible risk to your health.</p>
<p>SAFE CONDITION</p> <p>Safe practice. Location of safety equipment. Safe means of escape.</p>	<p>FIRE DANGEROUS</p> <p>Location of fire fighting equipment and alarm call point.</p>	

AGREED SYMBOLS

Hazchem Symbols



! TO ALL PERSONNEL
To comply with COSHH regulations **KNOW THE RISKS! KNOW THE SYMBOLS! KNOW THE PRECAUTIONS!**

! ALWAYS follow the correct safety precautions, data sheets etc. Failure to comply is an offence under the Health & Safety at Work Act.

! IF IN DOUBT ASK!

SYMBOL & CLASSIFICATION RISK

Cycle 1 Knowledge Organiser

Personal Protective Equipment

Head to Toe Protection with PPE

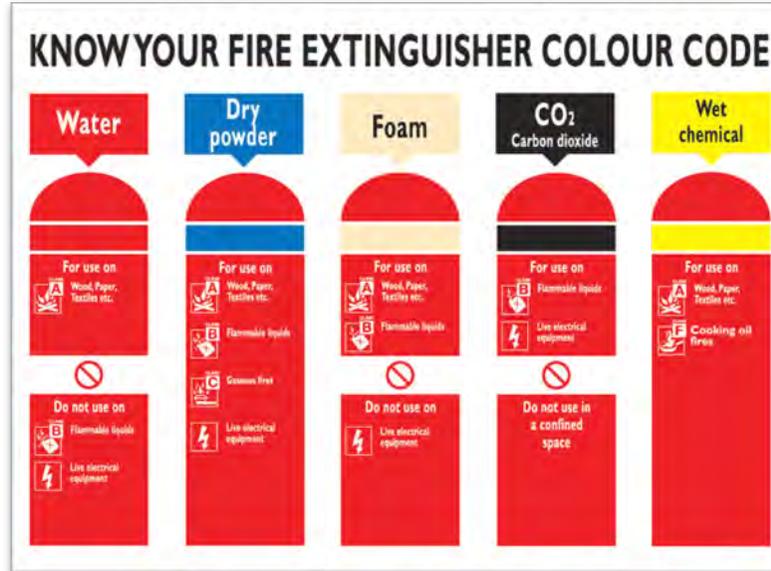
Comply with the Personal Protective Equipment at Work Regulations 1992

The Management Health and Safety Regulations 1999, require Risk Assessments to be undertaken on all practices and procedures within the workplace to ensure continued safety and protection.

<p>Head</p> <p>Wear a safety helmet to protect your head against impact, knocks or abrasions. Never wear metal head hats when working around or near electricity.</p> <p>Head protection must be worn.</p>	<p>Eye</p> <p>Use safety eyewear to protect your eyes when hazardous conditions exist. Areas where there are possible chemical splashes, sparks and ultraviolet radiation are considered high risk.</p> <p>Eye protection must be worn.</p>
<p>Ear</p> <p>Wear hearing protection to protect your ears when working in areas with noise levels exceeding 85dB. 170,000 people in the UK consider they suffer hearing loss or other ear conditions caused by their work.</p> <p>Hearing protection must be worn.</p>	<p>Respiratory</p> <p>Wear respiratory equipment to protect against dust, fumes, vapours and other harmful elements. It is estimated that 151,000 people are suffering from respiratory diseases caused by their work.</p> <p>Respiratory protection must be worn.</p>
<p>Hand</p> <p>Wear hand protection to protect against harmful chemicals and manual handling operations. Different hazards require different glove materials. An estimated 66,000 people suffer with a skin disease caused by their work.</p> <p>Hand protection must be worn.</p>	<p>Hi-Vis</p> <p>Wear high visibility clothing to be seen and safe in all conditions. Choose from workcoats and tee-shirts to lightweight jackets, over-coats and trousers.</p> <p>High visibility clothing must be worn.</p>
<p>Clothing</p> <p>Wear protective clothing to protect against chemicals, asbestos, grime and grime. Choose from light-duty aprons and coats, through to trousers, jackets and heavy-duty boiler suits.</p> <p>Protective clothing must be worn.</p>	<p>Foot</p> <p>Wear foot protection to ensure safety in hazardous locations. Protective footwear should be sturdy, including metal toe-caps and have non-slip soles.</p> <p>Foot protection must be worn.</p>

Mandatory Signs must be displayed to ensure safety in the work place

Fire Action Safety Sign



Fire Extinguisher and Classes of Fire

Risk Assessment Matrix

Risk Matrix

Likelihood		Very Likely	Likely	Unlikely	Highly Unlikely
		Fatality	High	High	High
Consequences	Major Injuries	High	High	Medium	Medium
	Minor Injuries	High	Medium	Medium	Low
	Negligible Injuries	Medium	Medium	Low	Low

Type of fire	RED	CREAM	BLUE	BLACK	YELLOW
	Water	Foam	Dry Powder	CO ₂	Wet Chemical
CLASS A Combustible materials (e.g. paper & wood)	✓	✓	✓	✗	✓
CLASS B Flammable liquids (e.g. paint & petrol)	✗	✓	✓	✓	✗
CLASS C Flammable gases (e.g. butane & methane)	✗	✗	✓	✗	✗
CLASS D Flammable metals (e.g. lithium & potassium)	✗	✗	✓	✗	✗
ELECTRICAL Electrical equipment (e.g. computers & heaters)	✗	✗	✓	✓	✗
CLASS F Deep fat fryers (e.g. chip pans)	✗	✗	✗	✗	✓
Additional Information	Not for use on liquid or electrical fires	Not suited to domestic use	Can be used safely on electrical items up to 1000 volts	Safe on both high and low electrical voltage	For use on extremely high temperatures



Allergens

Some people may develop an allergy to peanuts or to the gluten in wheat. If they eat foods containing these, they may become very ill, and possibly die.

The 8 most common food allergies include:

- Cow's milk
- Eggs
- Tree Nuts
- Peanuts
- Shellfish
- Wheat
- Soy
- Fish



Symptoms can occur anywhere from a few minutes after exposure to a few hours later, and they may include some of the following:

- Swelling of the tongue, mouth or face
- Difficulty breathing
- Low blood pressure
- Vomiting
- Diarrhea
- Hives
- Itchy rash

In more severe cases, a food allergy can cause anaphylaxis. Symptoms, which can come on very quickly, include an itchy rash, swelling of the throat or tongue, shortness of breath and low blood pressure. Some cases can be fatal.

Food Labelling Regulations (1996)



Cycle 1 Knowledge Organiser

Environmental Health Officer (EHO)

The EHO



If a business prepares or serves food it must be **registered** it using either the food business registration service on GOV.UK or via the **local authority website**.

The Environmental Health Officer's (EHO) role is to **inspect premises** in order to ensure the food a establishment produces is **safe to eat**.

FOOD HYGIENE RATING



At the end of their visit, in England, Wales, and Northern Ireland, they will present the establishment with a score from the

Food Hygiene Rating scheme of 0 - 5. The scheme is standardised across England and Wales to maintain a consistent assessment of safety standards. Any business should be able to achieve a "5 - very good" rating.

Scotland has its own equivalent system but will either issue a "pass" or "improvement required" rating.

If an establishment is perceived as high risk, officers will inspect it every 6 months. If it is low risk, EHO officers may visit every 5 years. The risk depends on the type of business (for example, restaurants are higher risk than a shop selling packaged food), and the level of concern a business has caused from past inspections.

Food Sources of common allergens

Like a tree nut allergy, peanut allergies are very common and can cause severe and potentially fatal allergic reactions. However, the two conditions are considered distinct, as a peanut is a legume. Nevertheless, those with peanut allergies are often also allergic to tree nuts too. While the reason people develop a peanut allergy isn't known, it is thought that people with a family history of peanut allergies are most at risk.

TREE NUTS

- Brazil nuts
- Almonds
- Cashews
- Macadamia nuts
- Pistachios
- Pine nuts
- Walnuts



COW'S MILK

Milk, Milk powder, Cheese, Butter, Margarine, Yogurt, Cream, Ice cream



SHELLFISH

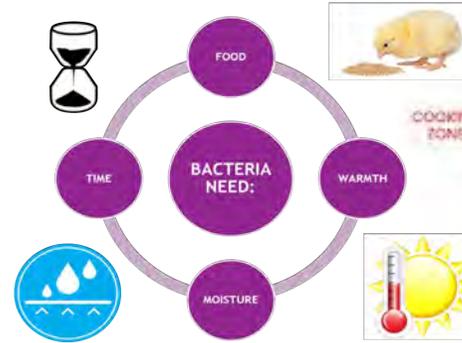
Shrimp, Prawns, Crayfish, Lobster, Squid, Scallops



COMMON CAUSES OF FOOD SPOilage



Bacteria need 4 things to grow:



WHAT FOOD SPOilage LOOKS LIKE



Odour - break down of proteins (rotten egg smell)



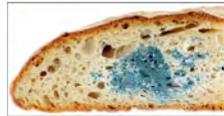
Sliminess - tissue breakdown



Gas Formation - swollen packaging

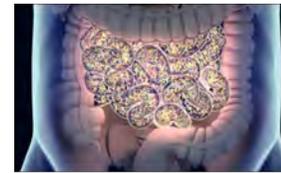


Sourness - production of acid, sour milk



Discolouration - green/blue molds on foods like bread, fruits and vegetables.

BACTERIA
Bacteria are microscopic organisms which are commonly referred to as 'GERMS'. They found everywhere including on and in people, on food, in water, soil and air. Some are good for us, and some are bad!

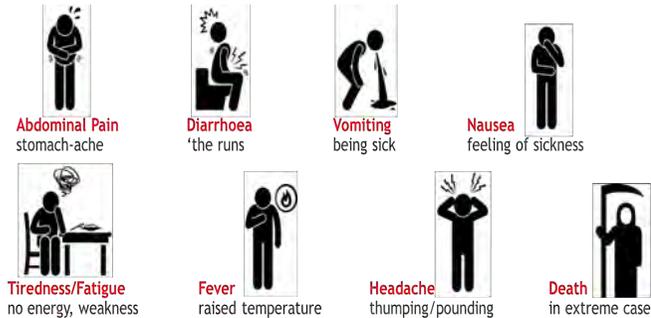


- 100 °C Boiling Water (bacteria will be destroyed)
- 75 °C Cooking/Reheating
- 63 °C Minimum Hot Holding
- 37 °C Body Temperature (most pathogens like to live at this temp)
- 8 °C Food Storage (slow food to stop temperatures to rise below)
- 5 °C Fridge Temperature
- 18 °C Freezer Temperature (bacteria won't grow but may not die)

All the above temperatures are guidelines only

Food Poisoning Bacteria
Salmonella
Clostridium Perfringens
Staphylococcus Aureus
Campylobacter
E-coli
Listeria
Bacillus Cereus

Symptoms



Personal Hygiene



AT RISK GROUPS



Pregnant Women



Children



Elderly



People with weakened immune systems



People on certain medications that may suppress the immune system

RED	RAW MEAT
BLUE	RAW FISH
YELLOW	COOKED MEATS
GREEN	SALAD AND FRUIT PRODUCTS
BROWN	VEGETABLE PRODUCTS
WHITE	BAKERY AND DAIRY PRODUCTS



Macro and Micro Nutrients

We need macro and micro nutrients in different amounts as they have different roles within our body.



Macro nutrients are our main energy providers and therefore we need a lot of them to help our bodies move and function throughout the day.

Macro nutrients include:
Carbohydrates
Protein
Fats



Micro nutrients are only needed in small amounts as some of them the body can produce itself. Micro nutrients are needed to maintain normal cell function on a smaller scale, but they are just as important as macro nutrients as a lack of some micro nutrients can lead to serious health implications.

Micro nutrients include:
Vitamins
Minerals



Cooking Methods



Common Spelling Mistakes

✗	✓
Protien	Protein
Minarals	Minerals
Vitimins	Vitamins
Carbohydrates	Carbohydrates
Nutratiion	Nutrition

Fibre helps the body to remove waste.

Water helps to flush out toxins via urine. Also regulates body temperature, keeps us hydrated and maintain normal bodily functions.

Carbohydrates give the body energy.

Protein provides growth and repair of cells.

Fats are needed for warmth, energy, hormone production and absorption of fat soluble vitamins.

Vitamins & Minerals help to maintain normal cell function.

Cycle 1 Knowledge Organiser

Protein: Growth and Repair

Protein is essential for the growth, maintenance and repair of body tissue.

Protein is part of every living cell and some tissues like skin, muscle, hair and the core of bones and teeth!



Fat Types of fat?



Unsaturated Fat:

- Liquid at room temperature.
- Mainly from non-animal (plant) sources.
- Can lower blood cholesterol.



Saturated Fat:

- Solid at room temperature.
- Mainly from animal sources.
- *With the exception of palm and coconut oil.
- Causes high blood cholesterol.



Carbohydrates

Classification of Carbohydrates		
Simple (sugars)	Mix of Both	Complex (starches & fibres)
Table Sugar (sucrose)	Biscuits	Wheat (bread, pasta)
Fruit (fructose)	Cakes	Oats
Sweets	Cereal	Corn
Jam	Sugary Breakfast Cereals	Barley
Marmalade	Starchy Fruit (banana)	Potatoes
Honey	Pastries	Rice
Energy Drinks (glucose)		Beans
Soft Drinks		Peas
Milk (lactose)		Lentils
		Chick Peas
		Vegetables

Vitamins and Minerals

Vitamins and Minerals are chemicals found naturally in food. With the exception of Vitamin D, which can be manufactured through the action of sunlight on the skin, vitamins cannot be made by the body, and must be provided by the diet. They are needed in minute (tiny) amounts to perform specific functions and fall into two different classes:

Introducing different types of food commodities and its characteristics and identification.



Religious Diets

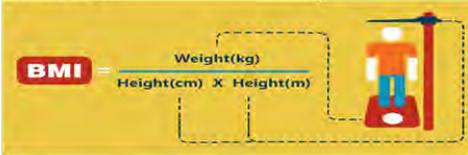
Judaism

- Do not eat shell fish or pork.
- They do not eat dairy and meat in the same meal (this is because they do not eat mother and child together – so you can not have chicken and egg together or milk and beef).
- They only eat Kosher meats (where the blood is drained from the body through a slit in the throat before the meat is soaked or salted). Kosher houses should have different sinks for dairy and meat along with different plates, cutlery and utensils: this is taken very seriously within the Jewish religion.
- Jews have fast days including Yom Kippur, Rosh Hashanah and Passover.

Muslim

- Do not eat pork .
- Only eat Halal meat (which is killed in the same way as Kosher).
- Sea food without fins or scales (such as crabs, prawns and squids) considered undesirable by some Muslims.
- Muslims should also avoid alcohol.
- Muslims don't eat whilst the sun is shining during the month long fast called Ramadam (Which changes each year as it is based on the Islamic lunar calendar).

Obesity



BMI	Category
Under 18.5	Underweight
18.5-25	Healthy Weight
25-30	Overweight
30-40	Obese
40+	Morbidly Obese

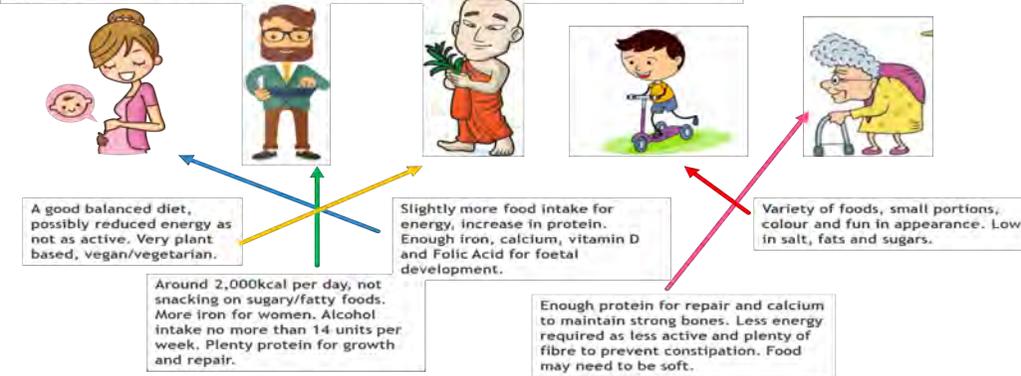
BMI stands for Body Mass Index. It is used as a measure of fat levels in our body. It is not an accurate measure as the calculation is based on weight vs height, meaning some tall rugby players may be classed as obese when they are actually very healthy.



Obesity experts say parents are struggling with a multitude of problems when it comes to their child's weight. They range from a lack of education about food, limited cooking skills, limited money to buy healthy food, long working hours, easy access to snack food and pester power.

Cycle 1 Knowledge Organiser

Special Diets



Special Diets

Diabetes

Diabetes is the third most common long term disease in the UK. It can lead to complications such as:

- Heart disease
- Kidney disease
- Blindness
- Nerve problems
- Diabetics cannot produce sufficient insulin to control the glucose level in the blood

There are two types of diabetes

- Type 1 can be treated with injections
- Type 2 can be controlled by diet and/or injections
- To prevent diabetes you should have a balanced diet and take regular exercise.



Types of Vegetarian

Vegetarians:

Do not eat meat or fish.

Lacto-vegetarians:

Do not eat the flesh of any animal but they will eat eggs, milk, cheese, honey etc.

Vegans:

Do not eat any animal products (including honey).

Pescetarians:

Do not eat chicken or red meat but **do eat** fish.

Demi or Semi Vegetarians:

Often choose to eat a mainly vegetarian diet because they **don't eat red meat**. They sometimes eat poultry and fish and eggs, milk and cheese.

Special Diets: Teenagers

What are their requirements?

- They need lots of
- Protein for....
- Calcium and vitamin D for growth of ...
- Girls especially need iron to replace that lost during their periods.
- Vitamin C to help release iron from foods and for clear skin and to fight ...
- Many teenagers vary their diet but it is recommended they eat 1800kcal per day made up of the right balance of ...



ENGLISH

Cycle 1

Cycle 1 in English will focus on: reading John Steinbeck's American classic, "Of Mice and Men", about two migrant workers George and Lennie and their search for the American Dream. We will explore Steinbeck's perspective and how he brings his characters and setting to life. This will enable us to write in his style.

Spellings and Vocabulary		
Word	Definition	Example
Isolation (noun)	The process or fact of isolating or being isolated. (Being alone/apart from others.)	Curley's Wife felt a sense of isolation as her husband did not like her talking to others on the ranch.
Racism (noun)	Prejudice, discrimination or antagonism directed against someone based on the belief that one's own race is superior.	Crooks was subjected to racism. He was not allowed in the bunkhouse apart from at Christmas because of his race.
Segregation	The action or state of setting someone or something apart from others.	Crooks felt segregated from the other workers. "I ain't wanted in the bunkhouse."
Economic Migrant Itinerant worker	A person who moves from one place to another in order to find work or better living conditions.	George and Lennie are economic migrants. They move from place to place to find work. Usually at the time migrants would travel alone.
Cyclical	Occurring in cycles; recurrent.	The structure of OMAM is cyclical. There is a sense of things happening in an order then repeated giving the impression that things are inevitable.
Hierarchy	A system in which members of an organisation or society are ranked according to relative status or authority.	The Boss is at the top of the hierarchy on the ranch as he owns it and controls who works there.
Microcosm	Means "little world". Something small that represents the qualities of something much bigger.	Steinbeck wrote the novel as a microcosm of American society of the time, showing the problems and difficulties that people faced.
American Dream	The ideal America is built on: that everyone has equal opportunity to succeed and that if you work hard enough you can become anything you want.	George and Lennie's dream of owning a farm and living off the "fatta the lan" symbolises this dream.

Terminology	Definition	Example
Metaphor	A figure of speech which is not literal.	My aunt is a diamond.
Animal imagery	Whereby animal attributes are imposed upon non-animal objects and humans.	"He walked heavily, dragging his feet a little, like a bear drags his paws."
Foreshadowing	To give an indication of what is to come.	We get a hint of the final death through the killing of the mouse and the puppy.
Symbolism	The use of objects or people to represent ideas or qualities.	Lennie's puppy represents how the strong can crush the weak in society.
Idiolect	The speech habits peculiar to a particular person.	"No, Lennie. I ain't mad."
Colloquial language	Casual and conversational language which doesn't always follow agreed grammar and spelling rules.	"I never been mad, an' I ain't now."
Semantic Field	A group of words used throughout a piece of text, which relate to a common theme or motif.	Semantic field: Death: murder, weapon, poison, attack,

CONTEXT		CHARACTERS		KEY QUOTES	
<p>Biographical</p> <ul style="list-style-type: none"> John Steinbeck was born in Salinas, California in 1902. Although his family was wealthy, he was interested in the lives of the farm labourers and spent time working with them. He used his experiences as material for his writing. Firstly as a journalist and then as a novelist, Steinbeck wanted to explore “diagnostic truths” about human nature and American society. 		George	frustrated, devoted, a dreamer	George	C1. “Guys like us, that work on ranches, are the loneliest guys in the world. They got no family. They don’t belong no place. . . “
		Lennie	childlike, unassuming, physically powerful	Lennie	C1 “Slowly, like a terrier who doesn’t want to bring a ball to its master, Lennie approached, drew back, approached again.
		Candy	unloved, an outcast, aging		
		Curley	insecure, unmerciful, jealous	Slim	C2 “Ain’t many guys travel around together, he mused. I don’t know why. Maybe ever’body in the whole damn world is scared of each other.”
<p>Historical</p> <ul style="list-style-type: none"> The Wall Street Crash – on 29th October 1929, millions of dollars were wiped out in the Wall Street Crash. It led to people losing their life savings and a third of America’s population became unemployed. The Dustbowl – a series of droughts in southern mid-western states like Kansas, Oklahoma and Texas led to failed harvests and dried up land. Farmers were forced to move off their land: they could not repay the bank loans which had helped to buy the farms and had to sell what they owned to pay their debts. Racism - racism was common and institutionalised as there were no civil rights and voting rights for African Americans, public places were segregated and the economic depression exacerbated prejudice. 		Curley’s wife	a seductive temptress, objectified, lonely, nameless		
		Crooks	cynical, proud, isolated	Candy	C3. "I ought to of shot that dog myself, George. I shouldn't of ought to let no stranger shoot my dog"
		Slim	compassionate, wise, respected	George	C3. “We wouldn’t ask nobody if we could. Jus’ say, ‘We’ll go to her,’ an’ we would “
		Carlson	heartless, insensitive		
SYMBOLS		THEMES AND CONTEXT			
George and Lennie’s Farm	The farm George and Lennie hope to own is a symbol of the American Dream. Like a mirage, the farm leads George, Lennie and other ranchers like Candy and Crooks, to indulge in the dream of living “offa the fatta the lan”.	Steinbeck encourages us to empathise with the plight of migrant workers during the Great Depression .			
Rabbits	Lennie’s dream is to tend the rabbits on the farm that he and George hope to one day own. Lennie loves the rabbits because of their soft fur, and his love of touching soft things leads to his doom.	The American Dream is shown to be impossible: reality defeats idealism .			
Candy’s dog	Candy’s sheepdog is old and useless. Carlson’s killing of the dog makes it clear that during the depression only the strong survive. The way in which Carlson kills the dog -with a gunshot to the back of the head - foreshadows Lennie’s death and likens Lennie to Candy’s dog: they’re both powerless, innocent and doomed.	The novella explores the human need for companionship and the tragedy of loneliness .			
Lennie’s puppy	Just as Lennie is dependent on George, Lennie’s puppy is entirely dependent on Lennie. Like Lennie, the puppy symbolises the fate of the weak in the face of the strong.	Steinbeck reveals the predatory nature of mankind : the powerless are targeted by the powerful .			
		Steinbeck explores the tension between the inevitability of fate and the fragility of human dreams .			
		Steinbeck explores the tension between the inevitability of fate and the fragility of human dreams .			
		The novella is an indictment of the way society treats the dispossessed .			
		Crooks		Crooks	C4. “Ever’body wants a little piece of lan’. I read plenty of books out here. Nobody never gets to heaven, and nobody gets no land.”
				Crooks	C4 “A guy needs somebody to be near him. He whined, a guy goes nuts if he ain’t got nobody”
		Curley’s wife		Curley’s wife	C5. And the meanness and the plannings and the discontent and the ache for attention were all gone from her face. She was very pretty and simple, and her face was sweet and young.
				Part 6	C6. “A silent head and beak lanced down and plucked it out by the head, and the beak swallowed the little snake while its tail waved frantically.”
				George	C6. “No, Lennie. I ain’t mad. I never been mad, an’ I ain’t now. That’s a thing I want ya to know”

HUMANITIES

Cycle 1

- **Geography**
- **History**
- **RE**

The significance of food, water and energy to economic and social well being

Food	<ul style="list-style-type: none"> Calories provide energy Availability depends on climate, soil and level of technology Malnourishment means disease and death. Can also lead to underperforming at school which decreases economic wellbeing in life More than 1 billion people are malnourished 2 billion are undernourished (poor diet) Obesity is an issue in some areas
Water	<ul style="list-style-type: none"> Used for survival, washing, food production, industry We need clean safe water otherwise we can get stuck in a cycle of poverty
Energy	<ul style="list-style-type: none"> Traditionally we get energy from oil, coal and wood Many different sources Used for production, heating, transport and for water supply (e.g. wells)

An overview of global inequalities in the supply and consumption of resources

Food	<ul style="list-style-type: none"> UK consume 3200 calories per person per day Somalia 1580 calories per person per day Areas of greatest population growth have highest levels of undernourishment Demand depends on changing diets and increasing population Supply depends on climate, soil and level of technology
Water	<ul style="list-style-type: none"> Fresh water is unequally distributed Water footprint is the amount of water used per day Global average is 1240 l per day Bangladesh is 896 l per day USA is 2483 l per day 1 in 5 (more than 1.2 billion people) live in areas of water scarcity 1 in 3 (2.4 billion people) have no access to clean drinking water
Energy	<ul style="list-style-type: none"> Richest billion people use 50% of the energy Poorest billion people use 4% of the energy Countries import and export energy Some countries do not have their own sources of energy

Key terms	Definitions
Carbon footprint	A measurement of all the greenhouse gases we individually produce
Energy mix	The range of energy sources of a region or country
Renewable	A resource that will never run out.
Non renewable	A resource that will run out.
Fracking	Injecting liquid at high pressure into cracks in rocks to extract natural gas
Food Miles	The distance food travels from producer to consumer
Food insecurity	being without reliable access to a sufficient quantity of affordable, nutritious food



Energy

The changing energy mix – reliance on fossil fuels and the growing significance of renewable energy

UK Energy mix in 2015 :

- Coal 31%
- Gas 25%
- Nuclear 19%
- Renewable sources 22%

In 1970 91% was from coal and oil

- UK investing in renewable energy e.g. solar energy and subsidies given by the government
- Shale gas most recent focus

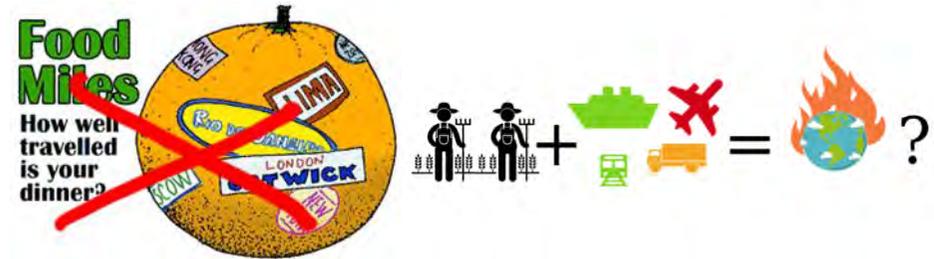
Table 1: Energy Sources

Renewable	Nonrenewable
<i>Energy derived either directly or indirectly from the sun</i>	<i>Energy derived from fossil fuels</i>
Solar	Coal
Biomass	Oil (petroleum)
Wind	Natural gas
Biofuels	Tar sands
<i>Energy derived from gravity</i>	<i>Energy derived from the fission of atoms</i>
Tidal	Nuclear (uranium)
Hydropower	
<i>Energy from the interior of the earth</i>	
Geothermal	

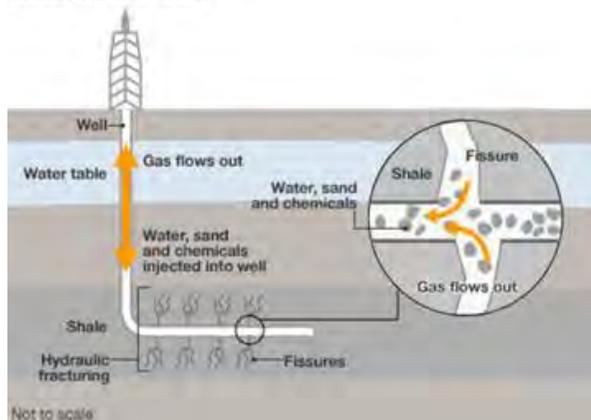
Food

Facts About Global Food Insecurity

1. There is more than enough food produced in the world today to feed all people sufficiently. So why do 815 million people go hungry every day?
2. After steadily decreasing for over a decade, global hunger is on the rise. Global hunger affects approximately 11 percent of the global population today.
3. Food insecurity has adverse effects on children. Stunted growth, a lack of nourishment leading to underdevelopment in children, is directly caused by food insecurity.
4. Of all of the countries adversely affected by food insecurity, those most affected are areas involved in violent conflicts. Of the 815 million people experiencing food insecurity, nearly 500 million live in areas affected by conflict.



Shale gas extraction



HYDROLOGIC FRACKING

► **Pros:**

- Natural Gas burns cleaner than Coal
- There are many natural gas reserves in North America
- Cheaper to burn

► **Cons:**

- Earthquakes
- Toxic chemicals used and sealed into the ground
- 2.1 million gallons of water used.
- Pollution of ground water
- Oil and gas companies exempt from Clean Water Act 1972

Goat Aid

Background

- Oxfam charity
- Gives goats to families and villages
- Produce food and income
- Most of the work is carried out in Africa.
- Non-governmental organisation – doesn't rely on support from the Government.
- Focused on widowed women by providing a goat which will create multiple benefits.



Advantages:

- Goat milk and meat is an excellent food source
- Brings village together as they look after the goat(s)
- Goats breed easily which makes it sustainable
- Manure can be used as crop fertiliser

Disadvantages:

- Transporting the goat to a new environment can be an issue – lack of transportation and animals may not like it.
- Veterinary care is expensive and will be hard to find in places such as Africa
- They need to be taught how to look after the goat properly – training costs

Sustainability

- Goats can easily be looked after and require little input
- It is a self-perpetuating system, so once they have received a goat, it can breed to grow a new herd – this makes it sustainable
- Once a goat has been bred, it is then given back to the organisation so it can be given to help other people = sustainable project

A GOATASTIC GIFT!

Give a Goat as a gift and help support Oxfam in their campaign to help people in Africa improve their lives.



<p>Key facts:</p> <ul style="list-style-type: none"> At the end of WW2 the ‘marriage of convenience’ ended between the Soviet Union and USA. In August 1945, the USA exploded two nuclear bombs over Japan. West Berlin was blockaded by the Soviet Union in 1948. Britain and the USA organised a successful airlift to rescue the city. The 1950s saw a massive build-up of nuclear weapons between the USA and Soviet Union. The Berlin Wall was constructed in August 1961, to stop migration from east to west Berlin. The Cuban Missile Crisis of 1962 placed the world on the brink of nuclear war. The Prague Spring of 1968 led to the ‘Brezhnev Doctrine’ which would impose tighter controls from Moscow on the satellite states. The 1970s was a period of détente between the Soviet Union and the USA. The USA saw the 1979 Soviet Union invasion of Afghanistan as spreading communism. Relations between the two deteriorated. The Soviet Union ceased to exist in 1991, bringing to an end the Cold War and the start of independence for the satellite states. 	<p>In this unit you will learn about how and why the Cold War happened, as well as the impact that it had on relations between the Soviet Union and USA.</p> <p>Key events:</p> <p>1941: Grand Alliance formed between UK, USA and Soviet Union to defeat Nazi Germany.</p> <p>1943: Tehran Conference.</p> <p>1945: Yalta and Potsdam Conferences.</p> <p>1946: Churchill delivers ‘Iron Curtain’ speech.</p> <p>1947: Truman Doctrine promised to defend democratic countries against communism and the Marshall Plan provided economic aid to these countries.</p> <p>1949: Creation of West and East Germany.</p> <p>1949: Formation of North Atlantic Treaty Organisation (NATO).</p> <p>1955: Formation of Warsaw Pact.</p> <p>1956: Hungarian Uprising.</p> <p>1961: Berlin Wall built by Soviet Union to divide city of Berlin into east and west Berlin.</p> <p>1962: Cuban Missile Crisis.</p> <p>1967: Prague Spring.</p> <p>1967: Brezhnev Doctrine.</p> <p>1970s: Détente between Soviet Union and USA.</p> <p>1979: Soviet Union invades Afghanistan.</p> <p>1989: Fall of Berlin Wall.</p> <p>1991: End of Soviet Union and the Cold War.</p>	<p>Key words:</p> <p>Soviet Union: Short for Union of Soviet Socialist Republics (also USSR).</p> <p>Ideology: A set of shared beliefs.</p> <p>Capitalism: Belief that everyone should be free to own property, businesses and make money.</p> <p>Communism: Belief that all property, including property and businesses should be owned by the state and ensure every member of society has a fair share.</p> <p>Democracy: A political system in which a nation’s leaders are chosen through an election.</p> <p>Isolationism: Staying apart, not getting involved in the affairs of others.</p> <p>Containment: Limiting the spread of something, e.g. the USA containing the spread of communism.</p> <p>Deterrent: A force that prevents something from happening.</p> <p>Ultimatum: A final demand, often backed up with a threat to take action.</p> <p>Non-proliferation: Stopping the spread of something, normally weapons.</p> <p>Socialism: Communist countries sometimes refer to themselves as ‘socialist’.</p> <p>Doctrine: A belief or philosophy.</p> <p>Détente: A period of peace between previously warring countries.</p> <p>Perestroika: Russian for ‘reconstruction’.</p> <p>Glasnost: Russian for ‘openness’ or ‘transparency’.</p> <p>Satellite States: Countries under control of the USSR.</p>
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Big Questions

The study of RE is made up of lots of big questions. Throughout Year 9 you will be studying lots of these starting with the question of whether God exists or not, which we will study from different perspectives.

Design Argument

One form of this was developed by William Paley. He argued the Earth appears to have aspects of intelligent design in it (e.g. ecosystems) as a result he said it must have a designer as it couldn't be here by chance. For Paley, the only creator that could do this is God – so he must exist. He used the analogy of a watch to make his point.

First Cause Argument

One form of this was developed by Thomas Aquinas. He argued that everything in the world has a cause. However, Aquinas said that this couldn't go on forever, there must be a starting point. For Aquinas, this starting point was God because only God is powerful enough and eternal, meaning He didn't need a cause.

Big Bang and Evolution

Over the last 160 years people have begun to question the religious beliefs about how the universe and humans came into existence. One key belief is that the universe was created by a huge explosion (The Big Bang) billions of years ago. Since then the universe has been expanding and solar systems, stars and planets have formed.

Charles Darwin came up with the Theory of Evolution. He believed human life has evolved from more basic lifeforms through a process of natural selection.

Key words

Agnostic: Unsure of God's existence.

Atheist: Does not believe in God's existence.

Theist: Believes in God's existence.

Analogy: A comparison between one thing and another to help understanding of a viewpoint.

William Paley: Theologian who developed Design Argument.

Thomas Aquinas: Monk who developed First Cause Argument

Eternal: With no beginning or end.

Big Bang Theory: Belief the universe was created by a Big Bang.

Evolution: Belief lifeforms have developed over millions of years.

Charles Darwin: Scientist who developed Theory of Evolution.

Creationist: Someone who believes the creation story word for word.

Genesis: The first book of the Bible.

Creationism

This is how some Christians believe the world and life on it was created. They believe that the story in Genesis is completely true as it is seen as God's word.

As a result they believe the world was created in 6 days, from nothing. They believe humans were created last and that the world is about 10,000 years old.

This is not the view of all Christians but some do still hold the views.

ICT

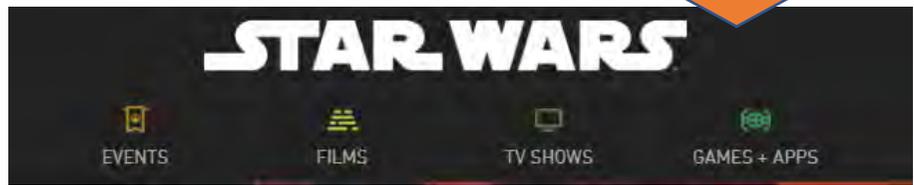
Cycle 1

Cycle 1 in Computer Science will focus on understanding and creating websites. You will also create digital graphics using specialist software and incorporate them into your website.

Key words and definitions	
Browser	An application used to view web pages, e.g. Internet Explorer or Google Chrome.
HTML	The language used to write and display web page documents. (Hypertext mark-up language).
Hyperlink	A link in a document or webpage that connects to another location.
Website	A group of web pages hosted on one web server and viewed in a web browser.
Web Page	A page designed for, and viewed in, a web browser.
Navigation Bar	A set of hyperlinks arranged together usually in the form of buttons or tabs.
Target Audience	Which group of people the website is aimed at.
Layout	Where text and images are positioned on the page.



Different examples of navigation bars.



Learning Objectives: To understand how web sites work. To be able to plan, create and evaluate a website. To be able to use website creation software as well as HTML.

Using HTML to create websites:

HTML can be written in specialist software, or in a simple text editor like Notepad. As long as the document is saved with the **file extension** '.html' it can be opened and viewed as a webpage from a browser. This example HTML code displays a message on a webpage:

```
<html>
  <body>
    <h1>Hello world</h1>
    <p>This is my first webpage</p>
  </body>
</html>
```

The code uses tags to describe the appearance of the information:
<html> states that the document is a HTML document
<body> states that the information appears in the body of the page
<h1> states that the following text appears as a prominent heading
<p> states that this is the beginning of a new paragraph

Useful links:
<https://www.w3schools.com/html/>
<https://www.bbc.com/bitesize/guides/z8nk87h/revision/4>

Topic 2
Digital Graphics

Learning Objectives: To understand how digital graphics are created, the difference between bitmap and raster graphics and what different file formats are used for.

Key words and definitions

Bitmap	An image made up of pixels. This type of image loses quality if its width and/or height are increased.
Compressed	A file that has its size reduced so it takes up less space in the computer memory.
File formats	The way that a specific file type is saved, eg. a picture file is different from a text document. Different file formats have different file extensions, eg. *.jpg or *.txt).
Vector/Raster	An image stored as mathematical instructions for how to draw it. This means its width and height can be increased without the loss of quality.
White Space	The empty space around objects in a graphic image.
Pixel	Short for 'picture element' the small blocks that make up a bitmap image.
Resolution	Resolution refers to the number of pixels in an image.
PPI	Pixels per square inch.

Useful Links:

- <https://www.bbc.com/bitesize/guides/zv2v4wx/revision/1>
- https://www.sqa.org.uk/e-learning/BitVect01CD/page_07.htm

What can these graphical file formats be used for?

What are their advantages and disadvantages?

<https://www.cdqi.com/2017/10/mikes-technical-tip-file-format/>



VECTOR

BITMAP



VS.



I HAVE SHARP EDGES

I AM FUZZY



LANGUAGES

Cycle 1

- **French**
- **Spanish**

LES RELATIONS: Learning Cycle 1 is about relationships. You will revise the present tense and the near future tense and learn about reflexive verbs to discuss relationships and adjectives to describe people.

Key words	Definitions
Subject Pronouns	Whoever is doing the action : Je (I) / Tu (you) / Il/Elle (he/she), Nous (we) / Vous (you (pl)) / Ils/Elles (they (m)/they (f))
Nouns	Used to identify any of a class of people, places, or things
Adjectives	Used to describe a noun
Adjectival agreement	In French, adjectives 'endings have to change according to the noun they describe
Verbs	A word used to describe an action, state, or occurrence, and forming the main part of the predicate of a sentence, such as <i>hear, become, happen</i> .
To conjugate	To change the ending of a verb so it fits in a sentence
Infinitive	A verb in its unchanged form / A verb which can be found in a dictionary / A verb which has an ER/IR/RE ending in French (jouer) / A verb which has 'to' in front of it in English (to play)
Present tense	Used to say what someone is currently doing or usually does (I play / I am playing)
Near Future	Used to describe what you are going to do in the future (I am going to play)
Past tense	Used to talk about a completed action which took place in the past

G Adjectival agreement: irregular adjectives > Page 214

Most adjectives add **-e** when used with feminine nouns. However, some adjectives are different.

Some never change: *un copain **sympa**/une copine **sympa***.
Adjectives that already end in **-e** don't add an extra **-e** for feminine nouns: *un copain **sensible**/une copine **sensible***.

Some change in different ways:

*un copain **gentil** → une copine **gentille***

*un copain **compréhensif** → une copine **compréhensive***

*un copain **généreux** → une copine **généreuse***

G Adjectival agreement > Page 214

Most adjectives work like this:

masculine	feminine	masc plural	fem plural
no ending	add -e	add -s	add -es
e.g. <i>charmant</i>	e.g. <i>charmante</i>	e.g. <i>charmants</i>	e.g. <i>charmantes</i>

- **Reflexive verbs** are verbs that have an extra reflexive pronoun in front of the verb. The verb itself might be regular or irregular, and is conjugated as usual. The reflexive pronoun agrees with the subject of the verb.

e.g. *se disputer* (to argue):

*je **me** dispute nous **nous** disputons*

*tu **te** disputes vous **vous** disputez*

*il/elle/on **se** dispute ils/elles **se** disputent*

NB *me, te* and *se* shorten to *m', t'* and *s'* before a vowel or *h* e.g. *Je **m'**appelle Yannick*.

	masculine	feminine	plural
my	mon	ma	mes
your	ton	ta	tes
his/her	son	sa	ses



Frequencies

Rarement - rarely

Quelquefois - sometimes

Souvent - often

Normalement - normally

De temps en temps - From time to time

D'habitude - Usually

FUTUR PROCHE

ALLER (PRÉSENT) + INFINITIF

JE VAIS	NAGER
TU VAS	CHANTER
IL/ELLE VA	PARLER
NOUS ALLONS	MANGER
VOUS ALLEZ	DESSINER
ILS/ELLES VONT	SE PROMENER

IL VA DESSINER UN CHATEAU

ILS VONT CHANTER UNE CHANSON

ATTENTION! À LA FORME NÉGATIVE

NE + ALLER + PAS + INFINITIF

JE NE VAIS PAS CHANTER

REGULAR PRESENT TENSE

	-ER	-IR	-RE
Je	e	is	s
Tu	es	is	s
Il/Elle/On	e	it	
Nous	ons	issons	ons
Vous	ez	issez	ez
Ils/Elles	ent	issent	ent

Negatives

Ne pas - Not

Ne jamais - Never

Ne plus - Not any more

Ne que - Only

G The present tense: avoir and être Page 202

These are the two most useful verbs in French.

avoir	to have	être	to be
j'ai	I have	je suis	I am
tu as	you have	tu es	you are
il/elle/on a	he/she has; we have	il/elle/on est	he/she is; we are
nous avons	we have	nous sommes	we are
vous avez	you have	vous êtes	you are
ils/elles ont	they have	ils/elles sont	they are

Intensifiers



un peu - a bit

plutôt - rather

assez - quite

très - very

vraiment - really

Learning Cycle 1 is Mi Gente – talking about friends; family and relationships.

Use these keywords and phrases alongside your Learning Cycle Vocabulary.

Key words	Definitions
Subject Pronouns	yo (I) / tu (you) / el/ella (he/she), nosotros (we) / vosotros (you (pl)) / ellos/ellas (they (m)/they (f))
Nouns	Naming words
Adjectives	used to describe a noun
Verbs	Doing words. Used to describe an action, state, or occurrence, and forming the main part of the predicate of a sentence, such as <i>hear, become, happen</i> .
Adverbs of frequency	used to say how often someone does something
Infinitive	The 'to do' bit of a verb / A verb which has an AR/ER/IR ending in Spanish (to play - jugar)
Present tense	Used to say what someone is currently doing (I do - hago / I play - juego)
Past tense	Used to talk about a completed action which took place in the past (I went - fui / I ate - comí)
Imperfect tense	Used to talk about an action in the past which took place regularly (I used to play football on Saturdays – antes jugaba fútbol los sábados)
The Future tense	Used to talk about what someone will do in the future (I will play football – jugaré al fútbol)
The Near Future tense	Used to talk about what someone is going to do in the future (I am going to play football – voy a jugar al fútbol)
The Conditional Tense	Use when you want to say would / should or could (I would like – me gustaría jugar al fútbol)

G Adjectival endings Page 210

Adjectives in Spanish usually come after the noun and 'agree' with the noun they describe. You have seen the -o/-a, -e, and consonant endings already. Adjectives endings in -or/-ora and -ista follow a slightly different pattern.

adjective ending	masculine singular	feminine singular	masculine plural	feminine plural
-o/a	serio	seria	serios	serias
-e	inteligente	inteligente	inteligentes	inteligentes
consonant	fiel	fiel	fieles	fieles
-or/ora	hablador	habladora	habladores	habladoras
-ista	optimista	optimista	optimistas	optimistas

Opinions

Creo que / Pienso que / Opino que	I think that
Me parece que	It seems to me that
Para mí	For me
Lo bueno / mejor es que	The good/best thing is that
Lo malo / peor es que	The bad/worst thing is that
Lo que más me gusta/gustó	The think I like/liked most

Justifications

porque / ya que	because
dado que	given that
además	also
sin embargo / no obstante	however
pero	but

Connectives

y / o	and/or
también	also
por eso / así que / por lo tanto	therefore
primero / luego / después	firstly / then / after
a menudo	often
sobre todo	especially
a causa de / gracias a	because of / thanks to
a pesar de	in spite of

Common verbs

Soy	I am	Tengo	I have
Eres	You are	Tienes	You have
Es	He/she is	Tiene	He/she is

MATHS

Cycle 1

Cycle 1 in **Maths** will focus on developing a deep understanding of the number work. You will be introduced/extend knowledge of numbers, number facts, standard form and surds. This will build on previous knowledge and is designed to master these topics through to GCSE standard.

Key words and definitions

Rounding	Simplifying a number based on the criteria given.
Estimating	To round the numbers to make them easier to work out the calculation.
Indices	The small digit known as the indices or power and is how many times a number is multiplied by itself.
Fractional Indices	Means that it is a root of the number.
Negative Indices	An indices which mean the reciprocal of the number.
Reciprocal	A number or fraction which when multiplied by the original number gives 1.
Product	Means to times numbers together.
Prime number	A number with only 2 factors 1 and itself.
Factor	Numbers that will divide into another number as a whole.
Multiple	The numbers in the times table of the number given.
LCM	Lowest common multiple, the smallest multiple of 2 or more numbers.
HCF	Highest common factor, the highest factor of 2 or more numbers.
Standard form	A universal standard for writing big or small numbers, a number between 1 and 10, multiplied by 10 to the power of a number.
Surd	A irrational number which is left as a root rather than writing as a rounded decimal.

Topic 1
Calculating and Rounding
HM: 17, 56, 130

Essential Knowledge:

$$3^2 \times 3^4 = 3^6$$

$$2^5 \div 2^3 = 2^2$$

$$(4^2)^3 = 4^{12}$$

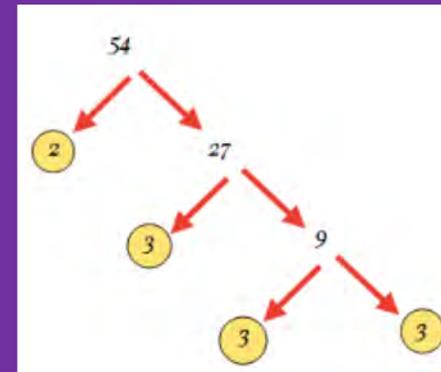
$$10^0 = 1$$

$$27^{\frac{2}{3}} = (\sqrt[3]{27})^2$$

$$5^{-1} = \frac{1}{5}$$

Example:

Use a factor tree to find the product of prime factor of 54, which is $2 \times 3 \times 3 \times 3 = 2 \times 3^3$



Topic 2
Indices and Index Law
HM: 102-110

Standard Form

Positive Power = Large Number

$$4.3 \times 10^6 = 4\,300\,000$$

Negative Power = Small Number

$$2.1 \times 10^{-3} = 0.021$$

Calculations with Standard Form (without calculator)

Multiply	Divide
$(4 \times 10^6) \times (2 \times 10^3)$ $= 8 \times 10^9$	$(4 \times 10^6) \div (2 \times 10^3)$ $= 2 \times 10^3$
$(3 \times 10^5) \times (2 \times 10^{-2})$ $= 6 \times 10^3$	$(4.8 \times 10^6) \div (1.2 \times 10^3)$ $= 4 \times 10^3$
$(4 \times 10^6) \times (3 \times 10^3)$ $= 12 \times 10^9$ ✓ $= 1.2 \times 10^{10}$ ✓	$(1 \times 10^6) \div (2 \times 10^3)$
$(5 \times 10^6) \times (7 \times 10^3)$	$(1 \times 10^7) \div (4 \times 10^5)$

Topic 3

Standard form and calculating with standard form.

HM: 123 -128

Topic 4

Surds and calculating with surds.

HM: 111 - 119

Surds are simple a root left as a root and not changed to a decimal and rounded.

$$\begin{aligned} \sqrt{a} \times \sqrt{a} &= a \\ \sqrt{a} \times \sqrt{a} \times \sqrt{a} &= a\sqrt{a} \\ \sqrt{a} \times \sqrt{b} &= \sqrt{ab} \\ \sqrt{a} + \sqrt{b} &= \sqrt{\frac{a}{b}} \end{aligned}$$

find the highest number that is a factor of 60 and 72 (hcf)

$$\begin{aligned} 60 &= 2 \times 2 \times 3 \times 5 \\ 72 &= 2 \times 2 \times 2 \times 3 \times 3 \end{aligned}$$

$$\text{hcf} = 2 \times 2 \times 3$$

$$\text{hcf} = 12$$

find the lowest number that is a multiple of 60 and 72 (lcm)

$$\begin{aligned} 60 &= 2 \times 2 \times 3 \times 5 \\ 72 &= 2 \times 2 \times 2 \times 3 \times 3 \end{aligned}$$

$$\text{lcm} = 2 \times 2 \times 2 \times 3 \times 3 \times 5$$

$$\text{lcm} = 360$$

GOLDEN RULES:

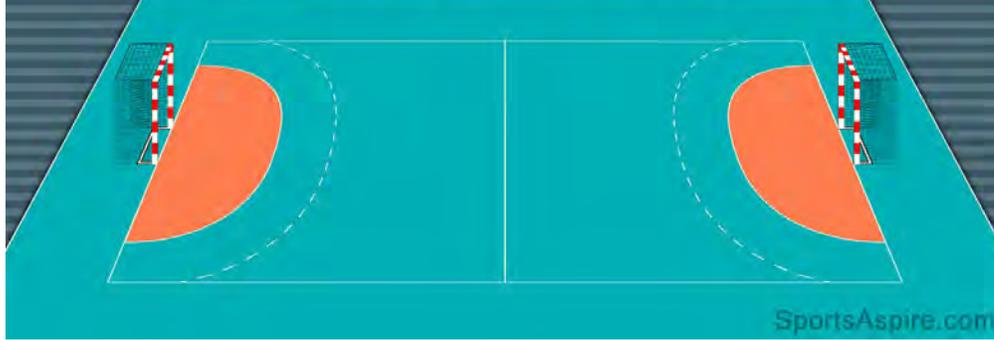
- 1) Standard form always has a number which is between 1 and 10, but not including 10.
- 2) It is always then multiplied
- 3) The end is a 10 to the power of a number, positive means a big number, negative means a small one.

PE

Cycle 1

- **Handball**
- **Netball**
- **Volleyball**

We will focus on: An introduction in to Handball. You will develop skills and acquire knowledge and the understanding of rules and regulations and how to apply these.



Topic 1 Handball

THE GAME

A match consists of two periods of 30 minutes each

Each team consists of 7 players; a goalkeeper and 6 outfield players.

To win in handball you must score more than your opponent

The aim is to throw the ball into the goal to score

Within your lessons, you will need to answer these questions by the end of the topic:

As an outfielder, are you allowed in the D?
What happens if the ball goes out of bounds?

Who is allowed to shoot?

How do you know who has won the game?

BASIC RULES

Outfield players can touch the ball with any part of their body that is above the knee

Once a player receives possession, they can pass, hold possession or shoot

If a player holds possession, they can dribble or take three steps for up to three seconds without dribbling

Only the goalkeeper is allowed to come into contact with the floor of the goal area.

Goalkeepers are allowed out of the goal area but must not retain possession if they are outside the goal area

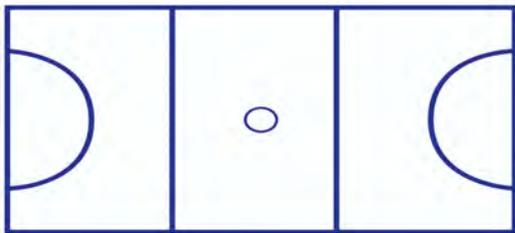
Throw on	It is done to start the play or after a goal is scored, from the centre of the court
Throw in	It is done by a player by throwing back the ball into the court after it has crossed one of the side lines
Dive shot	It is a way of putting the shot, in order to score a goal, by jumping above the floor towards the goal. It is done without touching the d-line
Goalie	A player who defends the goal while opposition attempts to score goals. A goalie or goal keeper is permitted to play inside the goal area
Court player	The players playing on the court except goal-keepers are known as court player
Dribbling	Moving around the court, bouncing the ball

Warming up before physical activity is very important. During the Cycle your teacher will discuss and apply the 5 part warm – up:

- Pulse raising
- Mobility
- Dynamic movement
- Stretching
- Skill rehearsal phase

We will focus on: An introduction in to Netball. You will develop skills and acquire knowledge and the understanding of rules and regulations and how to apply these.

Topic 1
Netball



THE GAME

7 players per side, whom all have different positions

2 umpires on the court to officiate the match.

A goal is scored when a GA or GS gets the ball into the hoop from within the D.

All players have set positions and set areas that they are allowed to go

Warming up before physical activity is very important. During the Cycle, your teacher will discuss and apply the 5 part warm – up:

- Pulse raising
- Mobility
- Dynamic movement
- Stretching
- Skill rehearsal phase

BASIC RULES

You cannot move when you have the balls in your hands.

Depending on what position you are, will depend on where you can go on the court.

You must be 1m away from the ball to defend it

If the ball gets knocked out of the court by team A, then team B will gain the throw in

A penalty is awarded if obstruction or contact has been called

A free pass is awarded if footwork or offside has been called

Footwork	When you place down your landing foot
Offside	If you go into an area you are not allowed to
Contact	When you contact/touch another person on court
Obstruction	If you stand closer than 1m to the opposition with the ball
Penalty	If you case a foul to/on another player
Free pass	If you commit a foul on your own

Netball Court Positions



Within your lessons, you will need to answer these questions by the end of the topic: How many **goals** do you need to score to win a game? Where must a **centre pass** be received? Where do you have to be on the court when a centre pass happens?

We will focus on: An introduction in to Volleyball. You will develop skills and acquire knowledge and the understanding of rules and regulations and how to apply these.

Topic 1 Volleyball



Each team has 6 players on a court at any one time.

The primary **objective** in volleyball is to make the **ball hit** the **floor** on the opponent's side of the court, while preventing your opponent from doing the same on your side of the court.

To win the game you must score more points than your opponents. The best of 3 or 5 sets are generally played and the winners will be the first team to reach the required number of sets.

THE GAME

Warming up before physical activity is very important. During the Cycle, your teacher will discuss and apply the 5 part warm – up:

- Pulse raising
- Mobility
- Dynamic movement
- Stretching
- Skill rehearsal phase

Games are played up to 25 points and must be won by 2 clear points.

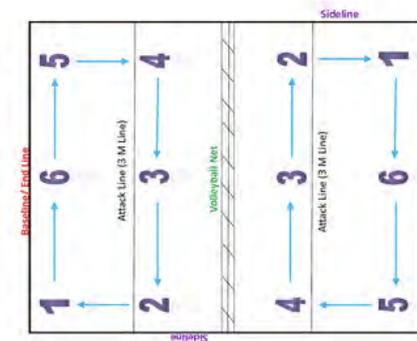
Each team is allowed a maximum of three contacts/hits with the **ball** before it must be sent across the net.

Violations will be called for the following:

- Stepping over the base line when serving the ball.
- Ball hits the net and fails to get over the net (If the ball hits the net and still goes over the net then this is perfectly legal).
- Players are not allowed to carry, palm or run with the ball.
- Players must not touch the net with any part of the body.
- The ball cannot travel under the net.
- Players cannot reach over the net and hit the ball.

BASIC RULES

Block	The combination of one, 2 or 3 players jumping in front of the opposing spiker and contacting the spiked ball with the hands.
Defense	The key skills used to receive the opponent's attack are digging and sprawling.
Hit	To jump and strike the ball with an overhand, forceful shot.
Pass	Receiving a serve or the first contact of the ball with the intent to control the ball to another player. Also called a "bump".
Serve	Used to put the ball into play. It is the only skill controlled exclusively by one player.
Set	The tactical skill in which a ball is directed to a point where a player can spike it into the opponent's court.



Within your lessons, you will need to answer these questions by the end of the topic: Give an example of a **violation** in Volleyball? Where must a player **serve** from? How many **contacts/hits** can each team make?

SCIENCE

Cycle 1

- **Biology** (Cells & Organisation)
- **Chemistry** (Atomic Structure and the Periodic Table)
- **Physics** (Energy)