The John of Gaunt School
A Community Academy

Name TG

# Year 7

# Knowledge Organisers

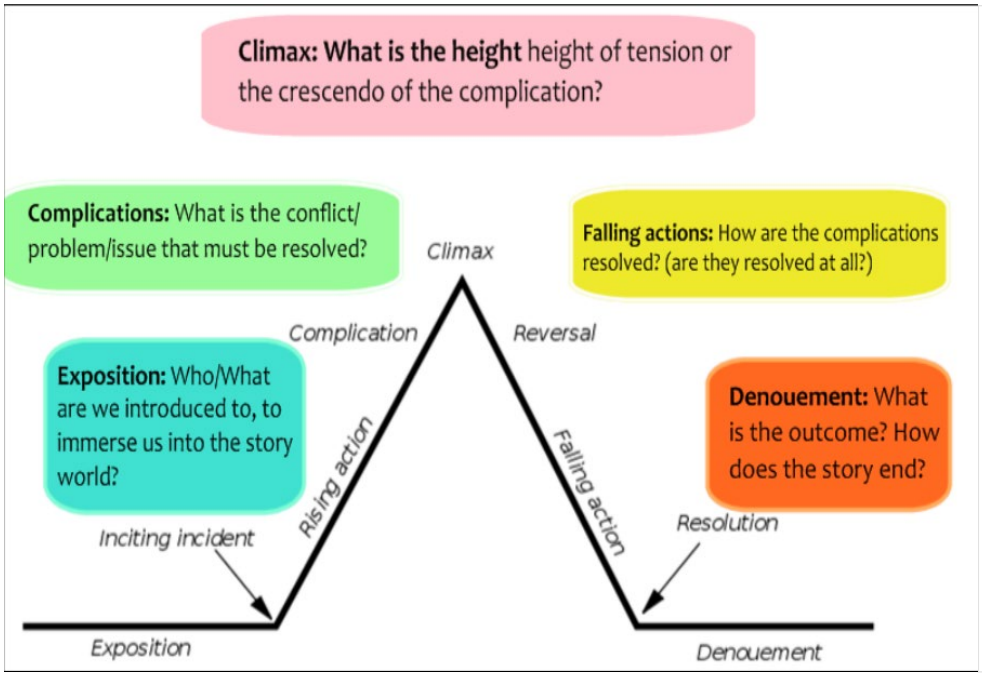
# Term 3 2026

# ENGLISH

# Fantastical Quests

## Key Vocabulary, Spellings and Definitions

1) **Fantasy** = a type of fictional writing that often has magical elements.
2) **Quest** = a long search or adventure.
3) **Noun** = names a person, place, thing, or idea (mushroom, door, ivy, spell, ruby).
4) **Pronoun** = takes the place of a noun, such as 'he,' 'she,' 'it,' or 'they'.
5) **Adjective** = describes or modifies a noun, providing more detail (large, red).
6) **Preposition** = connects nouns, pronouns, or phrases to other words in a sentence, showing relationships like location, time, or direction (e.g. in, on, at, to, from, with, and by).
7) **Expanded noun phrase** = a group of words that describe a noun by adding more detail, typically by including adjectives or prepositional phrases. (the large, red mushroom with the door).
8) **Compound adjective** = two or more words that function as a single adjective to modify a noun or pronoun, often joined by a hyphen (man-eating ivy, well-known spell, ruby-red toe).
9) **Plot** = Events that make up a story.
10) **Narrative arc** = structure of a story with clear beginning, middle and end.
11) **Simile** = Compares one thing to another using like or as. (His eyes were like black beetles).
12) **Metaphor** = Describes more directly by saying something is something. (Juliet is the sun).



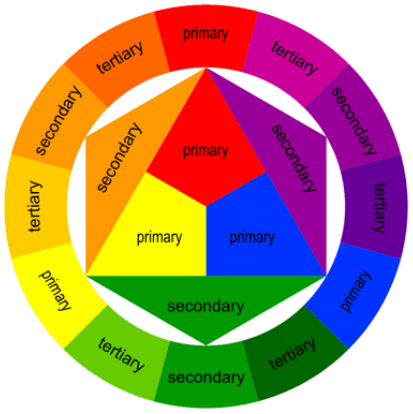

**The narrative arc** (seen here in Freytag's Pyramid) is the structure of a story, with a clear beginning, middle, and end that guides the flow of events and builds tension.

It is a framework made of five key stages: the exposition, where the setting and characters are introduced; the rising action, where conflict builds tension; the climax, the peak of the story's conflict; the falling action, where tension decreases; and the resolution/ denouement, where the story concludes.

## Types of narrative voice

| | | |
|---|---|---|
| **First person** | A character within the story is telling the story. Some of the main personal pronouns used are *I, my, me, we.* | *I watched as the boat sank. I felt a mixture of relief and guilt. I turned to take the rudder, pushing away the thoughts that crawled like ants into my mind.* |
| **Second person** | Not commonly used by writers. The personal pronouns *you* and *your* are used throughout. | *You watch as the boat slowly sinks. You feel relief mixed with guilt. You turn and take the rudder, pushing away the thoughts that crawl like ants into your mind.* |
| **Third person** | The story is being told by the voice of someone who is not a character in the story. The main personal pronouns used are *she, he* and *they.* | *George watched as the boat slowly sank. He felt relief mixed with guilt. He turned to take the rudder, pushing away the thoughts that crawled like ants into his mind.* |
| **Third person omniscient** | The story is being told by a voice who shows they know more than the characters in the story – the narrator is all knowing. The main personal pronouns used are *she, he* and *they.* | *George watched as the boat sank. He felt relief mixed with guilt. Six miles away a group of fishermen watched the horizon, looking for signs of the storm they could feel in the air.* |

# Year 7 Art and Design Knowledge Organiser




**Key words:**
**Acrylic.**
**Layers**
**Opaque/Opacity**
**Transparent**
**Saturation**
**Colour theory**

**ACRYLIC PAINT**

**THE PROS**

It's versatile. You can paint on any surface that is oil and wax free.
It dries quickly. This allows you to finish your project faster.
It's water-soluble. You can wash it off your hands and brushes (while they're still wet) with soap and water with no need for paint thinners. It's less toxic and safer around children and pets. It's more affordable. It's durable. As far as we know, acrylics are flexible and won't crack, peel, or turn yellow. It's vibrant. It's water-resistant when dry.

**THE CONS**

Its colour becomes darker when dry, so the colour you paint with isn't necessarily what you'll end up with. It's fast-drying, meaning you need to work quickly. It's hard to remove from brushes, nails or clothing once dried. You should also wear protective clothing. It's considered by some art galleries and collectors as 'not as valuable' when compared with other paint mediums.


## Key Artists to Compare and Analyse:

**Michael Craig Martin**

Makes large colourful paintings of 'everyday' things. Inspirational figure and teacher of the young British artists movement in the 1980's

**Extra Vocab.**
Colour
Scale
Everyday
Bold

**Audrey flack**

American artist making work from photographs and creating realistic looking paintings from everyday objects.

Still life
Photorealism
Birdseye view
Historical

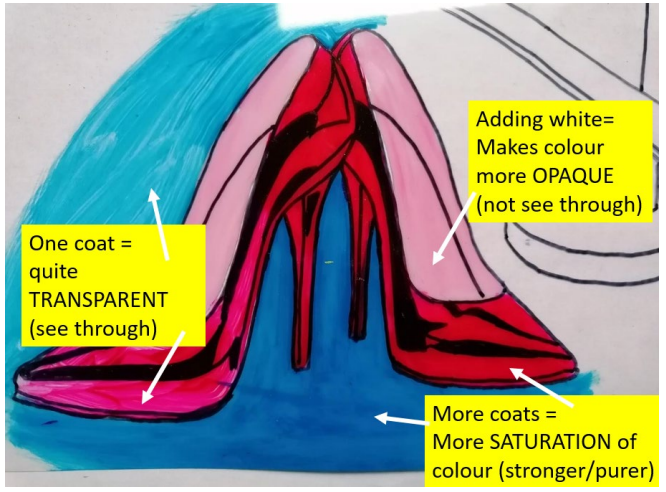
**Shadi Ghadirian**

Iranian photographer. Influenced by her experiences as a Muslim woman living in modern Iran.

Metaphor
Message
Shape
Limited-colour

## Key Words - definitions

| |
|---|
| **Shading** - the darkening or colouring of an illustration or diagram with parallel lines or a block of colour. |
| **Depth** - The apparent distance from front to back or near to far in an artwork. Techniques of perspective are used to create the illusion of **depth** in paintings or **drawings**. |
| **3D – three dimensional** - and object having or appearing to have length, breadth, and depth. |
| **Still life** - a painting or drawing of an arrangement of objects, typically including fruit and flowers and objects contrasting with these in texture, such as bowls and glassware. |
| **Shape** - the external form, contours, or outline of someone or something. |
| **Scale** - If you refer to the **scale** of something, you are referring to its **size** |
| **Colour** – this refers to the full ranges of colours you may use, colour comes in different shades |
| **Complimentary colour** - Complementary colours are pairs of colours which are opposite each other on the colour wheel -When placed next to each other, they create the strongest contrast |
| **Harmonious colours** – are groups of colours that are next to each other on the colour wheel |



unifrog **Career readiness means being prepared to succeed in the world of work — not just having a job, but being ready to grow, learn, and thrive in a career. It's about having the skills, knowledge, and attitudes that employers look for. The activities below are to help you reach career readiness.**

| | | | |
|---|---|---|---|
| Term 1   | Who am I?<br>Draw connections between their likes, culture, connections and interests<br>Understand that certain characteristics are protected by law | Who Am I work book<br>Who Am I ppt<br>Who Am I digital template | These are the tasks on unifrog and the suggested time when to do them. You are given the title of the resources so that you can find them yourself but they will appear on unifrog. You will get an email notification. The tasks are tracked.<br>The activities include the teacher powerpoint, which gives suggestions. Sometimes, it might be good to do the activity with a friend or parent so that you can share ideas.<br>The powerpoints are designed for a class of 30 pupils and have the teacher notes to help you. When working on your own, it will take 15 – 30 mins for the activities and longer for the thinking.<br>Create a folder in which to save your worksheets. |
| | Dream job<br>Exploring more than one dream job | Exploring possibilities dream job workbook<br>Exploring possibilities dream job ppt | |
| Term 2   | What is a career<br>Identify a range of career sectors and jobs that they might be interested in | What is a career workbook<br>What is a career ppt | |
| | What is an entrepreneur<br>Identify a range of career sectors and jobs that they might be interested in | What is an entrepreneur work book<br>What is an entrepreneur ppt | |
| Term 3  | What is a work life balance | Work life balance workbook<br>Work life balance ppt | |
| | Careers for the future<br>How have careers changed over the years | Careers and the future workbook<br>Careers and the future ppt | |
| Term 4 | Competencies and aiming high<br>Learning about goal setting | Competencies II aiming high workbook<br>Competencies II aiming high ppt | Useful websites to use<br>https://www.johnofgauntschool.org/parents-and-carers/careers-information<br>https://nationalcareers.service.gov.uk/<br>https://www.gov.uk/apply-apprenticeship<br>https://www.ucas.com/<br>https://www.wiltshire.ac.uk/<br>https://www.bathcollege.ac.uk/ |
| Term 5   | Careers and subjects quiz: sustainability<br>Exploring the subjects tool, creating favourites and doing career courses. | | |
| Term 6   | Introduction to the courses tool | Careers quiz careers and the Courses tool ppt | |
| | Complete a course using the courses tool | | |

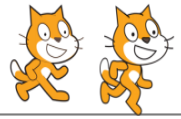
# Computer Science

# Problem Solving & Scratch

## Key content

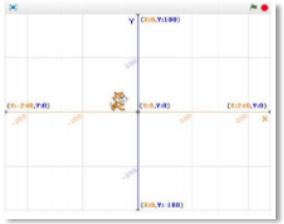
**Sprites**
A **sprite** is a character or object in your game or animation.

In order to give the impression that a character is moving you can change the sprites' **costume.**



**What is Scratch?**
Scratch is a visual **programming language** that allows you to create programs by dragging blocks of scripts.


**Stage**
The stage is the background of the project. Scratch uses co-ordinates to position different elements around the screen.



Different backgrounds can be imported or you can create your own.

**Scripts**
The commands in Scratch are split in to the following different sections:
Motion, Events, Looks, Control, Sound, Sensing, Pen, Operators, Data and More Blocks

**Operators**
Operators are used for **changing** or **comparing** data.

They can **add**, **subtract**, **multiply** and **divide** data

They can also check if values are **less than**, **greater than,** or **equal to** other values.

**Variables**
A variable is used to store data for use in your program.

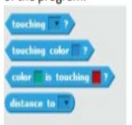
Variables can be used to store lots of different types of data such as names, numbers and scores.


The data stored in a variable can be changed or "varied" depending on certain conditions within a program.


**IF Statements**
IF statements can be used to select different scripts of a program depending on a condition .

Also known as **selection.**


**Sensing**
These are colour coded light blue and used to detect different factors of the program.




**Loops**
Loops are used as a way of repeating instructions.
Also known as **iteration.**


Repeats a certain number of times.

Repeats an instruction forever.

## Key Vocab

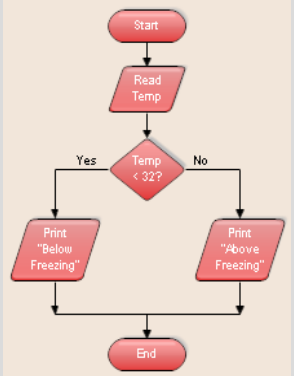
| Word | Definition |
|---|---|
| Computational Thinking | The steps you take to find the best solution to a problem |
| Decomposition | Breaking a problem down into smaller problems and solving each one individually |
| Abstraction | Picking out the important bits of information from the problem and ignoring the details that don't matter |
| Pattern Recognition | Finding similarities and patterns to solve a problem more efficiently |
| Algorithm | A sequence of logical instructions for carrying out a task |
| Program | Sequences of instructions for a computer |
| Programming | The process of writing computer software |
| Sequence | The specific order in which instructions are performed in an algorithm |
| Selection | A decision in a program. Allows for more than one path through an algorithm (IF & Else) |
| Iteration | The process of repeating steps (While & For) |
| Flowcharts | A diagram to represent the solution using given shapes and basics |
| Variable | A place in memory to store data that can be changed |
| String | Used to store a combination of characters (letters, number & symbols) |
| Integer | Used to store whole numbers |
| Boolean | When the option is true/false, yes/no |

## Diagrams:

**Data types**

String | Float or Real | Integer | Boolean

| Title | Rating | TimesViewed | Favourite |
|---|---|---|---|
| Zombie Attack | 9.5 | 83 | True |
| True Love | 8.0 | 5 | True |
| Mission: Pluto | 2.5 | 1 | False |




**Flowcharts**
- *Flowchart symbols:*

| Symbol | Name |
|---|---|
| | Start/end |
| | Arrows |
| | Input/Output |
| | Process |
| | Decision |

## More info can be found here:

Scratch is free to download and can be found at: https://scratch.mit.edu/
BBC BiteSize Computational Thinking:
https://www.bbc.co.uk/bitesize/topics/z7tp34j
BBC Bitesize Algorithms: https://www.bbc.co.uk/bitesize/topics/z7d634j

**DESIGN TECHNOLOGY YEAR 7 MODULE 6 Properties of materials**

When choosing the materials for a project you will need to consider the following points:-

Functional requirements
This refers to the function of the finished product and what demands will be made of the material and how it will be used.

Manufacturing demands
This is about choosing the right materials for the product and how that product could be made using that material.
E.g. plastics can be melted and moulded into shape however woods would generally need to be cut and joined.

Availability of supply
Most materials are available only in standard forms and sizes. The forms of materials are usually the cross-sectional shape of the material. Round, square, sheet, bar and tube.

Economics
Cost is always an important part of the choice of materials. Cost have also to be considered in how that material can be formed or manufactured.

## Forces that can act on a material

**Tension**

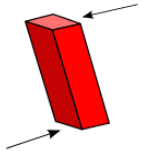
Pulling force

**Torsion**

Twisting force

**Shear**

Tearing force



**Compression**

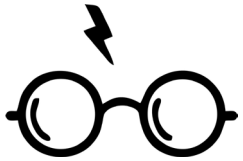
Squeezing force

| Key Words | Definitions |
|---|---|
| **Strength** | The ability of a material to withstand a force without breaking. |
| **Elasticity** | The ability of a material to bend and stretch without breaking. |
| **Malleability** | The ability of a material to be changed when a force is applied. |
| **Hardness** | The ability of a material to resist wear or indentations. |
| **Toughness** | The ability of a material to withstand sudden impacts. |
| **Durability** | The ability of a material to stay the same over time without wear or deterioration. |
| **Electrical conductivity** | The ability of a material to conduct electrical current. |
| **Thermal conductivity** | The ability of a material to conduct heat. |

**Extension Task:-** collect images of different product that use different materials and explain the properties required for each product and material?

Drama

Harry Potter



**This term we are going to be exploring the world of Harry Potter through the style of Physical Theatre.**

- Harry Potter is the story of a boy who finds out he is a wizard. As he explores the wizarding world he finds his life is not quite as it seems…
- Physical theatre is a practical style that relies on movement to tell the story. We can use physical theatre to create props and set, and create an environment.

## Key features of Physical Theatre

| Word | Definition |
|---|---|
| **Physical theatre** | Using your body to create environment |
| **Accuracy** | Looking like the object/prop you are trying to create |
| **Sustainability** | Holding the physical theatre shape or movement for long periods of time |
| **Levels** | Incorporating different heights into your piece of physical theatre |
| **Body propping** | Using your body to create an object |

## Key techniques

| Word | Definition |
|---|---|
| **Unison** | More than one actor doing the same thing at the same time |
| **Canon** | More than one actor doing the same thing one after the other |
| **Duet** | Two people |
| **Solo** | One person |
| **Proxemics** | Distance between actors |
| **Physicality** | Using your body to move and communicate |
| **Script** | Story written to be performed |
| **Dialogue** | What the characters say |
| **Stage directions** | What the characters do |
| **Blocking** | Staging of the performance |

# Food Preparation 3 yr. 7

# Healthy Eating

**Key content**

**The Eatwell Guide**

1. Comprises 5 main food groups.
2. Is suitable for most people over 2 years of age.
3. Shows the proportions in which different groups of foods are needed in order to have a well-balanced and healthy diet.
4. Shows proportions representative of food eaten over a day or more.

**8 tips for healthier eating**

These eight practical tips cover the basics of healthy eating, and can help you make healthier choices.

1. Base your meals on starchy carbohydrates.
2. Eat lots of fruit and veg.- fresh, canned, dried and frozen all count.
3. Eat more fish – including a portion of oily fish.
4. Cut down on saturated fat and sugar.
5. Eat less salt (max. 6g a day for adults).
6. Get active and be a healthy weight.
7. Don't get thirsty.
8. Don't skip breakfast.

Diagrams:



**Key vocab**

| Word | Definition |
|---|---|
| The Eatwell Guide | A healthy eating model showing the types and proportions of foods needed in the diet. |
| Hydration | The process of replacing water in the body. |
| Dietary fibre | A type of carbohydrate found in plant foods. |
| Composite/combination food | Food made with ingredients from more than one food group. |
| Balanced diet | A diet that maintains or improves overall health. A healthy diet provides the body with essential nutrition. |
| Saturated Fat | A type of fat predominantly comes from animals that contribute to weight gain, heart disease. Beef, pork, lamb, burgers, sausages, cheese, butter. |
| 5 a day | There are significant health benefits to getting at least 5 portions of a variety of fruit and vegetables every day. That's 5 portions of fruit and veg in total, not 5 portions of each. A portion of fruit or vegetables is 80g. |
| Blood Pressure | Diet can affect your blood pressure, high blood pressure can lead to heart disease. Food high in salt can contribute to high blood pressure. |

More info can be found here:
https://www.foodafactoflife.org.uk/11-14-years/healthy-eating/ - **Food a Fact of Life**

**Task**

Plan a menu for a day that applies the principles of The Eatwell Guide and the 8 tips for healthier eating. Make one of the dishes, complete a sensory evaluation and calculate the energy and nutrients provided using nutritional analysis.

# Geography

# Africa

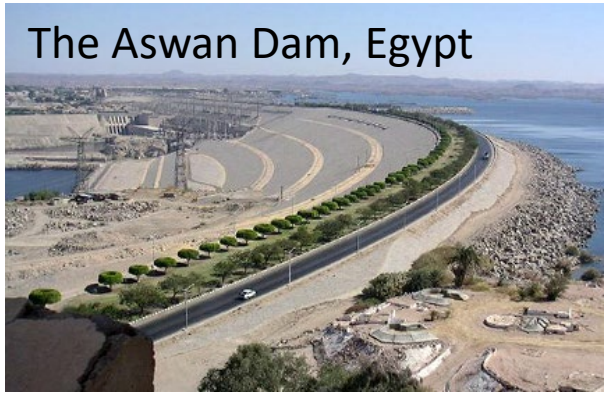
- Africa is a vibrant continent made up 54 different countries. These countries are incredibly varied with a unit physical and human environment
- People often view Africa through a negative lens, this could not be further from the truth. We will challenge stereotypes and see the continent for the varied and vibrant group of diverse countries that it is.
- It has a varied physical environment including mountains, savanna and deserts
- Kenya: Tourism brings many benefits to countries such as Kenya who receive 2 million visitors every year. Many jobs are created and this boosts the economy. It also brings many challenges such as seasonal work and can be very poorly paid. Tourism has also damaged the environment with increased pressures on ecosystems. Kenya's capital city is called Nairobi. Kibera is an informal settlement on the edge of Nairobi.
- Egypt: The river Nile flows through Egypt. This river is the longest river in the world. In the 1960's a huge dam, called the Aswan Dam was built across the river. This provides sustainable energy called HEP. It also allows Egyptian farmers to irrigate their fields and grow crops in the desert. The Aswan dam also has it's negative side; tiny snails have been trapped in Lake Nasser (the lake created behind the dam) and these can cause a disease called schistosomiasis and this can make people very sick. When the dam was built many thousands of people were displaced from their homes
- Nigeria: This country is home to Nollywood, the second biggest film industry in the world. This country has the strongest economy in Africa, its economy is growing on average by 3%. People have benefited enormously from this as jobs are created and people are becoming wealthier. The capital city is called Abuja but the biggest city is called Lagos.

**Key vocab**

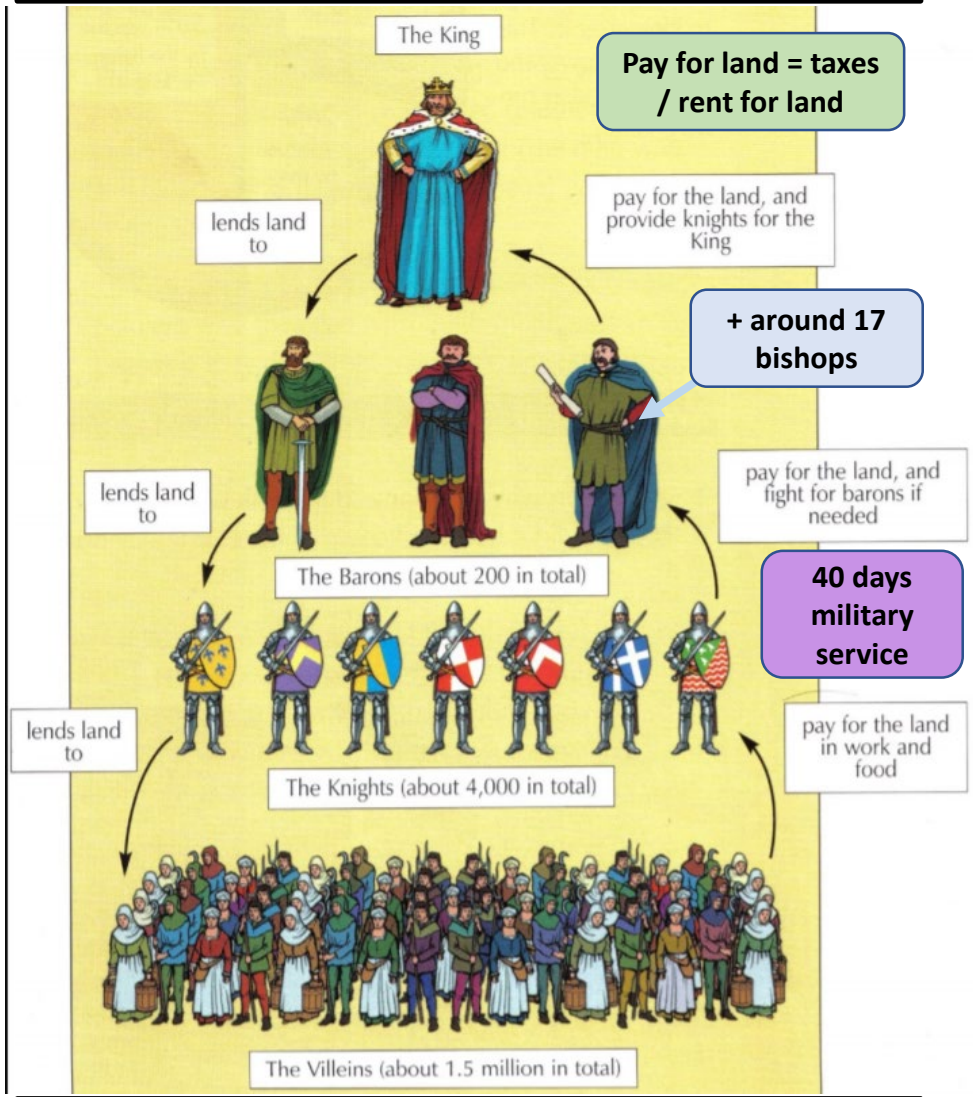
| Word | Definition |
|---|---|
| Tourism | Tourism is travel for business or pleasure, and the operation of businesses providing these services. |
| Safari | an expedition to observe or hunt animals in their natural habitat, especially in East Africa. |
| HEP | Hydro electric power |
| Seasonal work | Work that is only available for part of the year |
| Dam | An artificial structure that blocks a rivers natural course |
| Irrigate | To divert water from rivers onto farmland |
| economy | This is related to the money, jobs and industry in a country |
| Informal settlement | These used to be called slums, these are illegal settlements made of improvised housing. They typically have a strong sense of community and a range of job opportunities |

The Kenyan savanna

The Aswan Dam, Egypt



## The Feudal System (from 1066 – 1660)




**The Domesday Book** – William's 1086 survey of land and property. Interviewed elders, priests and stewards. Gave William knowledge (so power) and allowed him to collect correct amounts of taxes.

Challenge yourself to learn more about Medieval here:
**https://www.bbc.co.uk/bitesize/topics/zfphvcw**

## Castles Timeline of 1066

**1. Motte & Bailey c.1066-c.1100**
**WEAKNESS:** Catch fire / rotting / damp / small / wooden palisade & gateway can be climbed or smashed through

**2. Stone Keep Castles c.1100 – c.1300**
**IMPROVEMENTS:** Bigger / stone won't rot, burn or smash easily, well (water), raised entrance, harder to climb
**WEAKNESS:** Smash door / crack walls by undermining towers / cold / small / no outside space / climb walls using scaling ladders or siege towers

**3. Curtain Wall Castles c.1100 – c.1300**
**IMPROVEMENTS:** Outside space / circular towers can't be undermined / extra wall to protect / bigger / warmer / extra barbicans (gatehouses) / portcullis
**WEAKNESS:** Smash doors / climb walls using scaling ladders or siege towers

**4. Concentric Castles c.1300-c.1500**
**IMPROVEMENTS:** extra lower walls to kill attackers / extra circular towers / gatehouses / portcullises
**WEAKNESS:** Increasing use of cannons from c.1400

**5. Gun-platform Castles c.1509-c.1950s**
**IMPROVEMENTS:** No windows / thicker walls / circular walls / beneath ground level / platforms for cannons
**WEAKNESS:** Increasing use of cannons and various other powerful explosives up to 1950.

# History – KPI 3: Norman Conquest & Rule

| Key term | Definition |
|---|---|
| Trebuchet | Large catapult |
| Barbican | Fortified (strengthened gateway) |
| Motte | Man-made hill to put castle on |
| Bailey | Living area or space outside a keep |
| Keep | Main secure part of castle |
| Siege | Surrounding a castle until it surrenders |
| Undermine / tunnelling | Dig under a wall or tower to make it collapse and crack |
| Scaling ladder | Ladder used to climb castle walls |
| Taxes | Money given to government / king |
| battlements | Defensive "teeth" designs of walls |
| Portcullis | Iron gate which can be raised |
| Palisade | Tall wooden fence |
| Villein / Peasant | Someone who works the land for their lord (so they can live on it) |
| Manor | Name given to land held by a lord |
| Oath of fealty | Swearing a promise of loyalty |
| Domesday Book | Report from 1086 listing owners of ALL property and land in England (for taxes) |
| Feudal System | System of "holding land" for person above you – but must be loyal to them. |

# Music

# Notation Part I

## Key content

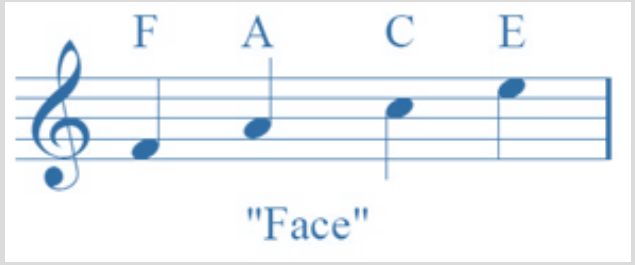
This term we will be learning to read and write traditional musical notation. Notation is just writing music down so players can easily read the **pitch (the actual note) and duration (how long it lasts)** of the notes they are supposed to play. The notes are written on 5 lines which we call the **stave**. You will be learning to read music on the stave and also compose (write your own) music on the stave.

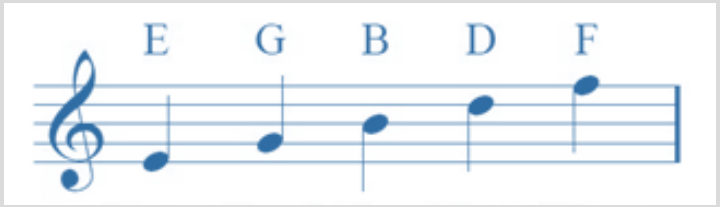
## Diagrams:

### The different beat lengths

| Note | Name | Beats |
|---|---|---|
| 𝅝 | Semi Breve | 4 beats |
| 𝅗𝅥 | Minim | 2 beats |
| ♩ | Crotchet | 1 beat |
| ♪ | Quaver | ½ beat |
| 𝅘𝅥𝅯 | Semi Quaver | ¼ beat |

### The order of the notes on the Treble clef stave



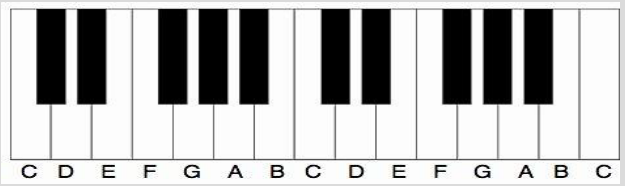




## Key vocab

| Word | Definition |
|---|---|
| Stave | The 5 lines the music is written on |
| Treble Clef | A symbol that tells you the order of the notes on the stave |
| Sharp | A symbol that tells you to play ½ a tone up |
| Flat | A symbol that tells you to play ½ a tone down |
| Conductor | The person who leads a group of musicians |
| Semibreve | A note that lasts for 4 beats |
| Minim | A note that lasts for 2 beats |
| Crotchet | A note that lasts for 1 beat |
| Quaver | A note that lasts for ½ beat |
| Melody | The main tune |

## Diagrams:

Treble Clef




Sharp

flat

Subject: Physical Education

Topic: Year 7 SOCIAL ME

**Key content**

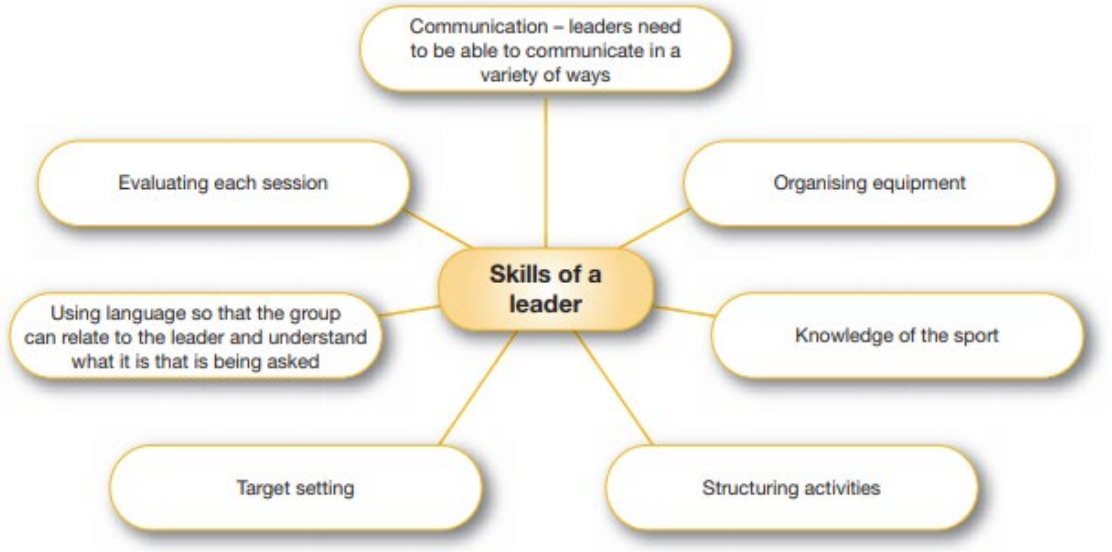
- To know what is required to be a successful team member. This can include positioning, inclusion, encouragement & hard work
- Be able to lead by listening to instructions and relaying them to others.
- Give feedback using the following process:

Know what to look for:
Technical
OR
Tactical

→ See and identify what you're looking for

→ Say what you have seen
Strength or Area to Improve

→ Maintain performance or provide an action point to improve




| Key Word / Term | Definition |
|---|---|
| Position | Where on the pitch / court are you playing |
| Discipline | To stay within the rules or requirements of a task |
| Organisation | Having the right equipment, set up and |
| Communication | How you interact with others through voice, body language and demonstration |
| Confidence | Displaying yourself well in front of others |
| Strengths | An identified area of skill performed well by yourself or others |
| Areas for Improvement | An identified area of skill that needs to be improved in order to achieve success |
| Feedback | Offering advice or guidance on what is successful or needs to be improved |

| 3. SOCIAL ME | | | |
|---|---|---|---|
| TEAM WORK | | | |
| 1. BE ABLE TO CONRTIBUTE TO A TEAM BY BEING POSTIONALLY DISCIPLINED | | | |
| LEADERSHIP | | | |
| 2. BE ABLE TO LEAD AN INDIVIDUAL OR SMALL GROUP IN AN ACTIVITY OR DRILL | | | |
| FEEDBACK | | | |
| 3. BE ABLE TO GIVE FEEDBACK TO YOURSELF AND OTHER INDIVIDUALS ACROSS A RANGE OF ACTIVITIES | | | |

# Year 7 RE Term 3 Sacred Texts

| Key word | Definition |
|---|---|
| Sacred Text | Special book or writing that is holy and important |
| Scripture | Another word for sacred texts |
| Bible | Sacred text (holy book) for Christians |
| Vedas | Ancient sacred texts for Hindus |
| Teachings | Lessons or advice found in sacred texts |
| Creation | A story/belief about how the world and everything in it began |
| Interpretation | He way people explain/understand the meaning of sacred texts |
| Literal | Understanding words exactly as they are written |
| Non-literal | Understanding words as a story or symbol |
| Rama & Sita | Important characters in Hindu stories |
| Racism | Treating people unfairly because of their race/skin colour |
| Segregation | Keeping people apart |
| Tradition | Beliefs and practices passed down from scared texts through generations |

## Key Content:

Sacred texts are special books that are important in religions. People respect them because they believe they contain messages from God, lessons about life, or stories that guide how we should live.

One well-known sacred text is the book of **Genesis**, which begins with the **creation story**. In this story, God creates the world in six days: light and dark, the sky, the land and sea, plants, animals, and finally humans. On the seventh day, God rests. This story is important because it shows believers that the world is a gift from God. Some read it **literally**, believing it happened exactly as written, while others read it **non-literally**, as a story that teaches truths about God's power and care.

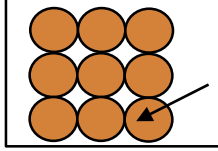
Another story comes from the Hindu tradition – the story of **Rama and Sita**. Rama is a prince, and Sita is his wife. When Sita is kidnapped by the demon king Ravana, Rama rescues her with the help of his friends, including the monkey god Hanuman. This story teaches values like bravery, loyalty, and the victory of good over evil. It is remembered every year at **Diwali**, when families light lamps to celebrate light overcoming darkness.

Sacred texts and stories also include inspiring speeches. One famous example is the **"I Have a Dream"** speech by **Martin Luther King Jr.**, a Christian pastor and leader in the fight against racism. In 1963, he spoke to thousands of people in Washington, D.C., sharing his dream of a world where people are judged not by the colour of their skin but by their character. His words encouraged people to fight peacefully for justice and equality. Martin Luther King often used ideas from the Bible, but his speech is respected beyond religion because it inspires people to work for fairness and hope.

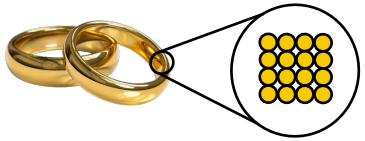
When we study sacred texts and important stories, we see they often share lessons. The Genesis creation story shows the importance of caring for the world. The story of Rama and Sita teaches loyalty and courage. Martin Luther King's speech calls us to treat everyone with respect. Together, these remind us of values that matter to everyone: love, justice, and hope.

# Chemical changes

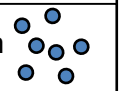
**Atom**
The smallest particle of matter, which all things are made of.



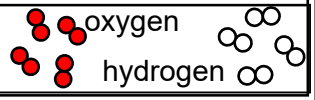

**Element**
A pure substance that is made of only one type of atom. All atoms of an element are identical, e.g. Gold is an element made up of gold atoms only. The 118 known elements are listed on the periodic table of elements.



The atoms of some elements do not join together, but instead they stay as separate atoms, e.g. helium.




The atoms of other elements join together to make **molecules**, e.g. oxygen and hydrogen.




## Properties of elements

Individual atoms do not have the properties of the element. The properties of an element are because of the arrangement and b eha viour of the atoms as a group.

| Metals | Non- metals |
|---|---|
| most are shiny | most are dull |
| most are hard | solid non - metals are soft and easy to cut, **except carbon as diamond** |
| most are strong | most are not strong |
| most are sonorous (makes a ringing sound when hit) | most are not sonorous |
| malleable (easy to reshape without breaking) | not malleable |
| most are ductile (can be drawn out into a long wire without breaking ) | not ductile |
| most have very high melting and boiling points | most have very low melting and boiling points |
| some but not all are magnetic | not magnetic |
| conduct electricity | non- metals do not conduct electricity, **except carbon as graphite** |
| good at conducting heat | poor at conducting heat |

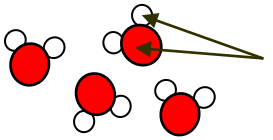
## Writing element symbols

The first letter is always written as a capital letter and if there is a second letter, it is always written as a lowercase l ett er.
Element symbols make writing elements easier and allow scientists all over the world to communicate and write about them.

| Na | O |
|---|---|
| sodium | oxygen |

# Chemical changes

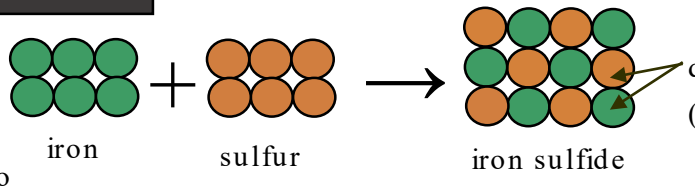
**Compound**
A substance made of two or more different elements chemically joined (bonded) together.
A chemical bond is a strong force that holds atoms together in a compound. Lots of energy is needed to break a chemical bond. A compound cannot be easily separated.
A compound may have very different properties to those of the elements from which it is made.
Water is a compound of hydrogen and oxygen.
Each of its molecules contains two hydrogen atoms and one oxygen atom.



water

## Chemical reactions

When chemicals react, the atoms are rearranged. For example, iron reacts with sulfur to make iron sulfide. Iron sulfide, the compound formed in this reaction, has different properties to the elements it is made from.



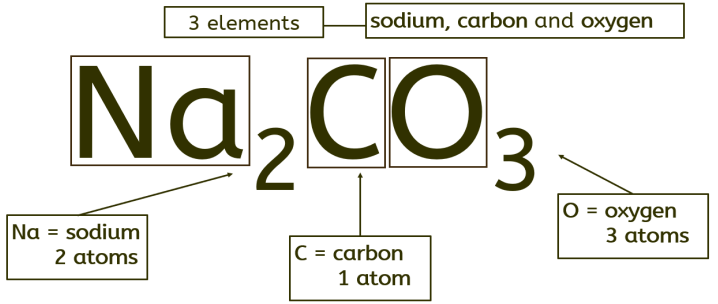

| | iron | sulfur | iron sulfide |
|---|---|---|---|
| **Type of substance** | element | element | compound |
| **Colour** | silvery grey | yellow | black |
| **Is it attracted to a magnet?** | yes | no | no |

## Conservation of mass

Atoms are not destroyed nor created during chemical reactions, so in any reaction:
**Total mass of reactants = total mass of products**

## Chemical formulae

A chemical formula uses chemical symbols and numbers to show how many of each atom is present in a compound.
The small numbers (subscript) go at the bottom.
For example:
$CO_2$ is correct;
CO2 and $CO^2$ are wrong.




The formula for sodium carbonate is $Na_2CO_3$. It tells you that sodium carbonate contains two sodium atoms (Na x 2), one carbon atom (C) and three oxygen atoms (O x 3).

**Naming metal and non - metal compounds**
The metal element (furthest left on the periodic table) comes first in the name of the compound. The ending for the non - metal is shortened and changed to ' –ide'. E.g. iron + sulfur → iron sulfide

**Naming three element compounds containing oxygen**
The metal element (furthest left on the periodic table) comes first in the name of the compound. If there are three elements in the compound, and one of them is oxygen, the ending of the non- metal is shortened and changed to '–ate'. E.g. lithium + nitrogen + oxygen → lithium nitrate

# Chemical changes

## Chemical equations

We summarise chemical reactions using equations:

reactants → products

- **Reactants** are shown on the **left** of the arrow;
- **Products** are shown on the **right** of the arrow.

**Do not** write an '=' sign instead of an arrow.

If there is more than one reactant or product, they are separated by a '+' sign. For example:

copper + oxygen → copper oxide

**Reactants**: copper and oxygen
**Products**: copper oxide

A **word equation** shows the names of each substance involved in a reaction and **must not include any chemical symbols or formulae.**

## Oxidation reactions

In oxidation reactions, a substance gains oxygen. Metals and non-metals can take part in oxidation reactions (be oxidised).

Magnesium reacts with oxygen to form magnesium oxide:
magnesium + oxygen → magnesium oxide
$2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

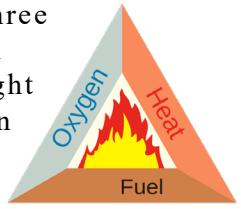
Carbon reacts with oxygen to form carbon dioxide:
carbon + oxygen → carbon dioxide
$C(s) + O_2(g) \rightarrow CO_2(g)$

Another example is a combustion reaction, where we burn fuels in oxygen:

**Fuel + oxygen → carbon dioxide + water**

**methane + oxygen → water + carbon dioxide**

- Combustion is another name for burning fuels.
- It is an exothermic reaction.
- The fire triangle shows three components which, when combined, provide the right conditions for combustion to happen.




## Thermal decomposition reactions

This is the breaking down of a substance, using heat, to form two or more products. It is an endothermic reaction.
Many metal carbonates take part in thermal decomposition reactions. For example, copper carbonate:

copper carbonate is green; copper oxide is black.
**copper carbonate → copper oxide + carbon dioxide**
$CuCO3(s) \rightarrow CuO(s) + CO_2(g)$

## Exothermic and Endothermic reactions

- **Exothermic** reaction - **transfers** energy to the thermal store of the surroundings. This causes a **rise** in temperature (**positive** temperature change).
- Hand warmers transfer energy to the thermal store of the surroundings by an exothermic oxidation reaction.
- **Endothermic** reaction – **transfers** energy in from the thermal store of the surroundings. This causes a **drop** in temperature (**negative** temperature change).
- Sports injury packs transfer energy from the thermal store of the surroundings by an endothermic reaction.

Temperature data collected from exothermic and endothermic reactions can be improved by:

- Using a **polystyrene c** up as an insulator, as it reduces energy transfers to or from the surroundings.
- Using a **lid** to reduce energy transferred from the surface.
- Using a **digital thermometer** , which is easier to read than a regular thermometer and, if it measures in decimal places, also has better resolution.

**State symbols** in chemical formulae provide information about the physical state of the reactants and products.
(s) – solid , (l) – liquid, (g) – gas, and (aq) – aqueous solution (i.e. dissolved in water).
The state symbol comes after the chemical formula and is written in lower case and in brackets. E.g. $CuCO_3(s) \rightarrow CuO(s) + CO_2(g)$

# Year 7
# Term 3: El tiempo libre y los deportes

## ¿Qué te gusta hacer en tu tiempo libre? (what do you do like to do in your free time?)

**En mi tiempo libre** (In my free time)

**me encanta** (I love)
**me gusta** (I like)
**prefiero** (I prefer)
**no me gusta** (I do not like)
**odio /detesto** (I hate)

**bailar** (to dance)
**mandar mensajes** (to send messages)
**dormir** (to sleep)
**escuchar música** (to listen to music)
**nadar** (to swim)
**ir de compras** (to go shopping)
**cocinar** (to cook)
**hacer deporte** (to do sport)
**leer libros** (to read books)
**sacar fotos** (to take pictures)
**jugar videojuegos** (play videogames)
**jugar al fútbol** (to play football)
**cantar** (to sing)
**ver la tele** (watch tv)

**con** (with)

**mis amigos** (my friends)
**mi familia** (my family)
**mis hermanos** (my siblings)
**mi perro** (my dog)
**mi gato** (my cat)
**mi amigo** (my friend who is a boy)
**mi amiga** (my friend who is a girl)
**mi padre** (my father)
**mi madre** (my mother)

**porque es** (because it is)

**divertido** (amusing/fun)
**estupendo** (brilliant)
**fenomenal** (fantastic)
**genial** (great)
**guay** (cool)
**tranquilo** (calm)
**interesante** (interesting)
**aburrido** (boring)
**caro** (expensive)
**barato** (cheap)
**sano** (healthy)
**peligroso** (dangerous)

**y** – and
**pero no**– but I don´t
**también** – also
**sin embargo** - however

**muy** – *a lot*
***bastante*** – *quite*
***un poco*** – *a little bit*

## ¿Qué deporte haces/practicas/juegas? (what sport do do/practise/play?)

**Todos los días** (Every day)
**De vez en cuando** (From time to time)
**A veces** (Sometimes)
**Los lunes** (On Mondays)
**Siempre** (Always)
**Una vez a la semana** (once a week)
**Cuando tengo tiempo** (when I have time)
**Los días de la semana** (on week days)
**Los fines de semana** (on the weekends)
**Nunca** (never)

**juego** (I play)
**hago** (I do)
**practico** (I practise)

**al fútbol** (football)
**al baloncesto** (basketball)
**al tenis de mesa** (table tenis)
**al voleibol** (volleyball)
**al ajedrez** (chess)
**a las cartas** (card)
**al rugby** (rugby)
**al tenis** (tennis)
**al hockey** (hockey)
**el patinaje** (skating)
**la natación** (swimming)
**la equitacion** (horse riding)
**el atletismo** (athletics)
**la gimnasia** (gymnastics)
**la vela** (sailing)
**el judo** (judo)
**el esquí** (skiing)
**el ciclismo** (cycling)
**el baile** (dancing)

**porque es** (because it is)

**divertido/a** (amusing/fun)
**estupendo/a** (brilliant)
**fenomenal** (fantastic)
**genial** (great)
**guay** (cool)
**relajante** (relaxing)
**interesante** (interesting)
**aburrido/a** (boring)
**competitivo/a** (competitive)
**sano/a** (healthy)
**peligroso/a** (dangerous)
**emocionante** (exciting)
**difícil** (difficult)

LAST PAGE