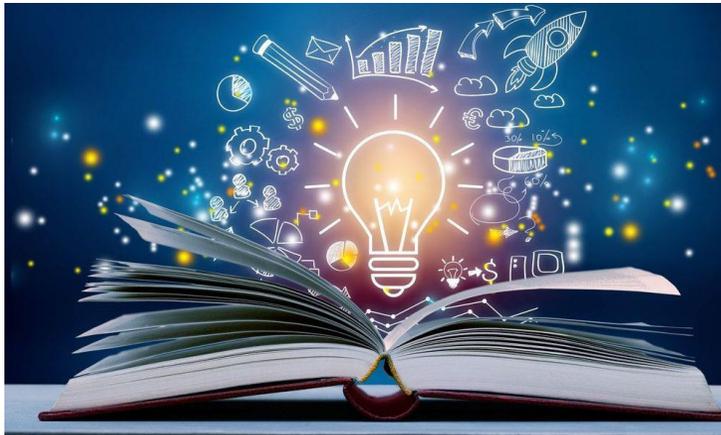




Dorset  
Studio School  
CENTRE OF EXCELLENCE FOR  
ENVIRONMENTAL SCIENCES

# Knowledge Organiser Booklet

Year 7 Summer Half Term 2



'Knowledge is the key  
to understanding,  
Understanding is the  
key to achieving'  
Penelope V. Yorke

Name: \_\_\_\_\_

Tutor group: \_\_\_\_\_

## Contents

- Home learning timetable
- Instructions on how to use a knowledge organiser
- English
- Maths
- Science
- Humanities
- Land & Environment
- Art
- Music
- MFL
- ICT



Education  
Endowment  
Foundation

+5
months

Research carried out by the Education Endowment Foundation proved that: Homework has a positive impact on average of + 5 months, particularly with pupils in secondary schools.

### Home learning timetable

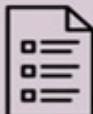
The table below details which days each subject will set home learning on each week. Students will have one week to complete home learning tasks for each subject.

Group	Monday	Tuesday	Wednesday	Thursday	Friday
7N	Humanities Art	Science MFL	Maths Science	English Music	Reading
7E	MFL Science	Art Humanities	Maths Science	English	Music Reading
7W	MFL	Science Art	Maths Humanities	English Science	Music Reading

Please note you have two science teachers; science home learning will be set by both teachers

These knowledge organisers have been created by your teachers to support your learning both in class and for home learning. They are also a valuable revision tool for you to use independently when preparing for assessments. It is important that you make good use of your knowledge organisers by learning how to use them in different ways.

## How to use a knowledge organiser – step by step guide

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	<p>Look at and study a specific area of your KO.</p> 	<p>Write down the key words and definitions.</p> 	<p>Use your KO to condense and write down key facts or information onto flash cards.</p> 	<p>Use your KO to create a mini quiz. Write down your questions using your KO.</p> 	<p>Create a mind map with all the information you can remember from your KO.</p> 	<p>Ask a friend or family member to have the KO or flash cards in their hands.</p> 
Step 2	<p>Cover or flip the KO over and write down everything you can remember.</p> 	<p>Try not to use your KO to help you.</p> 	<p>Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other!</p> 	<p>Answer the questions and remember to use full sentences.</p> 	<p>Check your KO to see if there are any mistakes on your mind map.</p> 	<p>They can test you by asking you questions on different sections of your KO.</p> 
Step 3	<p>Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat.</p> 	<p>Use your green pen to check your work.</p> 	<p>Ask a friend or family member to quiz you on the knowledge.</p> 	<p>Ask a friend or family member to quiz you using the questions.</p> 	<p>Try to make connections, linking the information together.</p> 	<p>Write down your answers,</p> 



**6.1 – Plot Structure**



The King's boat is shipwrecked in a storm.

Prospero tells Miranda about their past – 12 years ago his brother stole his Dukedom and had him banished.

Prospero escaped to the island with baby Miranda and his magic books.

Prospero has two slaves – Ariel who created the storm and Caliban the native islander.

Alone after the wreck, Ferdinand, the King's son, falls in love with Miranda at first sight.



Antonio and Sebastian plot to kill the King. Ariel stops them.

Stephano and Trinculo discover Caliban and give him wine. He thinks they must be Gods and asks them to kill Prospero. Ariel overhears their plot.

Prospero gives his blessing for Ferdinand and Miranda to marry.

Ariel sets a trap for Caliban, Stephano and Trinculo and they are chased off by spirit dogs

Ariel brings all members of the King's party to Prospero's cell and traps them in a magical circle

Prospero gives up his magic and instead of taking revenge, forgives his enemies and releases his slaves.



**6.2 – Character Summaries**

**Prospero:** A powerful wizard. Usurped by his brother and banished to an island for 12 years, he is seeking revenge

- Powerful
- Masterful
- Vindictive
- Wronged
- Vengeful
- Forgiving



'For this, be sure, tonight thou shalt have cramps, Side-stitches that shall pen they breath up'

'My high charms work, And these, mine enemies, [...]now are in my power'

'I'll break y staff [...] I'll drown my book'

**Miranda** – Prospero's daughter. She has lived in the island since she was a baby and only seen her father and Caliban, their monstrous slave.

- Naïve
- Compassionate
- Gentle
- Sheltered
- Loving
- Controlled



'I pitied thee, Took pains to make thee speak, taught thee each hour'

'O brave new world That has such people in 't!'

**Alonso** King of Naples – he banished Prospero years ago. He fears his son is dead after the shipwreck.

**Ferdinand** The King's son. He falls in love with Miranda and they eventually marry

**Sebastian** – The King's brother. He enters into a plot with Antoinio to kill his brother and become King but is stopped by Ariel

**Ariel:** a magical sprite. Freed from a tree by Prospero, he is now his slave and creates the Tempest that wrecks the ship on his order.

- Mischeivious
- Powerful
- Enslaved
- Enchanted
- Manipulative
- Omnipresent



'All hail, great master! Grave sir, hail! I come To answer thy best pleasure'

'You are three men of sin [...]unfit to live'

'Your charm so strongly works 'em That, if you now beheld them, your affections Would become tender'

**Caliban** – Prospero's slave. The original inhabitant of the island, he despises Prospero for taking his beloved island

- Resentful
- Enslaved
- Savage
- Grotesque
- Gullible
- Remorseful



'This island's mine, that thou takest from me.'

'A plague upon the tyrant that I serve!'

'Be not afeard. This isle is full of noises, Sounds and sweet airs that give delight and hurt not'.

**Antonio** – Prospero's brother. He stole his brother's Dukedom years ago. On the island he encourages Sebastian to kill his brother the King

**Stephano**– The ship's drunken butler. Caliban convinces him to kill Prospero to become Lord of the Island

**Trinculo**– The ship's jester. He plots with Caliban and Stephano to kill Prospero



6.3 – Themes



**Power**

Lots of the characters crave power and are willing to kill to gain it; Power corrupts the soul. When Prospero relinquishes his power he is happier and free

Scan me to watch 'The Tempest'



**Magic**

Magic is used to punish, control and manipulate others in the play. Ultimately it is used for evil. Prospero giving up his magic teaches us that magic and the supernatural should be left alone

Scan me for a video on themes



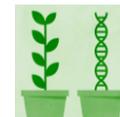
**Colonialism**

The bitter, enslaved Caliban represents the life of those colonized by Europeans. Prospero's decision to return the island to Caliban suggests lands belong to their indigenous people



**Forgiveness**

Prospero has the opportunity to take revenge. However, he ultimately opts for forgiveness over vengeance. Prospero realizes that punishing others will not restore what he lost. By forgiving his enemies he gains freedom



**Nature vs Nurture**

Shakespeare contrasts Caliban, the grotesque offspring of the witch Sycorax, and the innocent Miranda. However, it is the way he has treated each of them that has determined their personalities suggesting nurture overrules nature

6.4 – Context

**Shakespeare : 1564 - 1616**

- William Shakespeare is the World's most famous playwright.
- He wrote 37 plays and hundreds of sonnets (a type of poem).
- Born in Stratford Upon Avon, he moved to London where he wrote and performed for the rest of his life.
- Shakespeare's plays were loved by the most poverty stricken peasants right up to England's Royalty.
- It is believed Shakespeare invented or adapted over 1700 new words!

**The Globe Theatre**

- First built in 1599, The Globe theatre (named for its round shape) was built specifically for Shakespeare's plays by the Thames river.
- In 1613 it burned down when the thatched roof caught fire when a cannon was fired to announce the King's arrival.
- It was rebuilt in 1614, but demolished In 1644.
- A new Globe theatre was built in 1997 and remains today.

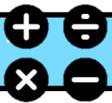


**The British Empire and Colonialism**

**Jacobean Era : 1603 - 1625**

- The British Empire was one of the largest empires in history and had a significant impact on global history, culture, and politics.
- The British Empire began its expansion in the late 16th century – when Shakespeare was writing
- By late 19<sup>th</sup> Century it became the largest empire in history, controlling about 25% of the world's land area.
- The empire was often referred to as "the empire on which the sun never sets," as it spanned multiple continents and time zones.

- The Jacobean era followed the Elizabethan era (Queen Elizabeth I).
- 'The Tempest' was written during the reign of King James I.
- Both Queen Elizabeth and King James regularly attended Shakespeare's plays at The Globe.
- The Jacobean era is known as 'The Golden Age of Literature', partly due to Shakespeare's contributions.
- This era fell during the **Renaissance**, a period in European history when an interest in classical scholarship, art and literature developed.



Key Terms:

**Term:** Each value in a sequence is called a term.

**Rule:** The value that a sequence increases or decreases by.

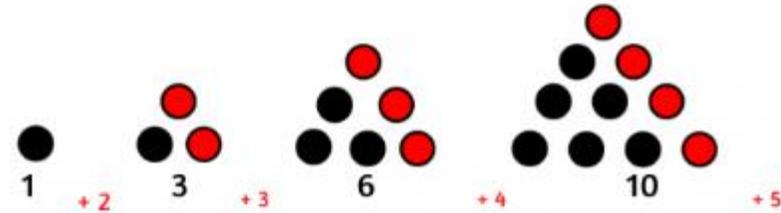
**Sequence:** A number or picture pattern with a specific rule.

**Linear sequence:** A sequence that increases or decreases by the same number between each term.

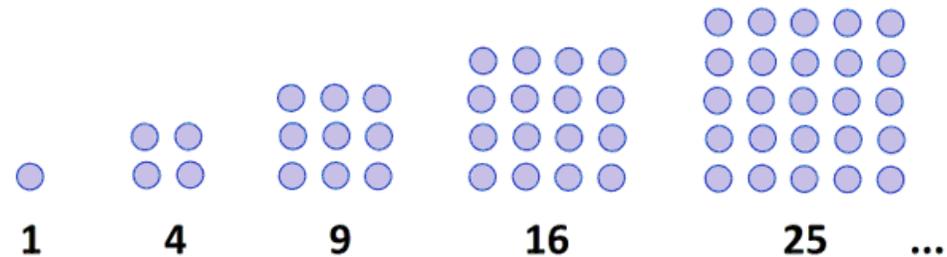
**Nth term:** A rule which allows you to calculate the term that is in the  $n$ th position of the sequence. Also known as the 'position to term' rule.

**Generate:** When we substitute values into the  $n$ th term to calculate the original sequence.

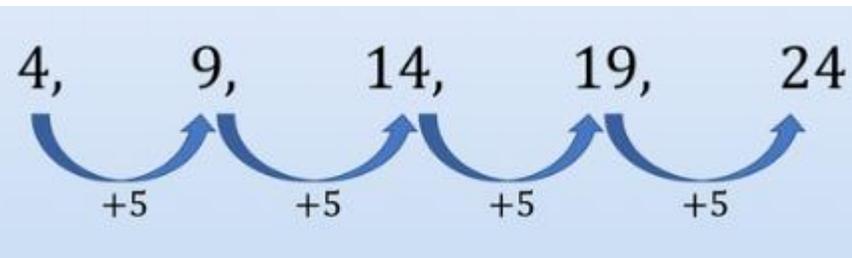
Triangular numbers – add 2, then 3, then 4 to get the next term in the sequence

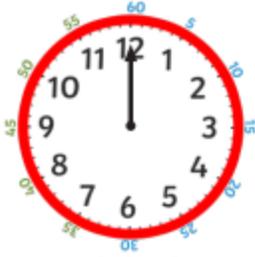


Square numbers

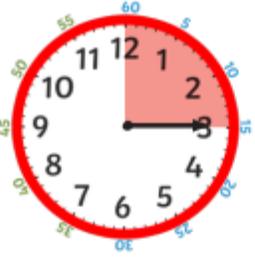


A linear sequence is obtained by adding or subtracting the same value.  
This linear sequence increases by 5 each time

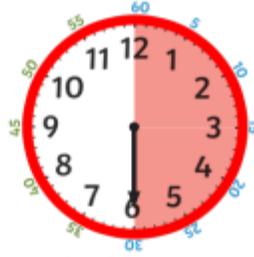




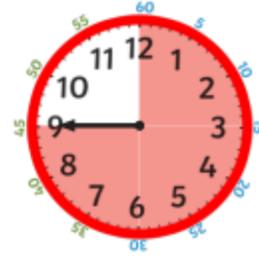
o'clock



quarter past



half past



quarter to

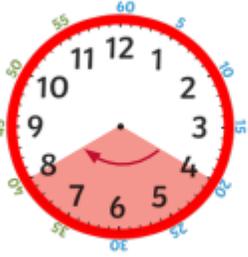
**Minutes in an Hour**  
There are 60 minutes in an hour. We can count in 5s around the clock to see the minutes.



We can use this knowledge to begin telling time to five minutes.



Start



Duration



End

**20 minutes** has passed.

Converting units of time

- To change from seconds to minutes, divide by 60.
- To change from minutes to hours, divide by 60.
- To change from hours to minutes, multiply by 60.
- To change from minutes to seconds, multiply by 60.

e.g. 245 minutes into hours and minutes is  
 $245 \div 60 = 4.083333... \text{ hours}$   
 So this is 4 whole hours plus some minutes.  
 4 hours is  $4 \times 60 = 240$  minutes.  
 $245 \text{ minutes} - 240 = 5 \text{ minutes}$ .  
 So 245 minutes is 4 hours and 5 minutes.

Calculating with time

e.g. A television programme starts at 07:10 and finishes at 09:15. How long is it on for?  
 From 07:10 to 08:00 is 50 minutes. From 08:00 to 09:00 is 1 hour. From 09:00 to 09:15 is 15 minutes.  
 So in total it is 50 minutes + 1 hour + 15 minutes.  
 $50 \text{ minutes} + 15 \text{ minutes} = 65 \text{ minutes} = 1 \text{ hour } 5 \text{ minutes}$ .  
 So in total it is 1 hour + 1 hour 5 minutes = 2 hours 5 min.

This is 24hr notation. It is the same as 9:15 am.



These are words used in science investigations. Learn to spell these key words and their meanings.

**Data** : Information that has been collected.

**Evidence** : Data which is valid.

**Range** : The maximum and minimum values of the independent or dependent variables.

**Interval** : The size of the gap between the values of the independent variable.

**True value** : This is the value that would be obtained in an ideal measurement.

**Accuracy** : A measurement result that is close to the true value.

**Measurement error** : The difference between a measured value and the true value.

**Anomalies** : These are values in a set of results which are significantly different to the other measured values.

**Variables** : These are physical, chemical or biological quantities or characteristics.

**Independent variable** : This is the variable for which values are changed or selected by the investigator.

**Dependent variable** : This is the variable of which the value is measured for each and every change in the independent variable.

**Control variables** : These may affect the outcome of the investigation and therefore have to be kept constant.

**Fair test** : A fair test is one in which only the independent variable has been allowed to affect the dependent variable.

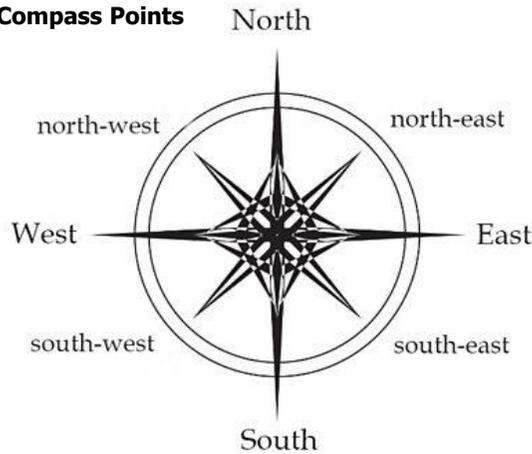
**Repeatable** : A measurement is repeatable if the same person repeats the investigation using the same method and equipment and obtains the same results.

**Reproducible** : A measurement is reproducible if the investigation is repeated by another person, or by using different equipment or techniques, and the same results are obtained.

**Valid conclusion** : A conclusion supported by valid data, obtained from an appropriate experimental design and based on scientific reasoning.



**6.1 Compass Points**



**6.3 Skills Key Terms**

<b>5.2.1. Physical Geography</b>	The study of the Earth's physical features and processes, including; Coast, rivers, tropical rainforests, hot deserts, weather and tectonic events like earthquakes.
<b>5.2.2. Human Geography</b>	Geography that studies the relationships between humans, societies, cultures, economies and the environment.
<b>5.2.3. Ordnance Survey Map</b>	These are detailed maps produced by the national mapping agency of Great Britain. They are known for their high accuracy and are used for a variety of purposes, including planning outdoor activities, hiking, and even local landmark exploration.
<b>5.2.4. Field Sketch</b>	A simple drawing used to record observations and measurements made during geography fieldwork. It's a way of documenting the landscape, features and conditions at a specific location. Field sketches help us remember places, record observations and can serve as memory aids for later analysis.

**6.2 Atlas Skills**

<b>6.2.1. Continents</b>	A continent is a large land mass on the Earth. There are seven continents: Asia, Africa, North America, South America, Antarctica, Europe, and Australia (sometimes called Oceania).
<b>6.2.2. Countries</b>	A nation with its own government, occupying a particular territory e.g. France.
<b>6.2.3. Counties</b>	In the United Kingdom, counties are geographic areas used for administrative, historical, and cultural purposes. They are often referred to as "shires" e.g. Hampshire.
<b>6.2.4. Oceans</b>	Oceans are vast bodies of saltwater that cover a significant portion of the Earth's surface. There are 5 oceans; Atlantic, Pacific,
<b>6.2.5. Republic</b>	A country without a monarch (king or queen).
<b>6.2.6. Hemisphere</b>	Areas of the world are often referred to as in the northern or southern hemisphere (above or below the equator).





**Topic Tent Posts**  
- 706

**Key Vocabulary**

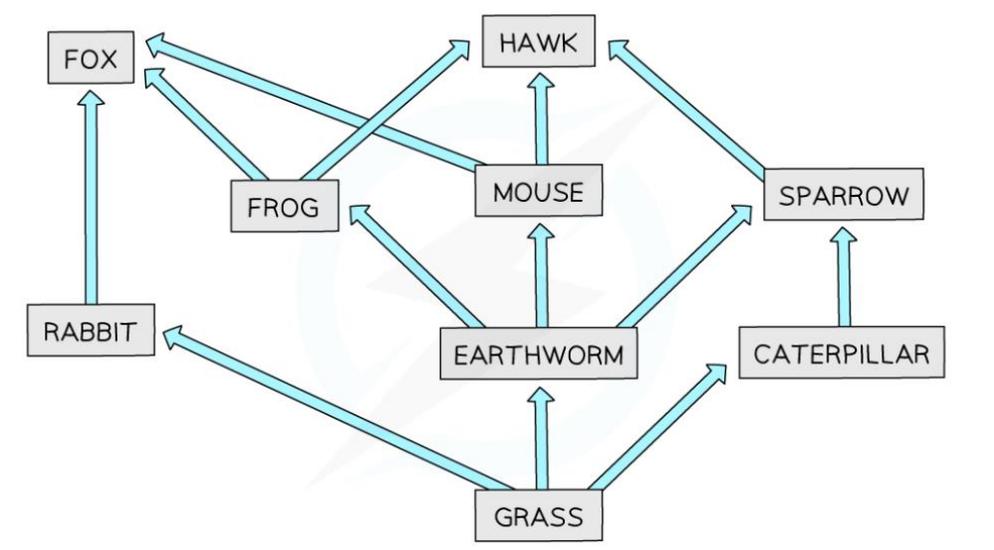
- Ecosystem
- Habitat
- Food web
- Flora
- Fauna
- Diverse
- Lowland
- Calcareous
- Food web
- Predator
- Prey

**This is topic is about Grassland Habitat**

**Habitat**  
A **UK grassland habitat** is a type of ecosystem dominated by grasses and herbaceous (non-woody) plants, typically found in areas where tree growth is limited by factors such as soil, climate, or land use. Grasslands are important for biodiversity, supporting a wide range of plant, insect, bird, and mammal species.



**Species -Flora:** Diverse grasses (e.g. red fescue), wildflowers (e.g. hare bells, bird's-foot trefoil)



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*A food web shows the interdependence of organisms*

**Species – Fauna:** Important for pollinators (bees, butterflies), ground-nesting birds (like skylarks), barn owls and small mammals (like voles).





## Major Threats to UK Grassland Habitats

### Agricultural Intensification

Use of fertilizers and pesticides reduces plant diversity. Conversion of grasslands into arable farmland destroys habitat. Overgrazing or undergrazing disturbs natural balance.



### Development and Urbanisation

Grasslands are often built over for housing, roads, and industry. This leads to habitat fragmentation and species loss.

### Climate Change

Alters growing seasons and plant composition. Shifts in temperature and rainfall patterns affect species interactions.

### Neglect or Abandonment

Without traditional grazing or mowing, scrub and trees can invade. This turns grasslands into woodland or rank vegetation, reducing biodiversity.

### Invasive Species

Non-native plants (e.g. Himalayan balsam) can dominate. They reduce space and resources for native grassland species.

### Pollution

Nitrogen deposition from air pollution can change soil chemistry. Invasive species often thrive in altered soil, outcompeting native plants.

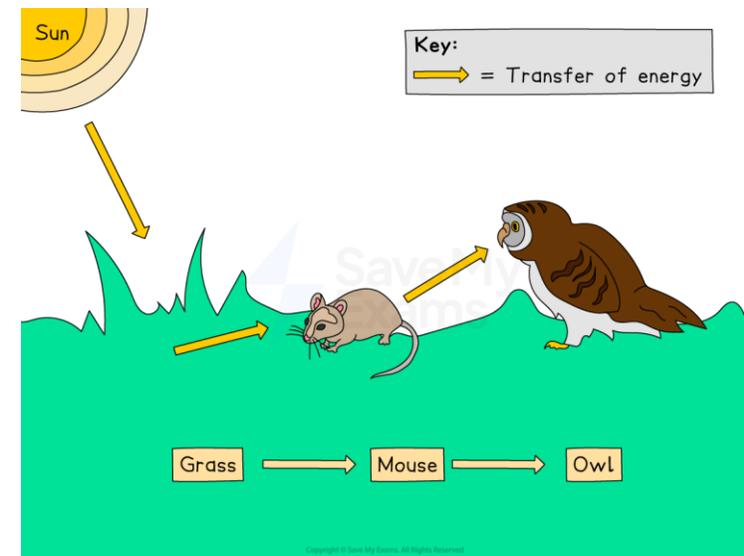
### Climate Change

Alters growing seasons and plant composition. Shifts in temperature and rainfall patterns affect species interactions.

## Calcareous grasslands

Found on chalk and limestone soils (e.g. Dorset), these are home to specialist species like horseshoe vetch and rare butterflies such as the chalkhill blue.

## Food chain and energy transfer through the ecosystem





In this project we will be exploring the different ways music has influenced artists and how artists have tried to represent music in art



**SYNAESTHESIA**

**Drawing:**  
Line, shape, composition, colour



**Oil pastel:**  
Blending, directional lines, tone, texture



**BLACK-OUT SONG LYRICS**



# ART & MUSIC

**ABSTRACT**



**Mixed Media:**  
Collage, oil pastel, acrylic paint, pen



**POPULAR CULTURE**



**Painting:**  
Acrylic paint, flat colours, colour theory



**GRAPHIC DESIGN**

Key vocabulary
Abstract
Blending
Contrast
Line
Pattern
Tone
Multiple perspectives
Mixed media
Cubism
Composition
Black-out poetry
Flat colour
Graphic design
Popular culture

*Artists we will study:* Wassily Kandinsky, Georges Braque, Tom Phillips, Jamie Hewlett



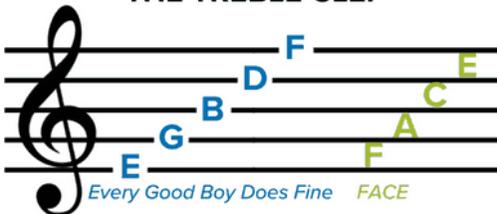
1. The Musical Elements are the basic building blocks of all music

<b>Tempo</b>			<b>fast or slow</b>
<b>Texture</b>			<b>thick or thin</b>
<b>Timbre</b>			<b>the specific sound an instrument makes</b>
<b>Dynamics</b>			<b>loud or quiet</b>
<b>Duration</b>			<b>long or short notes</b> <b>Rhythm</b> is the pattern of long or short notes
<b>Structure</b>			<b>layout</b> of a piece (How it is put together)
<b>Pitch</b>			<b>high or low</b> A <b>melody (tune)</b> has different pitches of notes

2. Keywords

Sound effects	artificially created or enhanced sound
Sampling	the technique of reusing sounds and music as part of a composition
Chromatic movement	step movements using all of the black and white notes (semitones)
Staccato	short spiky notes
Legato	long smooth notes
Syncopated	off-beat rhythms
Leitmotif	a recurring musical theme, associated with a particular character, place or idea

**THE TREBLE CLEF**




Semibreve 4 beat note	Minim 2 beat note	Crotchet 1 beat note	Quaver ½ beat note	Semi-quaver ¼ beat note
				



DAILY ROUTINE

me despierto	<i>I wake up</i>
me levanto	<i>I get up</i>
me ducho	<i>I have a shower</i>
me visto	<i>I get dressed</i>
desayuno	<i>I have breakfast</i>
me lavo los dientes	<i>I brush my teeth</i>
me peino	<i>I do my hair</i>
voy al colegio	<i>I go to school</i>
almuerzo	<i>I have lunch</i>
vuelvo a casa	<i>I go back home</i>
ceno	<i>I have dinner</i>
hago los deberes	<i>I do my homework</i>
voy al gimnasio	<i>I go to the gym</i>
veo la tele	<i>I watch the telly</i>
me acuesto	<i>I go to bed</i>
leo	<i>I read</i>
me duermo	<i>I fall asleep</i>



SPORTS: JUEGO = I PLAY HAGO = I DO

**Juego...**

al tenis 

al fútbol 

al voleibol 

al baloncesto 

**Hago...**

artes marciales 

atletismo 

natación 

gimnasia 

equitación 

**WHAT IS FAIR TRADE?**

Work in decent conditions 

Sustainable production and consumption 

Paying fair prices 

No forced labour or child labour 

Fair for all: employment and opportunities without discrimination 

Empowering, not exploitative 

**GOOD WORKING CONDITIONS:**

- Having a safe and healthy environment.
- Having fair pay & reasonable hours.
- Having a supportive workplace.
- Having teamwork & communication.
- Having opportunities for growth.

**BAD WORKING CONDITIONS:**

- Having unsafe work environments.
- Having unhealthy physical conditions.
- Having inadequate resources.
- Having poor organisation.



Knowledge Organiser: Computational Thinking

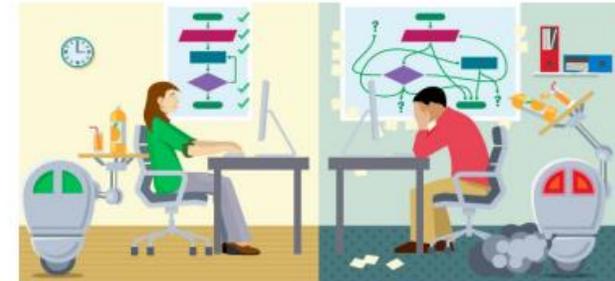
What is Computational Thinking

Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions. We can then present these solutions in a way that a computer, a human, or both, can understand.

The Four Cornerstones of Computational Thinking are: Decomposition, Pattern Recognition, Abstraction and Algorithms

Decomposition

Decomposition is one of the four cornerstones of Computer Science. It involves breaking down a complex problem or system into smaller parts that are more manageable and easier to understand. The smaller parts can then be examined and solved, or designed individually, as they are simpler to work with.



Pattern Recognition

When we decompose a complex problem we often find patterns among the smaller problems we create. The patterns are similarities or characteristics that some of the problems share.

Pattern recognition is one of the four cornerstones of Computer Science. It involves finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems more efficiently.

Abstraction

Once we have recognised patterns in our problems, we use abstraction to gather the general characteristics and to filter out of the details we do not need in order to solve our problem.

Abstraction is the process of filtering out – ignoring - the characteristics of patterns that we don't need in order to concentrate on those that we do. It is also the filtering out of specific details. From this we create a representation (idea) of what we are trying to solve.

Key Vocabulary

<b>Abstraction</b>	The process of separating and filtering out ideas and specific details that are not needed in order to concentrate on those that are needed.
<b>Algorithm</b>	A sequence of logical instructions for carrying out a task. In computing, algorithms are needed to design computer programs.
<b>Decomposition</b>	The breaking down of a system into smaller parts that are easier to understand, program and maintain.
<b>Pattern Recognition</b>	Finding similarities and patterns in order to solve complex problems more efficiently.
<b>Program</b>	Sequences of instructions for a computer.
<b>Programming</b>	The process of writing computer software.

Algorithms

An algorithm is a plan, a set of step-by-step instructions to resolve a problem. In an algorithm, each instruction is identified and the order in which they should be carried out is planned.

What is an algorithm?

Algorithms are one of the four cornerstones of Computer Science. An algorithm is a plan, a set of step-by-step instructions to solve a problem. If you can tie shoelaces, make a cup of tea, get dressed or prepare a meal then you already know how to follow an algorithm.

Evaluating Solutions

Before solutions can be programmed, it is important to make sure that it properly satisfies the problem, and that it does so efficiently. This is done through evaluation.

Evaluation is the process that allows us to make sure our solution does the job it has been designed to do and to think about how it could be improved.

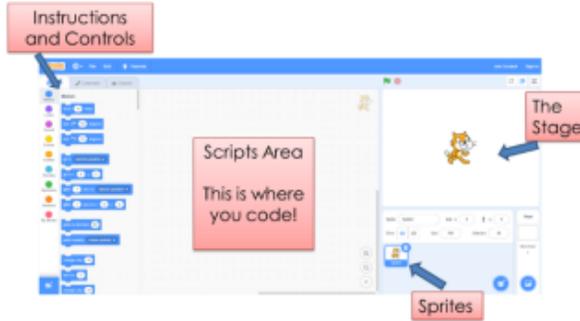
**Failure to evaluate can make it difficult to write a program.** Evaluation helps to make sure that as few difficulties as possible are faced when programming





### The Scratch Interface

<b>Instructions and Controls</b>	This area contains various blocks of code, which allows you to piece together logic in order to code your programs
<b>Scripts Area</b>	This is the workspace upon which you drag and join the required blocks of code, to create the logic for your program
<b>The Stage</b>	This is the canvas on which your program will be displayed.
<b>Sprites</b>	Programmable objects. For example, if you are creating a game, your character would be a sprite.



### Key Vocabulary

Key Word	Definition
<b>Sprite</b>	An object which can be programmed in Scratch
<b>Block</b>	A piece of programming code in Scratch
<b>Inputs</b>	Values which get sent from the user into the computer
<b>Variables</b>	The place where inputs get stored by the program (they represent memory locations)
<b>Outputs</b>	The values which get sent from the computer to the user
<b>IF Statement</b>	The logic used to program decisions in programs

### Inputs

The ASK block is an input script. When it is run, it will pause the program and wait for the user to enter some text.

The input will be stored in a variable called 'answer'.

### Variables

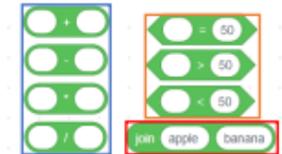
Variables represent locations in memory where data is stored. We can create as many variables as we like when we program (we don't have to only use the ASK block). We can therefore store as many inputs as we like, all while the program is running.

Variables are created in the orange 'variables' blocks section.

If we wish to add data to a variable, we use the 'Set' block.

### Operators

The operator blocks allow us to perform calculations, see how data relates to each other and join text and variable contents together. Below is an example of some of arithmetic operators, relational operators and also the concatenation (joining) operator.



### Outputs

The SAY block is an output script. When it is run, it will output whatever is contained in its contents box, for a given number of seconds.

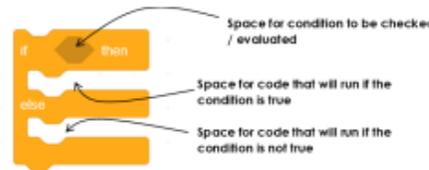
We can also insert variables into the say script, so that the contents of variables can be outputted. The JOIN operator can be used to join together the contents of variables with some text.

### IF Statements

IF statement allows programs to take different pathways depending on conditions.

In Scratch, the IF block contains spaces for...

- a condition to be checked
- blocks to run if the condition is true
- blocks to run if the condition is false.



For more pathways, IF blocks can be placed inside other IF blocks.

If this condition is TRUE (i.e. if answer contains a 1), then the program will output 'Sorry to hear that you are not...'. However, if this condition is FALSE (i.e. if answer does not contain a 1), then the program will run another IF statement, to check if answer contains a 2.

And if it doesn't contain a 2, then it will run another IF statement to check if answer contains a 3.

And if it doesn't find either a 1, 2 or a 3 in the answer variable, then it will output an error message.