

Knowledge Organisers are designed to help and support you to learn the key knowledge within the subjects you study.

In addition to your Knowledge Organisers Learning Consultants may still provide Independent Learning to further develop your skills, knowledge and understanding within the subject.

*'The best advice I ever got was that knowledge is power and to keep reading'.  
David Bailey.*

# Using your Knowledge Organisers

## **Expectations:**

- Study at least one section of a Knowledge Organiser for independent learning (homework) each evening. Aim to spend at least 30 minutes on this.
- You will also be tested in your lessons on the information on your Knowledge Organiser.

## **How to get the most out of your Knowledge Organisers:**

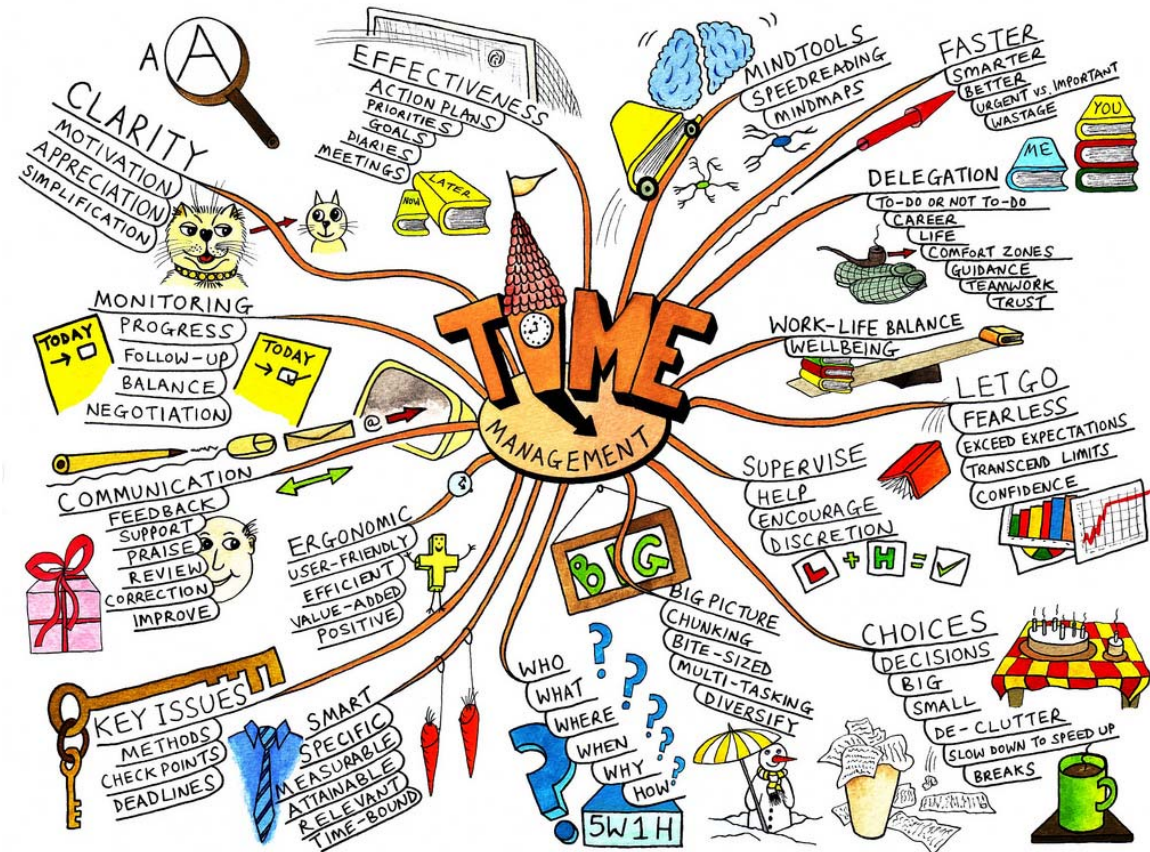
- Sometimes your Learning Consultant may tell you how to use certain sections of your Knowledge Organisers. In addition, they are a very useful tool for independent study and will help ensure that you know many of the facts and key areas of information in each of your subject areas. You can use your Knowledge Organisers in a number of different ways, including:
  - Use the 'Thinking Hard' strategies to refine your notes from the Knowledge Organiser
  - Write your own challenging questions on a section. Leave these until the next day to answer
  - Ask someone to write or ask you questions based on a section.
  - Put keywords into complete sentences
  - Look, Cover, Write and Check key words and terminology to help with spelling
  - Carry out further research on a topic
  - Create mind maps, flash cards, timelines, diagrams to aid with revision
  - Self test

# Mind Mapping

Mind Mapping is a process that involves a distinct combination of imagery, colour and visual-spatial arrangement. The technique maps out your thoughts using keywords that trigger associations in the brain to spark further ideas.

How to mind map:

<https://www.youtube.com/watch?v=u5Y4plsXTV0>

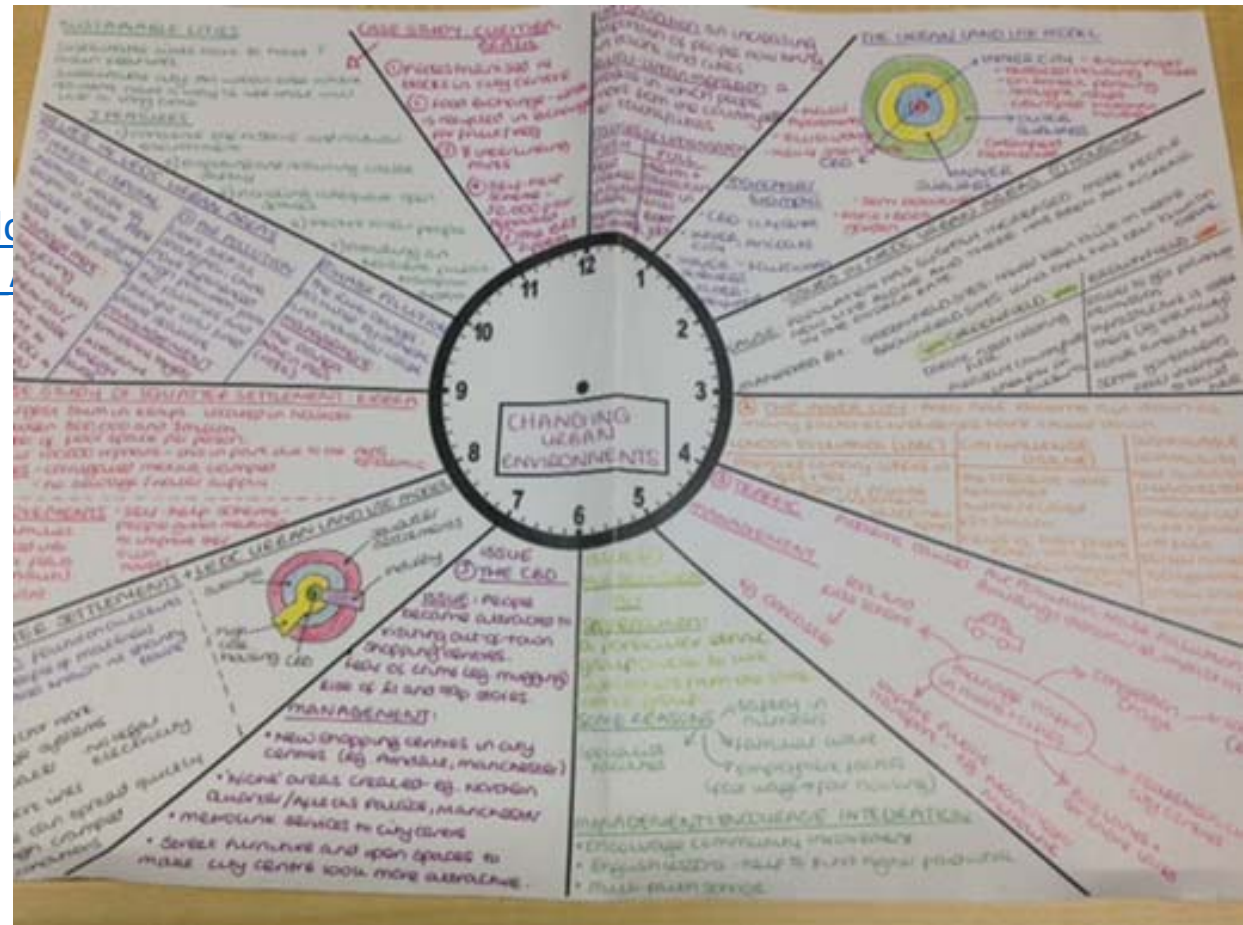


# Revision Clock

Make notes in each chunk of the clock. Revise each slot for 5 minutes, turn the clock over and then try to write out as much information as you can from one of the segments. Eg. all the information in the 2-3pm segment.

## Revision clock template:

[https://www.google.co.uk/search?q=revision+cl...&rlz=1C1GCEW1gMD6wflEaHWNzqQKHHSChkQ...&as\\_spe=1543251070019](https://www.google.co.uk/search?q=revision+cl...&rlz=1C1GCEW1gMD6wflEaHWNzqQKHHSChkQ...&as_spe=1543251070019)





# Flash Cards



- To make your own, take some card and
- cut into rectangles roughly 10cm x 6cm
- You could write down the key content of the topic and then try to reduce this to keywords to summarise the topic
- You could then write the keyword on one side and the definition on the other.
- Then go through your cards looking at one side and seeing if you can remember the keyword/definition on the other side.
- Prioritise cards you have previously got wrong.

# The Thinking Hard Process

## Knowledge and understanding

Reduce  
Transform  
Deconstruct  
Derive



Reduce it



Transform it



Deconstruct  
it



Derive it

## Analysis and application

- Prioritise
- Categorise
- Criticise
- Trends and patterns
- Practise



Prioritise  
it



Categorise  
it



Criticise it



Find  
Trends/  
patterns

## Flexibility of thinking

- Make connections
- Compare
- Extend
- Create



Connect it



Compare it



Extend it



Create it



**Reduce it**

Reduce the key information into 20 words.

**Reduce it**

Key information:

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**Reduce it**

Sum up the key information into 5 bullet points.

1. 

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2. 

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3. 

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4. 

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5. 

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**Reduce it**

Write 3 questions that the knowledge organiser has answered so far.

**Reduce it**

1. 

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2. 

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3. 

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**Reduce it**

Sum up the content of the knowledge organiser into three key words and justify why you have chosen them.

**Reduce it**

1. 

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2. 

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3. 

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Transform it

Transform the knowledge organiser into a series of pictures.



Transform it

Transform the knowledge organiser into a piece of poetry.



Transform it

Transform the knowledge organiser into a mnemonic.



Transform it

Transform the knowledge organiser into a series of flash cards





## Deconstruct it

Now that you have some new information, write the title in the box and deconstruct it. From the title and new information, tell us what the knowledge organiser is all about.

### Deconstruct it

Title:

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## Deconstruct it

Take part of the Knowledge organiser and deconstruct it into a flow chart or a process diagram. What are the links?

### Deconstruct it

Title:

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### Prioritise it

Prioritise the knowledge you have learnt from sections of your organiser.  
From most important to least important.

### Prioritise it

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_



### Categorise it

Order the information from your Knowledge Organiser into different categories or groups.

### Categorise it

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### Criticise it

Can you criticise parts of your knowledge organiser? Is all the information factually true? How do we know?

### Criticise it

Topic or title:

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### Practice it

Write your own exam question based on your knowledge organiser.

Answer it.

### Practice it

Exam Question:

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Connect it

Connect it

Write down 4 key words from your knowledge organiser.

Connect them to each other using lines and say why they connect along the line.



Connect it

Connect it

How the information on the knowledge organiser link to another topic we have studied?

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Connect it

Connect it

You're the information on the knowledge organiser to answer your 'Big picture' questions.

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Connect it

Connect it

Draw a mind map showing how aspects of your knowledge organiser are linked together

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**Compare it**

Compare two aspects of your knowledge organiser. How are they different? How are they the same?

**Compare it**

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**Extend it**

Write down 5 key words from the knowledge organiser.  
Define those key words and use them in a sentence.

**Extend it**

Key words:

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**Extend it**

Collect or draw ten pictures to represent the information on the knowledge organiser.

**Extend it**



**Extend it**

Write 50 words to explain the content on your knowledge organiser.

**Extend it**

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Create it

Create it

Create a  
'foldable'  
To show what  
you have  
learnt from the  
knowledge  
organiser.



Create it

Create it

Question 1:

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Answer:

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Question 2:

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Answer:

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Question 3:

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Answer:

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Create a short  
test about what  
we have been  
learning about  
so far.

Write the model  
answers in your  
book.



Create it

Create it

Create a series  
of flashcards  
with the key  
information on  
from your  
knowledge  
organiser



Create it

Create it

Learning Question:

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Create a set of  
Cornell notes  
detailing key  
ideas from the  
knowledge  
organiser.

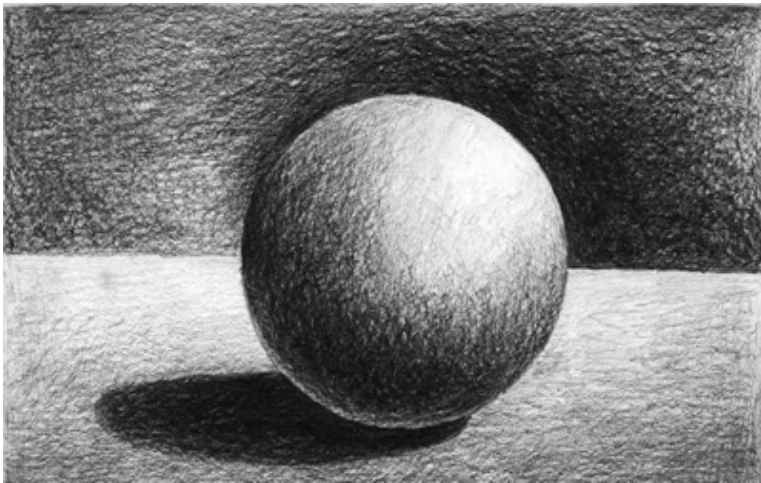


# Year 7 Knowledge Organisers

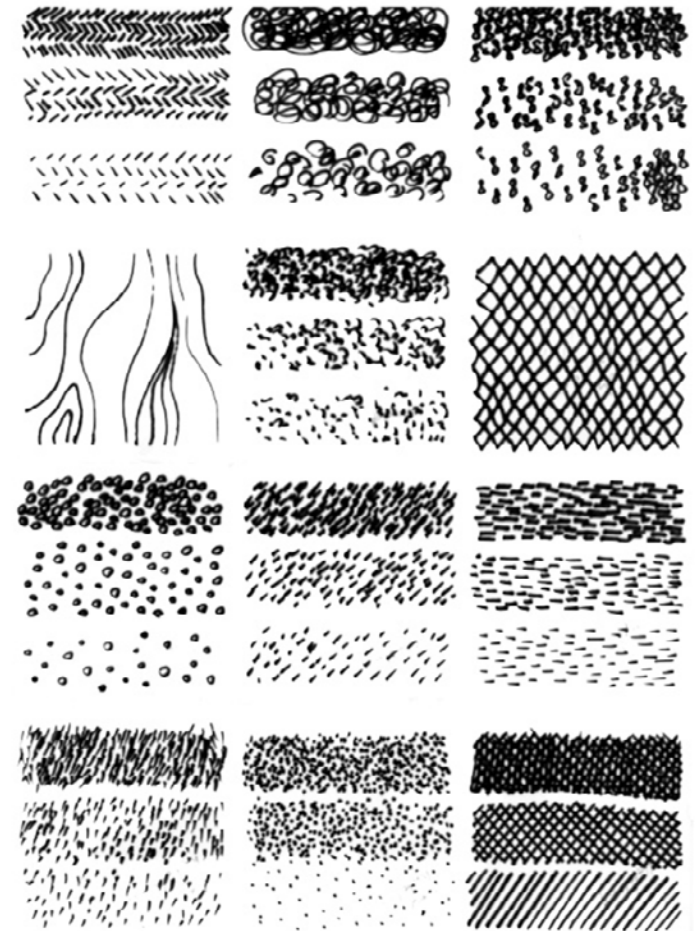
Art

# Line, Tone and Mark Making

In Art, **tone** refers to using light and dark areas of shading or colour. This gives your artwork a 3D effect and so helps it look more realistic.



**Mark making** is a term used to describe the different lines, patterns, and textures we create in a piece of art. It applies to any art material on any surface, not only paint on canvas or pencil on paper.



H F HB B 2B 3B 4B 5B 6B 7B 8B 9B

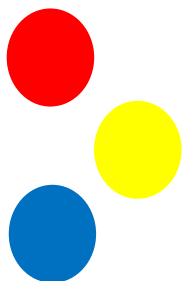


HARDER/ LIGHTER

SOFTER/ DARKER

# Colour Theory

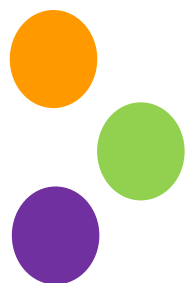
**Primary Colours (P)** cannot be made by mixing other colours together



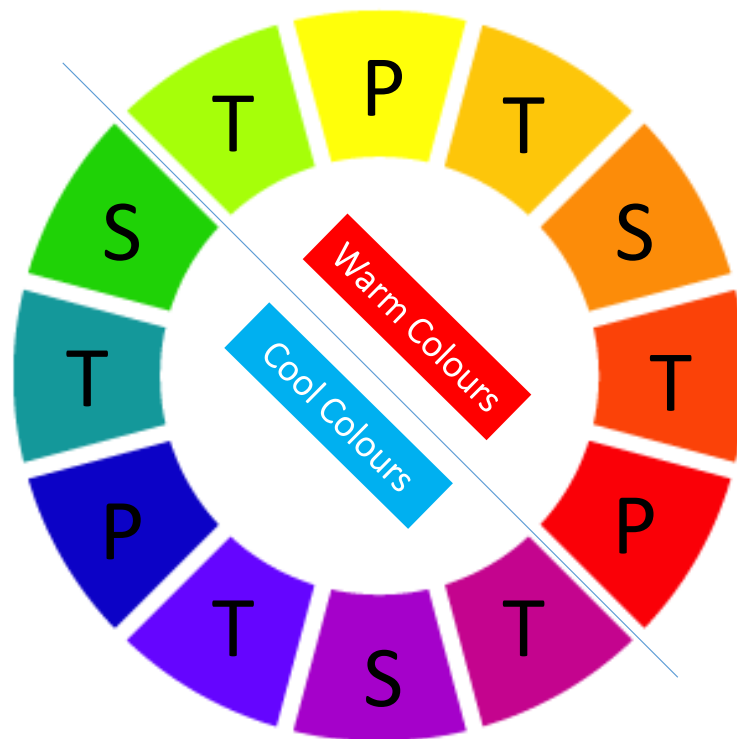
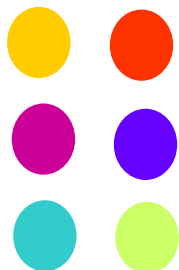
The Colour Wheel helps us to understand the relationship between colours

**Complementary Colours** appear opposite each other on the colour wheel and, when placed next to each other, create a really strong contrast e.g. **Red** and **Green**

**Secondary Colours (C)** are made by mixing equal amounts of 2 primary colours together e.g. **Red + Yellow = Orange**

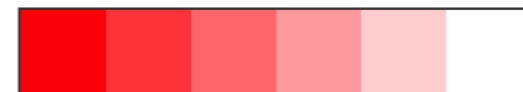


**Tertiary Colours** are made by mixing equal amounts of a primary and secondary colour



**Harmonious Colours** sit next to each other on the colour wheel. These colours work well together and create an image that is pleasing to the eye e.g. **Blue** and **Blue-Green**

**Tints** are created by adding white to a colour  
**Shades** are created by adding black



Tint

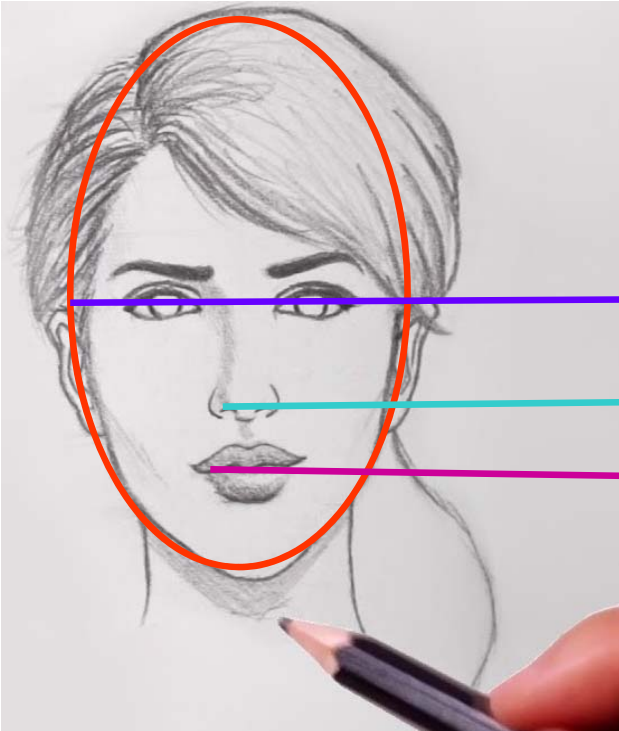


Shade

# Drawing Portraits

Portraiture is the art of representing a person. It can take the form of a drawing, painting, photograph or sculpture.

It is really important to LOOK closely at the person you are drawing. Use a photograph or mirror if it is a self portrait



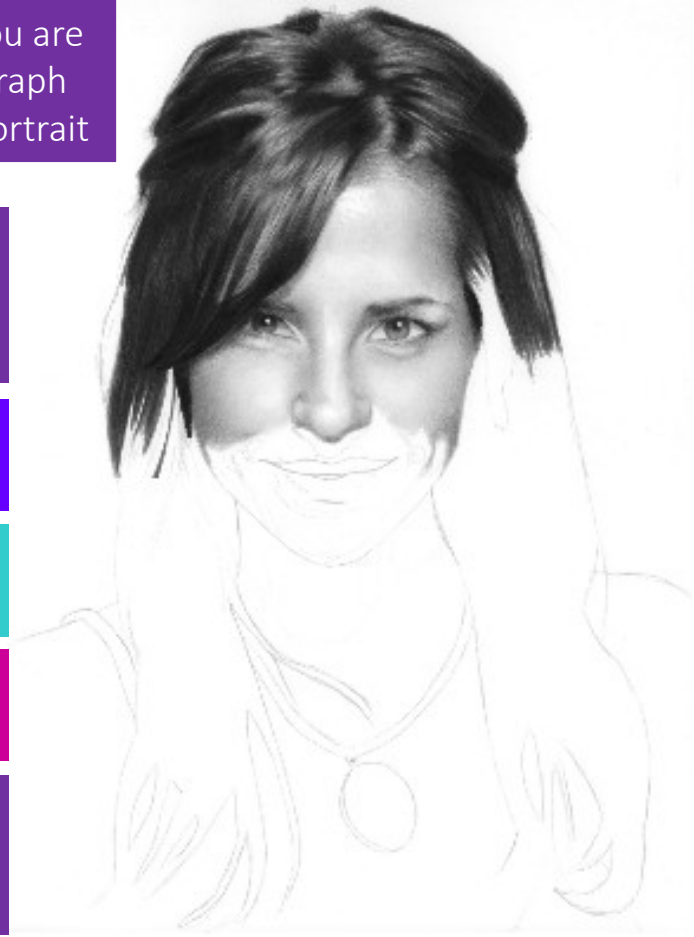
Facial Proportion is the relationship in size and placement between the features of the face:

The **Eyes** are positioned half way between the top of the head and the chin

The bottom of the **Nose** is positioned half way between the eyes and the chin

The **Mouth** is positioned half way between the bottom of the nose and the chin

When drawing a portrait, draw guidelines lightly to ensure that proportions are accurate, these can then be removed later

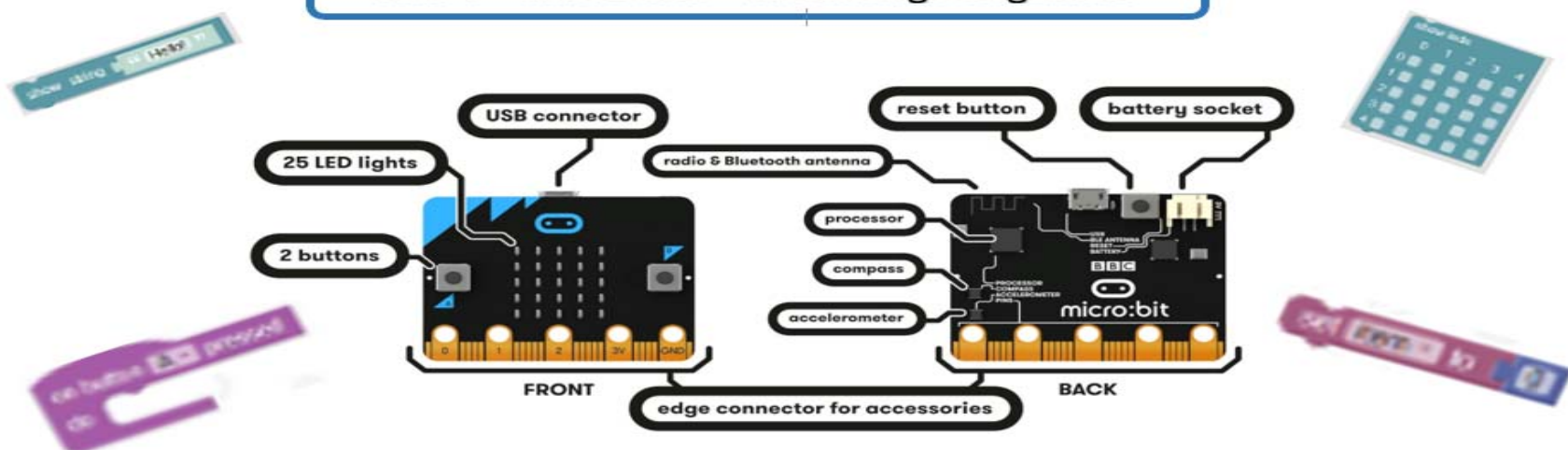


# Year 7 Knowledge Organisers

Computing



## Year 7 - Micro bits – Knowledge Organiser



### Algorithm Key Words

<b>Algorithm</b>	A set of instructions to be followed to complete a given task or solve a problem.
<b>Program</b>	A sequence of instructions used by a computer.
<b>Sequence</b>	The order which the computer will run code in, one line at a time.
<b>Selection</b>	A decision made by a computer, choosing what code should be run only when certain conditions are met.
<b>Condition</b>	Checking to see whether a statement or sum is true or false.
<b>Iteration</b>	When a section of code is repeated several times – also known as looping.
<b>Variable</b>	Something which can be changed in a computer. Made up of a name and some data to be saved.

### Key vocabulary

<b>Micro:bit</b>	A small computer designed by the BBC for use in computer science education.
<b>Processor</b>	Receives inputs from the computer and produces outputs.
<b>USB</b>	The form of power supply used by the Micro:bit – power is transmitted from the computer via a micro-USB cable.
<b>Buttons</b>	Input devices used within the Micro:bit to control or alter programs whilst running.
<b>LED</b>	Light emitting diodes (LEDs) – used on the Micro:bit as a screen in a 5x5 grid to display information.
<b>Accelerometer</b>	An input device within the Micro:bit to control or alter programs by tilting or moving the device.
<b>Microsoft Block Editor</b>	The visual programming language used to create programs that can be run on the Micro:bit.

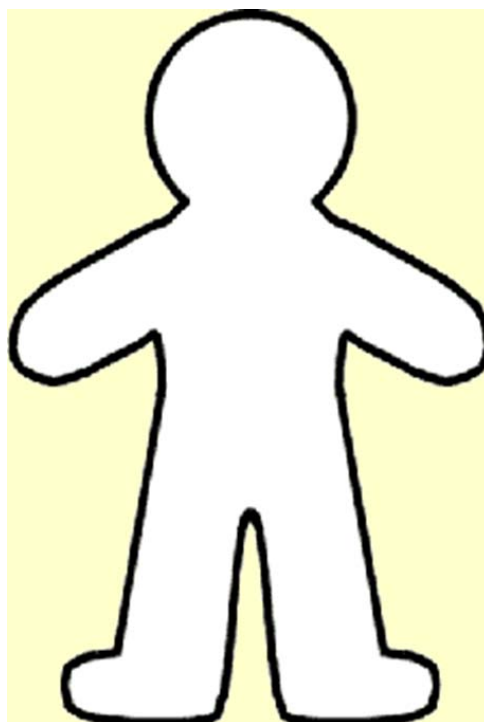
# Year 7 Knowledge Organisers

Drama

## Mr Fox- Creating a devised performance from a stimulus

Storyboard for your  
devised drama plot:


Role on the wall for your devised  
character:



Key word Definitions:

Characterisation	
Atmosphere	
Tension	
Devising	
Audience	
Role on the wall	
Proxemics	
Stimulus	
Climax	
Evaluation	
Still images	
Rolling Tableau	
Narration	
Role Play	
Improvisation – spontaneous and polished	
Hot seating	
Tunnel of Thoughts	
Thought Tracking	
Vocal Collage	
Soundscape	

# Year 7 Knowledge Organisers

English

# 'A Midsummer Night's Dream'

## Context:

'A Midsummer Night's Dream' is one of Shakespeare's early "festive comedies," written around **1595-6**. The play contains many thematic references to "dreams" and the fantastic setting of the Athenian forest. The play's title refers to an English holiday custom: on "**Midsummer Eve**," or the night of the summer solstice on **June 23**,

English men and women would spend the night outdoors around bonfires, telling **supernatural** tales of **fairies** and **witchcraft**. The play not only suggests this holiday, but also refers to "the rite of May," or "maying" - a similar English tradition that took place on the **first night of May**, when young men and women would engage in **singing, dancing** in the woods outside their towns.

It is thought that Shakespeare wrote this play to be performed first at the country house of a young nobleman, as part of his **wedding festivities**.

## Characters:

**Puck** - Also known as Robin Goodfellow, Puck is Oberon's jester, a mischievous fairy who delights in playing pranks on mortals.

**Oberon** - The king of the fairies.

**Titania** - The beautiful queen of the fairies.

**Lysander** - A young man of Athens, in love with Hermia.

**Demetrius** - A young man of Athens, initially in love with Hermia and ultimately in love with Helena.

**Hermia** - Egeus's daughter, a young woman of Athens. Hermia is in love with Lysander and is a childhood friend of Helena.

Helena - A young woman of Athens, in love with Demetrius.

**Egeus** - Hermia's father, who brings a complaint against his daughter to Theseus.

**Theseus** - The heroic duke of Athens, engaged to Hippolyta.

**Hippolyta** - The legendary queen of the Amazons, engaged to Theseus.

**Bottom** - The overconfident weaver chosen to play Pyramus in the craftsmen's play for Theseus's marriage celebration.

**Quince** - A carpenter and the nominal leader of the craftsmen's attempt to put on a play for Theseus's marriage celebration.

## Key Literary Vocabulary:

**Simile**- comparing using 'like' or 'as'.

**Metaphor**- saying one thing is another.

**Personification**- make an object human.

**Connotation**- associated meaning of word.

**Characterisation**- built up description of character in text.

**Imagery**- visually descriptive language.

**Iambic Pentameter**- a line of verse with five metrical feet, each consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable.

**Dramatic Irony** – when the audience knows more than the characters.

**Soliloquy** – a character speaks their thoughts to the audience.

**Monologue** – a long speech by a single character.

**Oxymoron** – contradictory terms together.

**Carnavalesque** – settings within a forest, outside of reality where anything can happen.

**Metadrama** – a play within a play.

**Malapropism** - the mistaken use of a word in place of a similar-sounding one, often with an amusing effect.

## Key Vocabulary &

### Shakespeare's Words!

Theatre

Relationships

Shakespearean

Mischievous

Gender

Expectations

Marriage

Mythology

Addiction

Assassination

Bedazzled

Belongings

Col-blooded

Eyeball

Fashionable

Manager

Swagger

## Themes:

Love's Difficulty, Magic, Relationships, Gender, Dreams, Love, Transformation, Foolishness, Man vs the Natural World

## Key Quotations:

1)"The course of true love never did run smooth...", 2)"Love looks not with the eyes, but with the mind,/ And therefore is winged Cupid painted blind...", 3)"Lord, what fools these mortals be...", 4)"Lovers and madmen have such seething brains...", 5)"And yet, to say the truth, reason and love keep little company together nowadays...", 6)"My soul is in the sky...", 7)"The lunatic, the lover, and the poet, are of imagination all compact...", 8)"The eye of man hath not heard, the ear of man hath not seen...", 9)"If we shadows have offended,/ Think but this, and all is mended...", 10)"Give me your hands, if we be friends,/ And Robin shall restore amends."

## Symbols:

The Moon

Animals

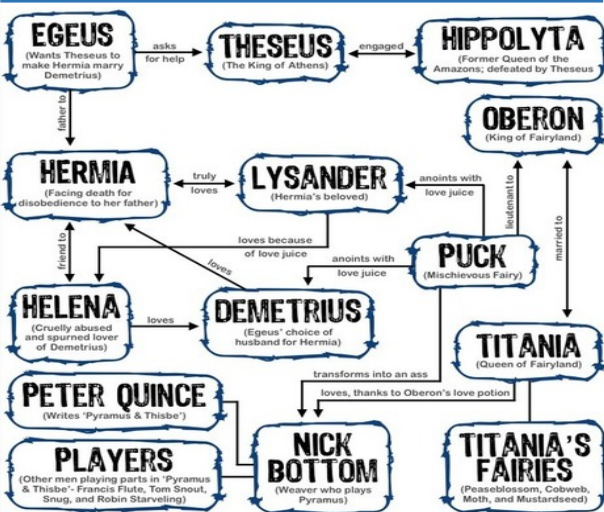
The Forest

The Fairies

Flowers

Love Potion

Light and Dark





## 'The Tempest'

### Context:

'The Tempest' was written around **1611**. The play contains many thematic references to "magic" and the fantastic setting of an island in the Bermuda's. The play's title refers to a storm.

Social status played a key role in early-modern English society. Wealth was important, but so were birth, education and employment in determining social rank.

In Shakespeare's time there was little distinction between magic and science. Many people believed in witches and the supernatural. The European societies of the late 16<sup>th</sup> and 17<sup>th</sup> centuries were remarkably fascinated with mysterious and supernatural phenomenon like fairies, ghosts, magic and most especially witches and witchcraft.

### Characters:

**Mirinda** - The daughter of Prospero, Miranda was brought to the island at an early age and has never seen any men other than her father and Caliban, though she dimly remembers being cared for by female servants as an infant. Because she has been sealed off from the world for so long, Miranda's perceptions of other people tend to be naïve and non-judgmental. She is compassionate, generous, and loyal to her father.

**Prospero** - Prospero was the duke of Milan. His brother, Antonio, in concert with Alonso, king of Naples, usurped him, forcing him to flee in a boat with his daughter. The honest lord Gonzalo aided Prospero in his escape. Prospero has spent his twelve years on the island refining the magic that gives him the power he needs to punish and forgive his enemies.

**Ariel** - Prospero's spirit helper. Rescued by Prospero from a long imprisonment at the hands of the witch Sycorax, Ariel is Prospero's servant until Prospero decides to release him.

**Caliban** - Another of Prospero's servants. Caliban, the son of the now-deceased witch Sycorax, acquainted Prospero with the island when Prospero arrived. Caliban believes that the island rightfully belongs to him and has been stolen by Prospero.

### Key Literary Vocabulary:

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Shakespearean

Mischievous

Gender

Expectations

Marriage

Mythology

Addiction

Assassination

Bedazzled

Belongings

Col-blooded

Eyeball

Fashionable

Manager

Swagger

### Themes:

Magic, Power, Quest for Knowledge, Distinguishing man from monster, The Charm of Colonialism

### Key Quotations:

- 1) "You taught me language, and my profit on't/Is I know how to curse. The red plague rid you/For learning me your language!" (I.ii.366–368)
- 2) "There be some sports are painful, and their labour/Delight in them sets off. Some kinds of baseness/Are nobly undergone, and most poor matters/Point to rich ends. This my mean task/Would be as heavy to me as odious, but/The mistress which I serve quickens what's dead/And makes my labours pleasures." (III.i.1-7)



### Symbols:

The Tempest  
Game of Chess  
Prospero's books  
The Island  
Love  
Light and Dark

# Year 7 Knowledge Organisers

Enterprise



## 8 Tips for Healthy Eating!

1. Eat more fibre
2. Eat more fruits and Vegetables
3. Eat more oily fish
4. Eat less salt
5. Eat less fat
6. Eat less sugar
7. Choose wholegrains
8. Drink 6-8 glasses of water per day

## The Eatwell Guide

The Eatwell Guide is a guide that shows you the different types of food and nutrients we need in our diets to stay healthy.

### Why is the Eatwell Guide important?

The Eatwell Guide shows you how much (proportions) of food you need for a healthy balanced diet.

### What are the consequences of a poor diet?

A poor diet can lead to diseases and can't stop us from fighting off infections.

### What are the sections on the Eatwell Guide?

1. Fruit and vegetables
2. Potatoes, bread, rice, pasta and other starchy food
3. Dairy and alternatives
4. Beans, pulses, fish, egg, meat and other proteins
5. Oils and spreads

### How many portions of fruit and vegetables should we eat, daily?

As a minimum, we should eat at least 5 portions each day.

### How many glasses of water should we drink daily?

As a minimum, we should drink 6-8 Glasses of water each day.

## MACRONUTRIENTS

Nutrient	Sources	Functions
Protein	Meat, Fish, Eggs, Beans, Peas	Growth and repair of body cells, Energy
Fat	<b>Two Types:</b> <b>Saturated:</b> Butter, Cheese, Chips, Crisps <b>Unsaturated:</b> Olive Oil, Salmon, Avocado, Mackerel	Energy, Heat and Insulation (Bad type of fat) Energy, lubrication of joints, insulation (Good type of Fat)
Carbohydrate	<b>Two Types:</b> <b>Starch:</b> Bread, pasta, Rice, Potato. <b>Sugar:</b> Fruit, Sweets, Chocolate, Honey	Slow Release of energy- lasts throughout the day Fast release of energy – does not last long
Fibre (Cannot be digested)	Wholemeal Bread, Wholemeal Pasta, Wholemeal Rice, Skin of Fruit and Vegetables	Maintain a Healthy Digestive System.

## MICRONUTRIENTS

Nutrient	Sources	Functions
Vitamins	<b>Water Soluble:</b>	
	Vitamin A: Carrots, eggs, meat	Healthy eyes, skin, hair
	Vitamin D: Oily fish, sunlight	Strong bones and teeth
	Vitamin E: Nuts, olives, green veg	Helps form red blood cells
	Vitamin K: Cabbage, Spinach	Helps blood clotting
Minerals	<b>Fat Soluble:</b>	
	Vitamin B: Eggs, Meat, Poultry	Healthy nervous system
	Vitamin C: oranges, Kiwi	Helps absorb iron, prevent flues
	<b>Calcium:</b> Milk, Butter, Dairy	Strong bones and teeth
	<b>Iron:</b> Red Meat, Dark Green Vegetables, Nuts	Helps formation of red blood cells to carry oxygen around the body.

### What is cross contamination?

Cross contamination is spreading bacteria from one place to another.

### What are the four C's to help prevent spreading bacteria?

- Clean
- Cook
- Chilling
- Cross contamination

### Why do we use different coloured chopping boards when preparing food?

To prevent the spreading of bacteria (to avoid cross contamination).

### COLOUR CODED CUTTING BOARDS

eliminate the risk of bacterial cross contamination during food preparation



**RAW MEAT**



**RAW FISH**



**COOKED MEAT**



**SALAD & FRUIT**



**VEGETABLES**



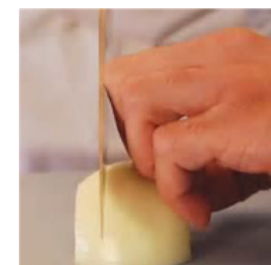
**BAKERY & DAIRY**

## Cutting Techniques

To demonstrate safety skills when using knives, there are two cutting techniques we should use:



Bridge hold



Claw grip





#### Health & Safety when using the cooker:

- Turn pan handles in *away* from edge of cooker
- Always turn hob off when not in use.
- Never leave food cooking on the hob unattended.
- Be careful not to let food boil dry.
- Never touch an electric hob when turned off, it may still be hot.
- Don't leave metal spoons in pans when cooking as they can become very hot.
- Always use oven gloves when removing food from the oven.

#### Health & Safety in the Food Room: Personal Hygiene

Wash hands in soapy water.  
Tie long hair back.  
Wear an apron and tuck tie in.  
Roll back sleeves.



- How do we keep safe in the food room?
- What hygienic practices must we follow?
- Knife safety
- Uses of the cooker (hob + oven)
- Weighing and measuring
- How to store food correctly in the fridge

A **food diary** is a way to track your eating and develop a healthy eating plan. You log all of the food and drink you consume, each day.

#### Tips for reducing food waste

- Check and make a list before food shopping.
- Plan meals for the week in advance.
- Don't impulse buy foods
- Check use by dates to ensure plenty of time.
- Freeze foods if not being used by use by date.
- Use up foods which are about to go out of date e.g. make over ripe fruit into smoothies or cakes.



#### Uses of eggs in recipes

Use	Definition and Recipe
Coat	To cover foods with egg and then breadcrumbs. The egg helps the breadcrumbs stick. Scotch eggs, fishcakes.
Glaze	Protein in egg browns when heated leaving a glossy finish. Pies, biscuits, breads
Aeration	Eggs add air to mixtures due to their liquid and protein content. Cakes, mousses
Thicken	Protein in eggs coagulates upon heating making mixtures thicken. Bread and butter pudding, custard.

#### Key Words

	<b>1. Teaspoon (tsp):</b> is used as a measure for small quantities such as spices or salt.		<b>8. Dishcloth</b> is used to wash the dirty equipment.
	<b>2. Grams (g):</b> is used as a form of measuring solids.		<b>9. Tea towel</b> is used to dry the washed equipment.
	<b>3. Tablespoon (tbsp.):</b> is used as a measure for larger quantities such as flour		<b>10. Oven gloves</b> are used to protect your hands from being burnt.
	<b>4. Millilitres (ml):</b> is used as a form of measuring liquids.		<b>11. Coagulation</b> the thickening of an egg mixture.
	<b>5. Grate</b> – using a grater to prepare cheese, vegetables or fruit		<b>12. Seasoning</b> adding different herbs and spices to improve the flavour of a dish.
	<b>6. Bridge hold</b> is used to protect your fingers when cutting. Pass the knife through the bridge made by your fingers and thumb		<b>13. Creaming</b> method the method usually used to make cakes, where the butter and sugar is creamed together.
	<b>7. Enzymic browning:</b> the process where fruit and vegetables turn brown due to them being exposed to oxygen (oxidisation).		<b>14. Rubbing in</b> method whereby you rub using your fingers together usually butter and flour to create a breadcrumb like mixture, usually the base for scones.

**Why is it important to weigh and measure ingredients accurately?**

**What can happen if we don't?**

**The 4 C's** = Four simple rules that will help you to stay safe and hygienic in the kitchen:

- **Cleaning.**
- **Cooking.**
- **Cross contamination.**
- **Chilling.**

#### NUTRIENTS

##### Carbohydrates:

Sources?

Types – what are they made up of?

How are they used in the body?

##### Fat + sugar:

Saturated and unsaturated fat

Sources?

What are they required for in the body?

Amounts required?

Effect on the body if too much consumed?

##### Protein:

Sources?

What are they required for in the body?

##### Vitamins:

Sources?

What are they required for in the body?

##### Minerals:

What are minerals?

What are they required for in the body?

#### How the body uses nutrients:

**Protein** – growth and repair – found in meats/fish/eggs/pulses

**Carbohydrates** = energy – found in bread/pasta/rice/potatoes

**Calcium** – strong bones and teeth – milk/cheese/yoghurt

Vitamins and minerals – boost immune system – found in fruit/vegetables

**Fats** – protects vital organs, keeps you warm – found in oil, butter, dairy products, sweets and chocolates.

Staple foods of a diet are **pasta, rice and potatoes**.  
The main dairy products are: **milk, cheese and butter**.  
**Eggs** are a good source of **protein**.  
**Nuts and seeds** are also sources of **protein**.



**What 6 nutritional facts can be found on food labels?**

**What are the recommended calories for male and female?**

**What is a balanced diet?**

**What is a composite dish?**

**What is dietary fibre?**  
Why is it important?

#### Key words:

**Peeling** = remove the outer covering or skin from (a fruit, vegetable, or prawn)

**Slicing** = using a knife to cut into slices

**Weighing** = using measuring scales to accurately measure an amount of food

**Measuring** = using a jug for example to measure an amount of liquid or food

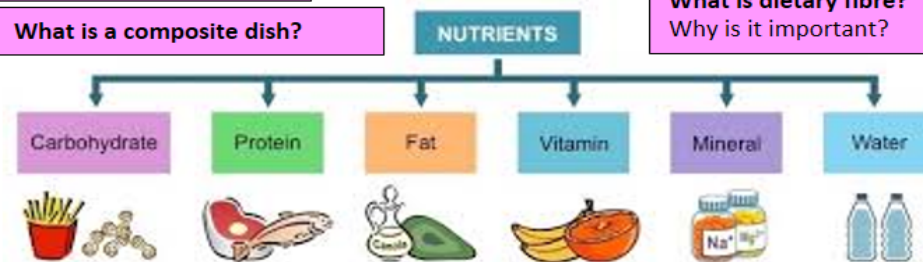
**Boiling** = **cooking in water** at or near boiling point.

**Simmering** = cooking in water just below boiling point, while bubbling gently.

**Coring** = remove the tough central part and seeds from (a fruit).

**Bridge** = a safe method to use a knife

**Claw** = a safe method to use a knife



## Electronics

### Soldering Safety:

Soldering is not dangerous provided you follow these simple rules:



1. Soldering irons get VERY hot and can cause severe burns. Make sure you handle it with care and always put the iron back in the stand when you are not using it.
2. If you burn your hand run it under the cold tap for ten minutes & see a first-aider.
3. Make sure you work in a well ventilated area and use any fume extraction that may be available.
4. Wear goggles. These will protect your eyes from any small pieces of wire that may fly off as you snip them with the wire cutters.
5. Most soldering irons run directly from the mains. Take great care that you do not burn the flex as you could electrocute yourself or someone who uses the iron after you.
6. Never flick solder off the tip of the iron, to clean it rub it on the moistened sponge
7. Be careful of loose cables – do not have them in your walk way or where they can be pulled.



Soldering Iron



Wire strippers



Soldering Iron



Side Cutters



Long nose pliers



Solder

## CAD & CAM

### CAD: Computer Aided Design

#### Advantages and disadvantages of using CAD

##### Advantages

- Can be more accurate than hand-drawn designs - it reduces human error
- You can save and edit ideas, which makes it easier and cheaper to modify your design as you go along.
- You can modify existing ideas, which saves time.

##### Disadvantages

- The software itself can be expensive so initial costs are high. There are free software packages though.
- Staff need to be trained how to use the software, which also adds to costs.
- Requires a PC.

### CAM: Computer Aided Manufacture

#### Advantages and disadvantages of using CAM

##### Advantages

- In large-scale production, the results are consistent (always the same).
- Enables very high accuracy levels in large-scale production.
- Usually speeds up production of low-volume products.

##### Disadvantages

- The software itself is expensive so initial costs are high.
- Can be slower than traditional methods for one-off or low-volume production.
- Staff need to be trained how to use the software and machinery, which adds to costs.

### Laser cutter



### Keywords

**Millimetres** - The unit we use in technology to measure  
**Improvements** - Things you can do to make something better

**Modifications** - Another word for changes

**Laser Cutter** - What cuts out your work

**Dimensions** - What are measurements called

**Techsoft 2D** - The software you use to design your product

**Red** - The colour that cuts your material

**Green** - The colour that engraves your material

## Resistant Materials



### Keywords

**Adhesives** - Types of glue

**Jig** - An aid to fast, accurate and repeatable manufacturing operation.

**Keyed** - Where a surface is roughened to improve the strength of a joint when two surfaces are stuck together.

**Laminating** - The process of bonding two or more layers of material together to form a thicker and stronger section.

**Maintenance** - Cleaning, adjusting, lubricating or replacing parts of a product to allow it to continue to function correctly.

### Health and Safety in the workshop

1. Move slowly and calmly around the workshop
2. Carry tools by your side and place them in the centre of the bench
3. Wear an apron
4. Tie back long hair
5. Wear goggles when using machinery
6. Know where the emergency stop button is
7. No running, contact, throwing, eating or drinking
8. Report any injuries or breakages to the teacher

### Tools for working with wood

Try square	Bench vice	Marking gauge	Cordless drill
Steel rule	G clamp	Bradawl	Screwdriver
Tenon saw	Chisel	File	Pillar drill
Bench hook	Mallet	Plane	Belt sander

### Timber is a natural material with imperfections, knots and grain. ALWAYS SAND WITH THE GRAIN.

<b>Hardwood</b>		From broad leaved trees that lose their leaves in the winter. Slower growing than softwood and therefore more expensive.	<b>Beech</b> - close grained and does not splinter easily. Used for kitchen utensils, mallets and wooden toys.
<b>Softwood</b>		From trees that have needle shaped leaves bear cones and are evergreen. Faster growing and therefore less expensive.	<b>Pine</b> - Knotty but cost effective. Used for construction-door frames, etc.
<b>Manufactured board</b>		Available in large board sizes. More consistent and easier to work than natural timber with fewer knots and imperfections.	<b>Plywood</b> - made of several layers of wood with the grain at 90 degrees. Stronger than natural timber



# Year 7 Knowledge Organisers

French

## ADJECTIVES REVISION

Most adjectives in French come after the noun.

Un chat noir- a cat **black** ( a black cat)

Une souris **blanche**- a mouse **white**(a white mouse)

BAGS adjectives(beauty, age, goodness, size) come before the nouns:

Une **petite** souris-A **small** cat

Un **grand** chien- A **big** dog

Adjectives change their ending depending on if they are describing something masculine, feminine or plural.

Usually, they gain an **-e** for feminine nouns and an **-S** for plural. However, this is not true for some endings. See below:

Masculine	Masculine plural	Feminine	Feminine plural
<b>grand</b>	grands	grande	<b>grandes</b>
<b>ennuyé</b>	ennuyés	ennuyée	<b>ennuyées</b>
<b>gentil</b>	gentils	gentille	<b>gentilles</b>
<b>drôle</b>	drôles	drôle	<b>drôles</b>
<b>beau</b>	<b>beaux</b>	<b>belle</b>	<b>belles</b>

To compare things in French we use:

Plus...que - More than

Moins...que - Less than

Aussi...que—As...as

Il est plus intelligent que moi - He is more intelligent than me. Elle est aussi rapide que moi - She is as fast as me. An exception is: Meilleur que - better than  
Pire que - worse than  
To use a superlative (the most/the least) use le plus/le moins: Le chien le plus intelligent - The most intelligent dog  
La ville la plus grande - The biggest town  
Les gens les moins gentils - the least friendly people

## REGULAR -ER VERBS REVISION

Most verbs in French are **-er** verbs. This means that the infinitives of the verb(the version of the verb you see in the dictionary) ends in an **-er**, eg: jouer, manger, habiter. Almost all **-er** verbs follow the same pattern in the present tense.

Step 1- Remove the **-er**

Step 2- Add the correct pronoun(who is doing the verb) and the correct ending

**Habiter- To live**

J'habite- I live

Tu habites-You live

Il/ elle habite-He/she lives

Nous habitons-We live

Vous habitez- You live

Ils/ells habitent-They live

## REGULAR -IR AND -RE VERBS

Another type of regular verb in French are **-ir** and **-re** verbs. Just like **-er** verbs, you need to remove the **-ir** or **-re** and replace them with the correct ending. Let's use the verbs 'finir' (to finish) and 'répondre' as examples:

**finir - to finish**

**répondre - to reply**

je finis I finish

je réponds I reply

tu finis You finish

tu réponds You reply

il/elle finit He/she finishes il/elle répond He/she replies

Please complete:

## THE VERB "FAIRE" (TO DO/ TO MAKE)

We use the verb 'faire' to talk about what we make or do. It is an irregular verb – it doesn't follow any pattern, you just have to learn it by heart! Note: A lot of activities we use 'go' with in English, take 'faire' in French. I go swimming – Je fais de la natation When faire comes before an activity, it's usually followed by du/ de la/des depending on if you're talking about a MASCULINE, FEMININE or PLURAL activity: Aller is usually followed by au/à la/aux depending on if you're talking about a MASCULINE, FEMININE or PLURAL place: Je fais du sport (m) – I do sport Je fais de la natation (f) – I do swimming Je fais des achats (pl) – I do purchases/ I go shopping.

**Je fais** – I do

**Nous faisons** - We do

**Tu fais** – You do

**Vous faites**- You (pl) do

**Il/Elle fait** – He/she does

**Ils/Elles font** – They do

## THE VERB "ALLER" (TO GO)

We use the verb 'aller' to talk about where we go. It is an irregular verb – it doesn't follow any pattern, you just have to learn it by heart!

Je vais – I go/I'm going

Tu vas – You go/You're going

Il/Elle va – He/she goes/is going

Nous allons – We go/We're going

Vous allez – You go/You're going

Ils/Elles vont – They go/They're going

Aller is usually followed by au/à la/aux depending on if you're talking about a MASCULINE, FEMININE or PLURAL place: Je vais au cinéma (m) – I go to the cinema Je vais à la piscine (f) – I go to the swimming pool Je vais aux magasins (pl) – I go to the shops

## KEY EXPRESSIONS FOR MODULE 3

### Opinions

j'aime – I like  
j'adore – I love  
je n'aime pas – I don't like  
je déteste – I hate  
il / elle aime – he / she likes  
il / elle adore – he / she loves  
il / elle déteste – he / she hates  
je suis d'accord – I agree  
je ne suis pas d'accord – I don't agree  
tu es d'accord? – do you agree?  
je pense que – I think that  
je trouve que – I find that  
à mon avis – in my opinion

### Adjectives/Expressing Opinions

It bores me – **ça m'ennuie**  
It interests me – **ça m'intéresse**  
It annoys me – **ça m'énervé**  
It makes me happy – **ça me plaît**  
I'm going to have fun - **Je vais m'amuser**  
We're going to have fun - **On va s'amuser**  
confortable – **confortable**  
modern – **moderne**  
exciting – **passionant**

### Connectives

et – and  
aussi – also  
mais – but  
parce que – because  
cependant – however  
donc – therefore  
par contre – on the other hand  
de plus - furthermore

### Key verbs

apprendre – to learn  
boire – to drink  
chanter – to sing  
choisir – to choose  
danser – to dance  
demander – to ask  
discuter – to discuss  
écouter – to listen  
écrire – to write  
étudier – to study  
finir – to finish  
jouer – to play  
lire – to read  
répondre – to reply

### Prepositions

**dans/devant** – in/in front of  
**derrière** - behind **entre** – between  
**sous** – under  
**sur** – on/on top of  
**À côté de** – next to  
**À droite de** – to the right of **À gauche de** – to the left of  
**En face de** – opposite

### Key words

Il y a – there is/ there are  
Il n'y a pas de..- **There isn't/aren't**  
Ne...rien - **nothing**  
Chez – **at someone's home**  
Chez moi – **at my house** Ici – **here**  
Plus...que – **more than**  
Moins... que – **less than**

# Year 7 Knowledge Organisers

Geography

### Key definitions

**Accessibility** - How easy a place is to get to.

**Central Business District (CBD)** - The middle of a town or city where most shops and offices are found.

**Dispersed settlement** - Several farms or buildings spread out over a wide area.

**Emigrant** - A person who leaves a country to live and work in another country.

**Human Geography** - The study of where and how people live.

**Immigrant** - A person who arrives in a country with the intention of living there.

**Inner city** - An area of factories and old houses next to the city centre.

**Land use** - Describes how the land in towns or the countryside is used. IT includes housing, industry and farming.

**Microclimate** - The climate of a small area.

### Key definitions

**Nucleated settlement** - Buildings that are grouped closely together.

**Pollution** - Noise, dirt and other harmful substances produced by people and machines which spoil an area.

**Public transport** - Transport provided to the public and available to everyone e.g. busses, trains, etc.

**Refugees** - People who have been forced to move from an area where they live, and have been made homeless.

**Settlement** - A place or location where people live.

**Site** - The 'actual' place where a settlement first grew up.

**Suburbs** - A zone of housing around the edge of a city.

**Urban** - An area of land which is mainly covered in buildings.

**Urbanisation** - The growing proportion of people living in urban areas.

## Year 7 - Knowledge Organiser 'Settlements for the future'

### The Burgess Model

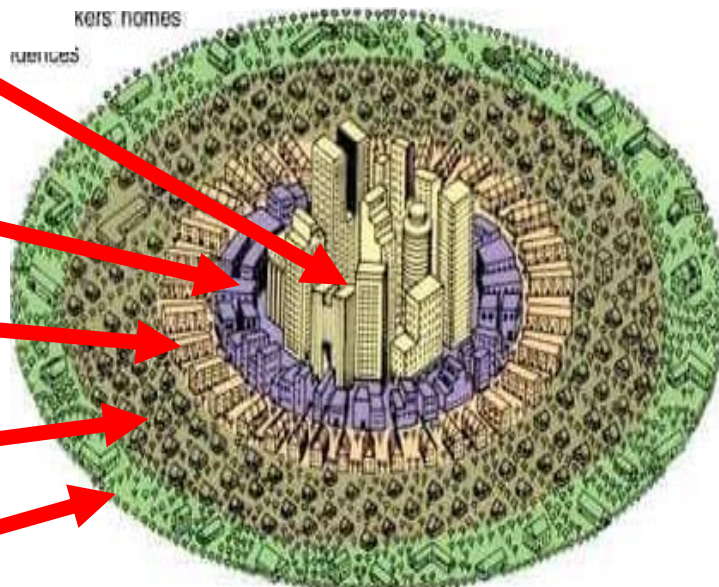
1. Central business district (CBD).

2. The inner city.

3. The inner suburbs.

4. The outer suburbs.

5. The green belt.



### Different types of land use

**CBD** - Very few houses or open space, mainly shops, offices, banks and restaurants. This was the first place in the town to be built.

**Inner city** - This area used to contain factories and small terraced houses. Now you will find the factories are mostly all gone and the houses modernised.

**Inner suburbs** - This is mainly semi-detached housing built in the 1920's and 1930's. There is some open space.

**Outer suburbs** - Large houses are found here and some council estates. The majority of the housing here has been constructed since the start of the 1970's. There are still vast amounts of open space.

**Green belt** - This is mainly land use for agriculture with a sporadic amount of buildings.

## Shanty towns/Favelas

### What's the difference?

**Shanty town** - An area containing a collection of shacks, shanties or makeshift dwellings.

**Favela** - A shanty town which is found specifically in Brazil.

*Neither of these terms should be confused with a 'slum' which is a building or construction which is in a state of disrepair or ruin as a result of age or neglect.*

### Characteristics of the shanty towns/favelas

- Shacks made from materials sources locally.
- Very little evidence of health or maternal care.
- High concentrations of gang warfare due to the lack of money or jobs.
- Education is not common with many having to start earning as early as 6.
- Sparse transport systems as most of the open space is used as landfill to accommodate waste.

### What factors effect a countries development?

A settlements ability to grow depends a lot on its location and how developed the country is. For example, a town in a rich country has the ability to expand and grow. In contrast a country in a poor country can only grow within its means. A countries development is categorised due to a variety of factors, these can be social, economic, environmental and political.

**Social** - Refers to the standard of living and the satisfaction of the population.

**Economic** - Often categorised as the income/revenue of a country.

**Environmental** - A countries landscape can affect its ability to grow. E.g. It's difficult for a city to expand which is surrounded by steep hillsides.

**Political** - Political unrest in a country can halt its ability to move forward. If there is a lack of support from people in power, then a country will struggle to develop.

**LIDC** - Low income developed country, **EDC** - Emerging developing country,

**AC** - Advanced country.

## Case Study - Rocinha Favela, Brazil

**Location** - Southern Hemisphere, South America, Brazil, Rio de Janeiro

**Population** - Approx. 69,356 (2010).

**Average income** - <£1 a day.

**Infant mortality** (The number of children who die before the age of 5) - 50 in every 1000.

**Common cause of death** - Malnutrition, diarrhoea, cholera and dysentery.

**Reason for diseases** - While the favelas offer more amenities than the squatter camps, the problems come from inability to obtain clean water and afford food.

**Schemes in place in order to improve the living conditions** - Site & service, self-help, rural investment and pacification.



## Year 7 - Knowledge Organiser 'Settlements for the future'

### Case Study - Birmingham, UK

**Location** - Northern Hemisphere, Europe, United Kingdom, England

**Population** - Approx. 1.086 million (2011)

**Average income** - Approx. £30,363 a year (2014)

**Why does Birmingham fit The Burgess Model so well?**

1. CBD - The Bullring
2. Inner city - Sparkhill
3. Inner suburbs - West Bromwich/Solihull
4. Outer suburbs - Walsall
5. Green belt - Lichfield/Cannock





# Year 7 Knowledge Organisers

History

## Big Question 3: To what extent was there a mid-Tudor crisis?

### Knowledge Organiser

#### Key Dates

1.	1533	Henry marries Anne Boleyn, Princess Elizabeth born, Princess Mary declared illegitimate
2.	1534	Act of Supremacy
3.	1536	Execution of Anne Boleyn, Marriage of Henry VIII and Jane Seymour, Start of dissolution of the monasteries, Pilgrimage of Grace
4.	1537	Birth of Prince Edward
5.	1538	Henry excommunicated by the Pope
6.	1540	Marriage of Henry to Anne of Cleves (quickly dissolved), Marriage of Henry to Catherine Howard
7.	1542	Execution of Catherine Howard
8.	1543	Henry marries Catherine Parr, Act for the Advancement of True Religion
9.	1544	Mary and Elizabeth reinstated into the succession, Currency debasement begins
10.	1547	Death of Henry VIII, Edward VI becomes king
11.	1549	Fall of Somerset, Act of Uniformity and the first Book of Common Prayer, Western Rebellion, Kett's Rebellion
12.	1550	Northumberland becomes Lord President of the Council
13.	1552	Act of Uniformity and second Book of Common Prayer
14.	1553	Death of Edward VI, Lady Jane Grey succeeds him for 9 days, Mary I becomes queen, Northumberland executed, 42 Articles of Religion
15.	1554	Wyatt's Rebellion, Marriage of Mary to Philip of Spain
16.	1555	Restoration of heresy law, burnings resume
17.	1556	Execution of Thomas Cranmer
18.	1558	Death of Mary I, Elizabeth comes to the throne

#### Key Individuals

1.	Henry VIII	Second son of Henry VII, famously married 6 times and established the Church of England
2.	Edward VI	Son of Henry VIII who became king after him aged 9 and died at 15. Had advisers to help him rule. Continued protestant reforms.
3.	Mary I	Eldest child of Henry VIII (her mother was Catherine of Aragon). Strong Catholic who reversed Protestant reforms. Unhappily married Philip of Spain.
4.	Lady Jane Grey	Cousin of Edward VI, daughter-in-law of Northumberland, who arranged for her to succeed Edward. She was 'Queen' for 9 days before Mary swept to power.
5.	Duke of Somerset	(Edward Seymour) Edward VI's uncle and main adviser until he fell out of favour and was executed

6.	Duke of Northumberland	(John Dudley) Duke that became Edward's main adviser after Somerset was removed
7.	Philip of Spain	King of Spain, a major power at the time. Catholic who married Mary but did not treat her well.
8.	Thomas Cromwell	Chief adviser to Henry VIII during the break from Rome and dissolution of the monasteries
9.	Thomas Cranmer	Protestant Archbishop of Canterbury under Henry VIII and Edward VI. Burnt during Mary's reign.
10.	Martin Luther	German monk who kick-started the Reformation by protesting against the Catholic Church

#### Key Concepts

1.	Reformation	The religious movement by some clergy and academics across Europe to change (re-form) the Catholic Church to match their interpretation of the Bible.
2.	Rebellion	An event where a group tries to overthrow the monarch and/or government by force. These can be motivated a mixture of social, economic and religious reasons.
3.	Excommunicate	An order from the Pope officially removing you from the Catholic Church and condemning you to Hell
4.	Monastery	The religious building where monks live and work.
5.	Dissolution of the monasteries	The policy of closing down Catholic monasteries in England after the Church of England was set up. Their land and wealth was sold to increase the finances of the crown.
6.	Divorce	The legal process for ending a marriage. Not allowed in Catholic Church.
7.	Heresy	Beliefs or practices that are against the official teaching of the Church. Someone who does this is called a heretic.
8.	Protestant	Someone who follows the teachings of the Protestant Church.
9.	Catholic	Someone who follows the teachings of the Catholic Church and the Pope.
10.	Pope	The official leader of the Catholic Church based in the Vatican City in Rome.
11.	Currency	The money that a country uses. During Tudor times it was debased (made using cheaper metals) to try and combat lack of money. This caused problems.
12.	Enclosure	The process of landowners fencing off their land for their own use (rather than common use). Created problems for the poor.

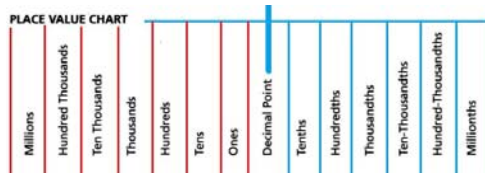
# Year 7 Knowledge Organisers

Maths

# Litov's Mean Value Theorem



## Knowledge Organiser

Topic/Skill	Definition/Tips	Example
1. Place Value	The <b>value</b> of where a <b>digit</b> is within a number.	In 726, the value of the 2 is 20, as it is in the 'tens' column.
2. Place Value Columns	<p>The names of the columns that <b>determine the value of each digit</b>.</p> <p>The 'ones' column is also known as the 'units' column.</p>	<p>PLACE VALUE CHART</p> 
3. Rounding	<p>To make a number simpler but keep its value close to what it was.</p> <p>If the <b>digit to the right</b> of the rounding digit is <b>less than 5, round down</b>.</p> <p>If the <b>digit to the right</b> of the rounding digit is <b>5 or more, round up</b>.</p>	<p>74 rounded to the nearest ten is 70, because 74 is closer to 70 than 80.</p> <p>152,879 rounded to the nearest thousand is 153,000.</p>
4. Decimal Place	The <b>position</b> of a digit to the <b>right of a decimal point</b> .	<p>In the number 0.372, the 7 is in the second decimal place.</p> <p>0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down.</p> <p>Careful with money - don't write £27.4, instead write £27.40</p>

5. Significant Figure	<p>The significant figures of a number are the digits which <b>carry meaning</b> (ie. are significant) to the size of the number.</p> <p>The <b>first significant figure</b> of a number <b>cannot be zero</b>.</p> <p>In a number with a decimal, trailing zeros are not significant.</p>	<p>In the number 0.00821, the first significant figure is the 8.</p> <p>In the number 2.740, the 0 is not a significant figure.</p> <p>0.00821 rounded to 2 significant figures is 0.0082.</p> <p>19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns.</p>
6. Estimate	To find something <b>close to the correct answer</b> .	An estimate for the height of a man is 1.8 metres.
7. Approximation	<p>When using approximations to estimate the solution to a calculation, <b>round each number in the calculation to 1 significant figure</b>.</p> <p><math>\approx</math> means 'approximately equal to'</p>	$\frac{348 + 692}{0.526} \approx \frac{300 + 700}{0.5} = 2000$ <p>'Note that dividing by 0.5 is the same as multiplying by 2'</p>
8. Mean	<b>Add</b> up the values and <b>divide</b> by how many values there are.	<p>The mean of 3, 4, 7, 6, 0, 4, 6 is</p> $\frac{3 + 4 + 7 + 6 + 0 + 4 + 6}{7} = 5$

9. Median Value	<p>The <b>middle</b> value.</p> <p>Put the data in order and find the middle one.</p> <p>If there are <b>two middle values</b>, find the number half way between them by <b>adding them together and dividing by 2</b>.</p>	<p>Find the median of: 4, 5, 2, 3, 6, 7, 6</p> <p>Ordered: 2, 3, 4, <b>5</b>, 6, 6, 7</p> <p>Median = 5</p>
10. Mode /Modal Value	<p><b>Most</b> frequent/common.</p> <p>Can have more than one mode (called bi-modal or multi-modal) or no mode (if all values appear once)</p>	<p>Find the mode: 4, 5, 2, 3, 6, 4, 7, 8, 4</p> <p>Mode = 4</p>
11. Range	<p><b>Highest value subtract the Smallest value</b></p> <p>Range is a 'measure of spread'. The smaller the range the more <u>consistent</u> the data.</p>	<p>Find the range: 3, 31, 26, 102, 37, 97.</p> <p>Range = <math>102 - 3 = 99</math></p>



**MathsWatch References and Worksheet Links:**

- 1 – Place Value
- 17 – Adding Integers and Decimals
- 18 – Subtracting Integers and Decimals
- 31 – Rounding to the Nearest 10, 100, 1000
- 32 – Rounding to Decimal Places
- 62 – Averages and the Range
- 66 – Multiplying Decimals
- 67 – Dividing Decimals
- 81 – Squares, Cubes and Roots
- 90 – Rounding to Significant Figures
- 91 – Estimating Answers


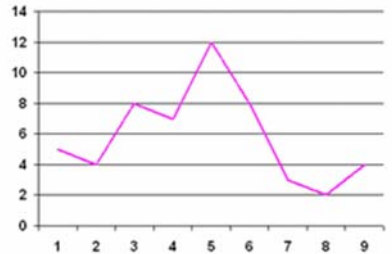
# The Average Student



## Knowledge Organiser

Topic/Skill	Definition/Tips	Example
1. Types of Data	<p><b>Qualitative</b> Data – <b>non-numerical</b> data</p> <p><b>Quantitative</b> Data – <b>numerical</b> data</p> <p><b>Continuous</b> Data – data that can take <b>any numerical value</b> within a given range.</p> <p><b>Discrete</b> Data – data that can take <b>only specific values</b> within a given range.</p>	<p>Qualitative Data – eye colour, gender etc.</p> <p>Continuous Data – weight, voltage etc.</p> <p>Discrete Data – number of children, shoe size etc.</p>
2. Mean	<b>Add</b> up the values and <b>divide</b> by how many values there are.	<p>The mean of 3, 4, 7, 6, 0, 4, 6 is</p> $\frac{3 + 4 + 7 + 6 + 0 + 4 + 6}{7} = 5$
3. Median Value	<p>The <b>middle</b> value.</p> <p>Put the data in order and find the middle one.</p> <p>If there are <b>two middle values</b>, find the number half way between them by <b>adding them together and dividing by 2</b>.</p>	<p>Find the median of: 4, 5, 2, 3, 6, 7, 6</p> <p>Ordered: 2, 3, 4, <b>5</b>, 6, 6, 7</p> <p>Median = 5</p>
4. Mode /Modal Value	<p><b>Most</b> frequent/common.</p> <p>Can have more than one mode (called bi-modal or multi-modal) or no mode (if all values appear once)</p>	<p>Find the mode: 4, 5, 2, 3, 6, 4, 7, 8, 4</p> <p>Mode = 4</p>
5. Range	<p><b>Highest value subtract the Smallest value</b></p> <p>Range is a 'measure of spread'. The smaller the range the more <u>consistent</u> the data.</p>	<p>Find the range: 3, 31, 26, 102, 37, 97.</p> <p>Range = 102-3 = 99</p>

6. Frequency Table	A record of <b>how often each value</b> in a set of data <b>occurs</b> .	<table><tr><th>Number of marks</th><th>Tally marks</th><th>Frequency</th></tr><tr><td>1</td><td>       </td><td>7</td></tr><tr><td>2</td><td>    </td><td>5</td></tr><tr><td>3</td><td>      </td><td>6</td></tr><tr><td>4</td><td>    </td><td>5</td></tr><tr><td>5</td><td>   </td><td>3</td></tr><tr><td><b>Total</b></td><td></td><td><b>26</b></td></tr></table>	Number of marks	Tally marks	Frequency	1		7	2		5	3		6	4		5	5		3	<b>Total</b>		<b>26</b>
Number of marks	Tally marks	Frequency																					
1		7																					
2		5																					
3		6																					
4		5																					
5		3																					
<b>Total</b>		<b>26</b>																					
7. Bar Chart	<p>Represents data as vertical blocks.</p> <p><math>x</math> – <b>axis</b> shows the <b>type</b> of data</p> <p><math>y</math> – <b>axis</b> shows the <b>frequency</b> for each type of data</p> <p>Each bar should be the <b>same width</b></p> <p>There should be <b>gaps</b> between each bar</p> <p>Remember to <b>label</b> each axis.</p>	<table><thead><tr><th>Number of pets owned</th><th>Frequency</th></tr></thead><tbody><tr><td>0</td><td>3</td></tr><tr><td>1</td><td>8</td></tr><tr><td>2</td><td>12</td></tr><tr><td>3</td><td>1</td></tr><tr><td>4</td><td>2</td></tr></tbody></table>	Number of pets owned	Frequency	0	3	1	8	2	12	3	1	4	2									
Number of pets owned	Frequency																						
0	3																						
1	8																						
2	12																						
3	1																						
4	2																						
8. Pie Chart	<p>Used for showing <b>how data breaks down into</b> its constituent <b>parts</b>.</p> <p>When drawing a pie chart, <b>divide <math>360^\circ</math> by the total frequency</b>. This will tell you how many degrees to use for the frequency of each category.</p> <p>Remember to <b>label</b> the category that each sector in the pie chart represents.</p>	<table><thead><tr><th>Sport</th><th>Degrees</th></tr></thead><tbody><tr><td>Football</td><td>144°</td></tr><tr><td>Netball</td><td>80°</td></tr><tr><td>Hockey</td><td>60°</td></tr><tr><td>Tennis</td><td>40°</td></tr><tr><td>Squash</td><td>36°</td></tr></tbody></table> <p>If there are 40 people in a survey, then each person will be worth <math>360 \div 40 = 9^\circ</math> of the pie chart.</p>	Sport	Degrees	Football	144°	Netball	80°	Hockey	60°	Tennis	40°	Squash	36°									
Sport	Degrees																						
Football	144°																						
Netball	80°																						
Hockey	60°																						
Tennis	40°																						
Squash	36°																						

9. Pictogram	<p>Uses <b>pictures</b> or symbols to <b>show the value</b> of the data.</p> <p>A pictogram must have a <b>key</b>.</p>	
10. Line Graph	<p>A graph that uses <b>points connected by straight lines</b> to show how data changes in values.</p> <p>This can be used for <b>time series data</b>, which is a series of data points spaced over uniform time intervals in <b>time order</b>.</p>	

### MathsWatch References and Worksheet Links:

15 – Tally Charts and Bar Charts

62 – Averages and the Range

63 – Data (Discrete and Continuous)

64 – Vertical Line Charts

127a – Venn Diagrams (Introduction)

128a – Pie Charts

128b – Stem and Leaf Diagrams

129 – Scatter Diagrams

# Year 7 Knowledge Organisers

Music

Storyboard for your Film  
Music Composition:

1	2
3	4
5	6

## Listen to 'Danse Macabre' by Saint-Saens, draw either;

- How the music makes you feel  
*or*
- What you think the story could be.

## Key word Definitions:

Dynamics	
Fortissimo	
Forte	
Piano	
Pianissimo	
Tempo	
Presto	
Moderato	
Grave	

Name on instrument from each of the  
four families

Strings	
Woodwind	
Brass	
Percussion	



# Year 7 Knowledge Organisers

Science

# Genes: Variation and Reproduction



## Word Bank

Variation	Differences in and between species.
Species	Produce fertile offspring.
Continuous	Values are all numbers
Discontinuous	Values can be words
Adaptation	Characterisitic that helps an organism to survive.
Gamete	Sex cell
Embryo	A ball of cells when a fertilized egg divides
Fetus	Developing baby
Gestation	Process when baby develops during pregnancy.
Menstruation	Loss of lining of the uterus during the menstrual cycle.

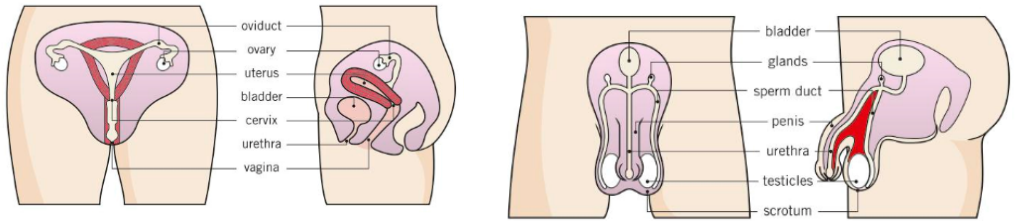
What is variation?

How does variation help a species to survive?

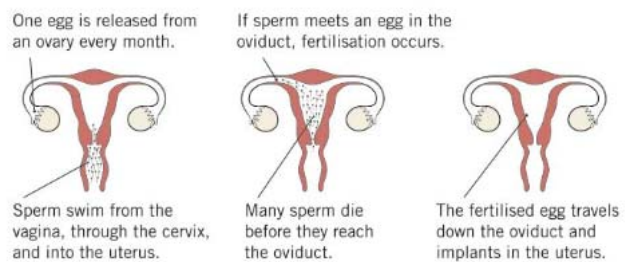


What happens during puberty?

How are the male and female reproductive systems different?



How does fertilization happen?



How does a baby develop during gestation?

What happens during the menstrual cycle?

## Reactions: Metals and **non-metals**

What are the properties of typical metals and non-metals?

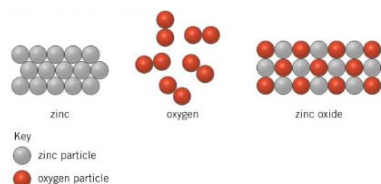
What is the reactivity series?



### Word Bank

Element	Cannot be broken down into other substances.
Oxidation	A chemical reaction with oxygen.
Physical property	A property that you can see or measure.
Chemical property	How a substance behaves in a chemical reaction.
Reactant	Start substance in a chemical reaction.
Product	Made in a chemical reaction.
Salt	Hydrogen atoms of an acid are replaced by metal.
Displacement	Reaction where a more reactive metal pushes a less reactive metal out of compound.

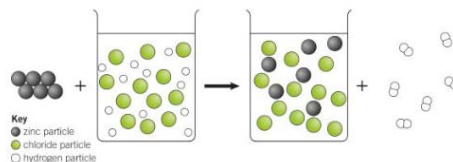
What is oxidation and how can we show it using particle diagrams?



How do different metals react with oxygen?



How do different metals react with acids?



**reactive**  
potassium  
sodium  
lithium  
calcium  
magnesium  
aluminium  
zinc  
iron  
lead  
copper  
silver  
gold  
**unreactive**

How can the reactivity series be used to predict the products of displacement reactions?

How do metals react with water?

## Energy: Costs and Transfer

How much energy do you need for different activities?

What is power and how is it calculated?

$$\text{power (W)} = \frac{\text{energy (J)}}{\text{time (s)}}$$



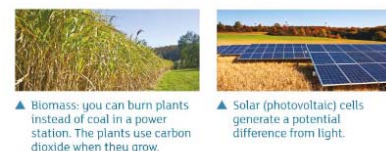
### Word Bank

How is electricity produced from a fossil fuel?

Which alternative energy resources can be used to generate electricity?

What is energy dissipation and how can it be reduced?

$$\text{efficiency (\%)} = \frac{\text{useful energy output} \times 100}{\text{energy input}}$$



How is energy transferred between stores?

Energy to do with...	Type of energy store
food, fuels, batteries	chemical energy store
hot objects	thermal energy store
moving objects	kinetic energy store
position in a gravitational field	gravitational potential energy store
changing shape, stretching, or squashing	elastic energy store