



# St Joseph's College Knowledge Organisers Year 9

**2021\_2022 - All subjects**

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

House: \_\_\_\_\_



**My timetable:**



# St Joseph's College Knowledge Organisers

## **Why do we have knowledge organisers?**

Your knowledge organisers help you to be successful in many ways. Firstly, they make clear the key elements needed in a topic to have an excellent understanding of it. If you know these elements, your teacher will help you to understand them.

## **What are my teachers' expectations of me?**

In year 7 and 8 your teachers will give you homework based on your Knowledge Organiser. This means you will be spending time learning information from your Knowledge Organiser at home. Teachers will test you once a week to make sure that you are completing the homework and you are able to recall the information on the Knowledge Organiser. Your Knowledge Organiser exercise book is where you will complete your homework. It should show evidence of you practicing recalling the information on the Knowledge Organiser. Each time you complete your homework in the book, you should put the subject as the title and clearly write the date completed. Once complete put a ruler to show the end of the homework. Teachers and form tutors will be regularly checking that you are completing this homework. For some subjects you may be required to complete online questions such as Spark Maths to demonstrate your recall practicing. Knowledge Organisers must be brought to school everyday.

## **How will my teachers use them?**

Each core subject will set homework once a week that will help you to learn your knowledge organiser. They will also test you once a week on certain parts to see how well you have remembered it. Research tells us that this recall practising is a really good way of helping you make sure that the knowledge stays in your memory. Over time you will build on this knowledge to make sure that you know everything you need to for your subject. Sometimes you may have high stakes quizzes, where teachers will set a certain score that you have to reach to be successful.

## **How will they help me revise?**

When it comes to GCSEs, you have lots of information to remember. Your Knowledge Organisers will gradually build up this knowledge over 5 years to help support you in year 11 so that when you revise, you are just recalling knowledge that you have already stored. Also, you will have practised lots of revision techniques whilst using your knowledge organisers over the past 5 years, which will help prepare you for the final exams.



# Using a Knowledge Organiser Guide - for Parents and Carers

## What is a knowledge organiser?

A knowledge organiser contains all the important information from a particular topic, summarised in just a few pages. It includes key words, important facts, diagrams, methods and skills relating to the topic.

## Why is it useful?

A knowledge organiser helps students to organise the content they need to learn. This makes it easier for them to remember the information and access the facts from their memory when they need to answer an exam question.

## How can it be used?

The more memories are used, the stronger the memory becomes and the easier it is to access. For students, this means regular practice at retrieving the facts they have learnt and using them in a variety of ways. They could play games with the information, explain the facts to someone, apply the information to a new situation or organise the knowledge organiser into a different format.

## How can I help?

The knowledge organiser contains all the facts needed to test someone on the content from a topic. This is great because it means you can help someone revise content even if you haven't studied it yourself!

**- You could ask your child some questions on the content, for example the definition of a few key words, or challenge them to draw a diagram from memory. Testing their knowledge with one or two questions a day can make a big difference to how much information they remember. Perhaps it could become part of the after dinner or breakfast routine.**

- You could prompt your child to turn some of the information on the knowledge organiser into a different format; a word list could become flashcards, facts could be transformed into a mind map to show links between ideas, information could become a song, story or comic strip, a diagram could become a poster, a collage or a model.

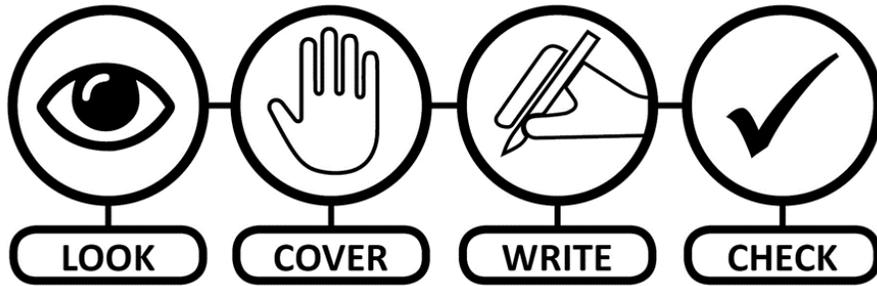
**- You could ask your child to teach you about something on the knowledge organiser. Having to explain information to someone else, and answer their questions about it, is a great way to reinforce their knowledge and identify areas they need to go back and revise again.**

- You could suggest turning the information into a multiple-choice quiz, either on paper or using a website. This task requires them to process the information to write questions and come up with correct and incorrect answers. You could then use it to test their knowledge or to host a quiz with family or friends, either at home or online.



# Top tips for learning and revising the information in your knowledge organiser

Check the website for more subject specific revision information



## Flashcards

Weight

$$F_g = m \times g$$

The gravitational force ( $F_g$ ) which acts on an object on/near the surface of a planet/moon.

★ Example

## Mnemonics

# FOIL

the **first** terms  
the **outer** terms  
the **inner** terms  
the **last** terms

**Example 1:**

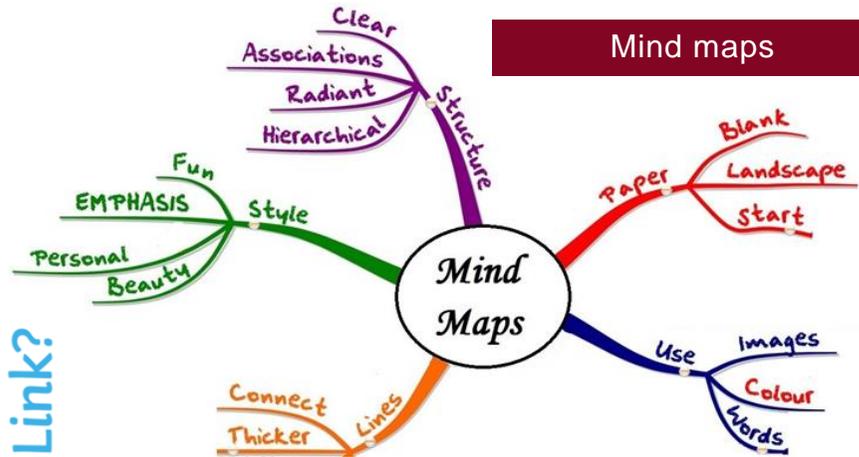
$$(x + 4)(x + 7) = x \cdot x + x \cdot 7 + 4 \cdot x + 4 \cdot 7$$

Order of Operations Show Your Work!

$$= x^2 + 7x + 4x + 28$$

$$= x^2 + 11x + 28$$

## Mind maps



## Quotes

# Macbeth

**VALIANT**  
"his brandish'd steel [...] smoked with bloody execution"

**RESPECTED**  
"O valiant cousin! worthy gentleman"

**CURIOUS**  
"you imperfect is, tell me more"

**NOT NATURALLY RUTHLESS**  
"... too full o' the milk of human kindness"

**LOVING**  
"My dearest partner of greatness"

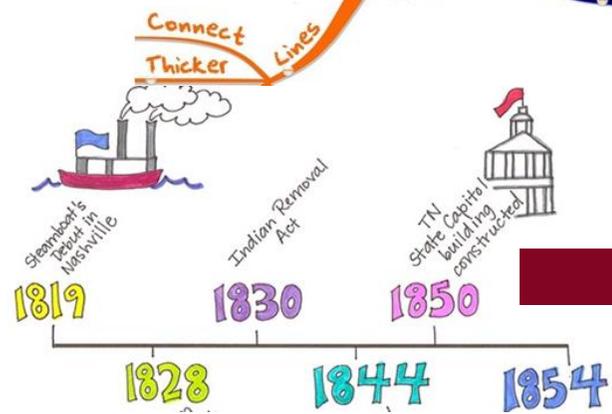
**ADMIRED**  
"(Sergeant:) brave Macbeth-- well he deserves that name"

**HONOURED**  
"(Duncan:) With his former title greet Macbeth"

**PENSIVE**  
"This supernatural soliciting cannot be ill, cannot be good"

**OVERWHELMED BY IMAGINATION**  
"function is smother'd in surmise"

What Is the Link?



## Time lines

## Online flashcards



This term we will be exploring Annotations for Art and Artists.



### Keywords:

#### Painting Vocabulary

**Intensity:** The brightness or dullness of a colour.

**Monochromatic:** a single colour and it's tints and shades

**Background:** An area within a composition that appears further away from the viewer. Objects appear smaller with less detail.

**Middle ground:** Part of a composition that appear between the foreground and back ground

**Foreground:** In a scene or artwork , the part that seems closest to you. Objects appear larger and more detailed.

**Spectrum:** All the colours in the colour wheel

**Opaque:** Colours that you can't see through

**Transparent:** Colours that you can see through

**Palette :**A series of colours that you paint with

**Watercolour:** a water soluble paint with transparent properties

**Acrylic:** Acrylic paint is water-based fast-drying paint

**Oil:** A thick paint made with ground pigment and a drying oil such as linseed oil

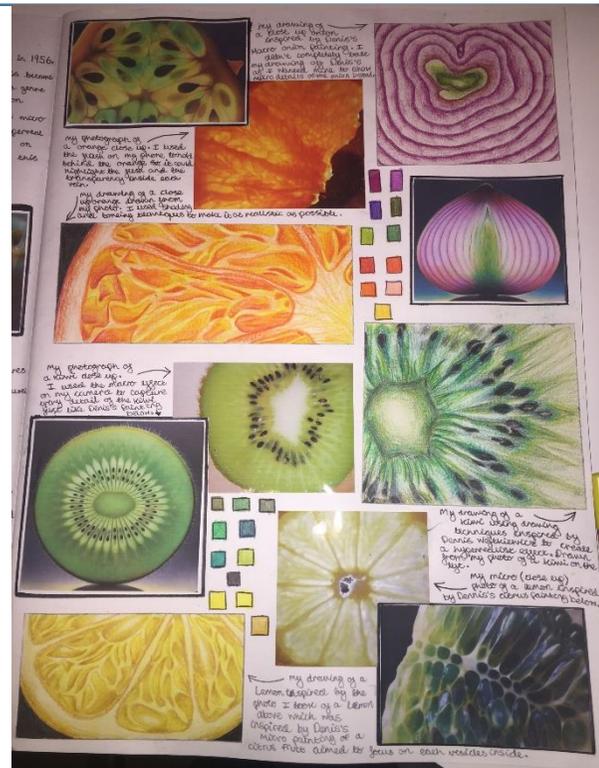
**Gouache:** a type of water-soluble paint that, unlike watercolour, is opaque

AO1 Developing idea-Thought shower, artist research

AO2 Using Resources- testing out ideas/media/techniques

AO3 Recording ideas-photos and drawings

AO4 Making a personal response- final ideas



Think carefully about the layout of each page you will need to show a variety of processes and media. Also it is really important to annotate your artwork using key terminology. What would you write on the example sketchbook pages illustrated here.



**Annotating art and artists always include:**  
 Biography Name, relevant dates, movement the artist is associated with. Whether the artist is contemporary or historic.  
 Convey? What has the artist tried to show in their work?  
 How have the audience responded? Why?  
 Materials and Techniques used.  
 What has the artist used to make the artwork.  
 Describe using Formal Elements.  
 Opinion What is your opinion of their work.  
 Give reasons for your response.  
 Making links How are you inspired by their work?  
 Analysis Comparing your work to theirs or other Artists.  
 Pastiche Working directly from the artists work in their style to a explore technique.

## Soup cans By Andy Warhol



Claes Oldenburg, Apple Core, 1990

## Ai Weiwei

### Ai Weiwei Artwork

Responding to china's 2008 melamine milk scandal, when thousands of children who consumed tainted milk fell ill -some even fatally — chinese artist Ai Weiwei makes a creative statement about the tragedy through his installation 'baby formula'. The catastrophe personally affected Weiwei, whose son was 4 years old at the time. She translated the misfortune into an immersive artwork, Weiwei constructs an abstracted map comprised of 1,800 cans of baby formula which are arranged as an 860 square-foot map of china. the carefully placed, colour coordinated cans lay silently on the exhibition floor in Singapore, forcing the audience to understand their context.





# St Joseph's College Careers Department

## Careers



To raise aspirations and help each student achieve their maximum potential.

### Keywords:

- Dream
- Career
- Ambition
- Skills
- BTEC
- A level
- Experiences
- Curriculum Vitae
- University
- Apprenticeship
- Success
- Application
- Cover letter
- Experience
- Hard skills
- Internship
- Portfolio
- Soft skills

Do you want to talk about your options and ideas?

Email [rcashmore@sjc.ac](mailto:rcashmore@sjc.ac)

Where can my best subjects take me?

What skills do I need for the workplace?



### Some of our partners:



Guy's and St Thomas' NHS Foundation Trust



HM Revenue & Customs



### Looking for more information?



For career ideas and information Morrisby careers quiz. Scan this enter MC33GPPV in the sign up

Use this QR code to find out more about your options at University.



### Questions:

- What kind of career might be right for me?
- What does the future look like?
- What is the world of work like?
- What do I need to be work ready?
- What do I need to get into University?

### Top skills in demand - Croydon:

Communication; Organisation; Planning; Working in Detail; Excel

### What jobs will there be in the future?

In the future new careers will be created as the relationship between humans and technology continues to evolve.

Your generation will be working as AI Business Managers, Data Detectives, Pharmers, Drone Managers etc.

### PREDICTIONS FOR JOBS IN

# 2030



#### DIGITAL ARCHITECT

Designs a selection of virtual buildings for advertisers and retailers to market their products



#### WASTE DATA HANDLER

Disposes of data waste in a responsible way



#### ELDERLY WELL-BEING CONSULTANT

Specializes in holistic and personalized care for the elderly



#### CLIMATE CONTROLLER

Manages and modifies weather patterns



#### BODY PART ENGINEER

Creates living body parts for transplants



#### AVATAR MANAGER

Designs and manages holograms of virtual people



#### NANO-MEDIC

Creates very small implants for health monitoring and self-medication



#### MEMORY AUGMENTATION SURGEON

Helps preserve and improve memory in an aging population



#### VERTICAL FARMER

Farms crops upwards rather than across flat fields to conserve space



#### CHILD DESIGNER

Designs offspring that fit parental requirements



# St Joseph's College Business Department

Autumn term 1 and 2: Enterprise: Starting an enterprise

Helping students to learn the principles of setting up a business and to have the opportunity to plan, pitch and start up their own businesses.



### Keywords:

- Business**- Any organisation that produces or supplies goods or services
- Service**- This is a business that does not produce goods but involves some action being taken on behalf of the individual or a business.
- Goods**-General term used to cover both goods and services
- Products**-Any product that can be seen or felt. Examples include mobile phones, houses and games consoles.
- Profit**- This is the amount of money that a firm has left from selling its products, after it has paid all of its expenses such as its raw materials.

### Teams:

There are 8 Enterprise Capabilities shown here during the Enterprise competition students will be expected to demonstrate Each skill. The competition will focus on each skill and will encourage you to develop or strengthen.

You will need to evidence to Peter Jones how you have achieved this.

### Questions:

- How are business ideas generated?
- How are teams developed?
- Who are your competitors? What are their Strengths, Opportunities, Weaknesses and Threats?
- Are there any local events happening that may affect you?

### Why is research important?:

- Test our assumptions
- To collect potential customers input
- To better understand the issues by getting stats and information to back up your claims
- To understand how to best engage with the public
- To test project ideas

### What is the difference between primary and secondary research?:

**Primary Research** This can be conducted either in person or online. Get feedback on your project ideas from the public Get data from your target audience to better inform your decisions

**Secondary Research:** This can be conducted by spending time online and identifying what already exists. You will still need to plan out what information you need.

### How to form your team:

Tuckman's theory focuses on the way in which a team tackle a task from the initial format of the team through to the completion of the project.

**Forming**  
Team acquaints and establishes ground rules. Formalities are preserved and members are treated as strangers.



**Storming**  
Members start to communicate their feelings but still view themselves as individuals rather than part of the team. They resist control by group leaders and show hostility.



**Norming**  
People feel part of the team and realize that they can achieve work if they accept other viewpoints.



**Performing**  
The team works in an open and trusting atmosphere where flexibility is the key and hierarchy is of little importance.



**Adjourning**  
The team conducts an assessment of the year and implements a plan for transitioning roles and recognizing members' contributions.





Helping students to plan for their futures by and Option choices by understanding the choices they may make in their future career.

### Keywords:

You often hear the words "career" and "job" used interchangeably, but they are two different things.

A **job** is something you do to in the short term to earn cash. It's filling a work role within a business in exchange for money.

A **career**, though, is a long-term pursuit of a lifelong ambition. You may or may not need any particular education or special training to do a job but a career requires some sort of specialised training that develops an individual's ability to do the work that career entails.

In some cases, this training can come in the form of experience.

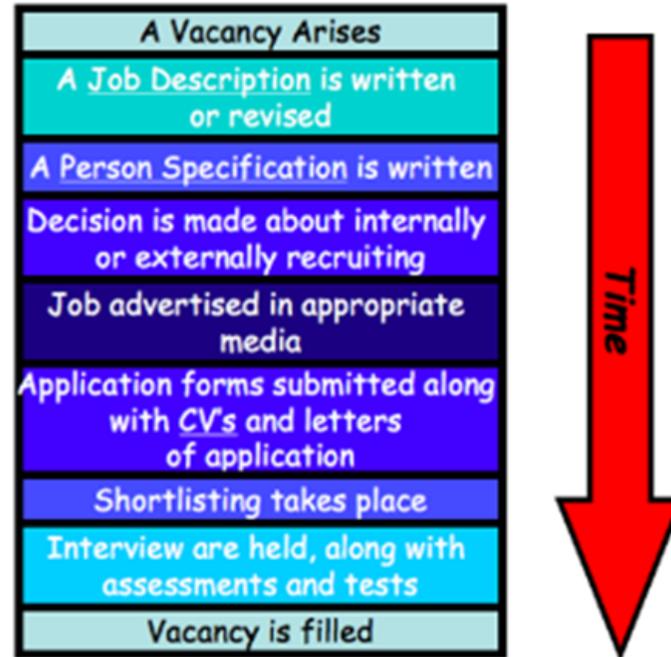
**Recruitment:** is the process of deciding who will fulfil a specific job role. There are a number of documents that form part of the recruitment process. These include the person specification, job description, application form and CV.

A **job description** is another document produced by a business that wants to fill a vacancy. Its main purpose is to list all of the duties that are required in the role.

A **person specification** is a document created by a business that wants to fill a vacancy. This document provides information about the type of person the business wants to hire.

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Diagram of The Recruitment Process.

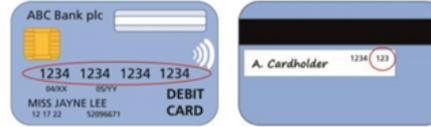


### Questions:

1. Write a list of jobs or careers you would be interested in doing in the future? Explain why you think these are good for you?
2. Create on a computer a CV. How would you use this to get a job?
3. Draw up a Budget for your next 3 months put in all money you get, any regular things you buy and anything you plan to buy in the future.
4. What skill is your strongest and which needs improving? What will you do to practice this?



Helping students to plan for their futures by and Option choices by .understanding the choices they may make in their future career.



### What will I learn?

<p><b>Unit 1: Your personal finances</b> will give you a good basic understanding of money and finance.</p>	<p><b>Unit 2: Money Management for your Generation</b> focuses on modern banking and will equip you with the knowledge to cope confidently with basic financial encounters.</p>	<p><b>Unit 2: Your Future, Your Career</b> takes a look at career development such as applying for a job, interview techniques and CV writing.</p>
<p>The 8 topics are:</p> <ul style="list-style-type: none"> <li>• Money</li> <li>• Sources of money</li> <li>• Storing money safely</li> <li>• Spending and budgeting</li> <li>• Saving and selling</li> <li>• Borrowing</li> <li>• What is insurance</li> <li>• How do we keep our money safe?</li> </ul>	<p>The 6 topics are:</p> <ul style="list-style-type: none"> <li>• Modern banking</li> <li>• Pay and pay calculations</li> <li>• Types of payment card</li> <li>• The cost of borrowing</li> <li>• Using money abroad</li> <li>• Financial difficulties and their consequences</li> <li>• Financial advice and protection</li> </ul>	<p>The 4 topics are:</p> <ul style="list-style-type: none"> <li>• Employability: applying for a job</li> <li>• Roles and career paths</li> <li>• The financial services industry</li> <li>• Routes into financial careers and other industries</li> </ul>

### What are the features of money?

To be accepted, money needs to be:

- ▶ recognised by everyone;
- ▶ accepted as payment (eg in shops);
- ▶ easy to carry;
- ▶ available in different amounts or 'denominations' (eg 1p, 2p, 5p);
- ▶ hardwearing, ie it lasts a long time (coins can last for 40 years); and
- ▶ always worth the same amount (£1 is always worth £1).

### What do We use as money?

Coins and banknotes are designed to have all the features of money. Banknotes allow us to carry higher amounts without filling our pockets with coins.



During these projects you will learn about Woods, Card, Joints and Semi-Precious Metals

**Subject:** Technology  
**Year:** 9

**Key Assessments**  
Knowledge Organiser tests and class work mark.

**Core Texts/ Websites**  
Design and Technology KS3 class book.  
BBC Bitesize.  
Technologystudent.com

Use this Knowledge Organiser to prepare for lessons and build your understanding of D&T.

Keywords	Definition
<ul style="list-style-type: none"> <li>Annotate</li> </ul>	<ul style="list-style-type: none"> <li>To label, provide information on the design</li> </ul>
<ul style="list-style-type: none"> <li>Inspiration</li> <li>Consumer</li> </ul>	<ul style="list-style-type: none"> <li>A source that provides ideas</li> <li>The person who buys or uses the product</li> </ul>
<ul style="list-style-type: none"> <li>Aesthetics</li> <li>Environment</li> <li>Sustainability</li> </ul>	<ul style="list-style-type: none"> <li>The appearance of the product</li> <li>The place we live, work, socialise in</li> <li>The ability to sustain natural resources without impacting future generations</li> </ul>
<ul style="list-style-type: none"> <li>Function</li> <li>Size</li> <li>6Rs</li> <li>Sketch</li> <li>Evaluate</li> <li>Initial Designs</li> </ul>	<ul style="list-style-type: none"> <li>What a product does, the purpose</li> <li>Measured in mms or cms.</li> <li>Used to assess environmental impact</li> <li>A quick drawing to show</li> <li>Assessing whether an idea is successful</li> <li>First rough designs in response to the task</li> </ul>
<ul style="list-style-type: none"> <li>Final Design</li> </ul>	<ul style="list-style-type: none"> <li>Final drawing of the product being made</li> </ul>
<ul style="list-style-type: none"> <li>Mood Board</li> <li>Existing Product</li> <li>Design Specification</li> <li>Design Brief</li> <li>Materials</li> </ul>	<ul style="list-style-type: none"> <li>Collection of images to gain inspiration</li> <li>Products that are already available</li> <li>A list of specific design requirements</li> </ul>
<ul style="list-style-type: none"> <li>Primary Research</li> </ul>	<ul style="list-style-type: none"> <li>An introduction to the overall task</li> <li>The physical matter the product is made from</li> <li>Collecting new data first hand (Questionnaire)</li> </ul>
<ul style="list-style-type: none"> <li>Secondary Research</li> <li>CAD</li> <li>CAM</li> </ul>	<ul style="list-style-type: none"> <li>Collecting data that already exists (Websites)</li> <li>Computer Aided Design</li> <li>Computer Aided Manufacture</li> </ul>

### Useful Sentence Starters for D&T:

**Analyse:** to examine a task/product in detail (use who, what, where, when and why).

- This is an example of good design because \_\_\_\_\_
- It is made from \_\_\_\_\_
- The target user for the product is \_\_\_\_\_.
- It is made attractive by \_\_\_\_\_.

**Develop:** to improve or modify a design or product

- I have developed by ideas by \_\_\_\_\_
- I have combined the best parts of made design ideas that \_\_\_\_\_
- I have removed this part of the design/ changed the material because \_\_\_\_\_
- To improve the design, I need to \_\_\_\_\_.
- I decided to \_\_\_\_\_ because \_\_\_\_\_.

**Justify:** To give reasons for your decisions

- I think that is a successful design because \_\_\_\_\_.
- \_\_\_\_\_ is a suitable material as it is \_\_\_\_\_.
- The product can be used for an alternative purpose as it \_\_\_\_\_, therefore \_\_\_\_\_.
- I believe the choice of material affects the type of consumer because \_\_\_\_\_.

**Evaluation:** to assess a product. Identify a products strengthens and weaknesses and suggestion modification

- The strengths of the product are \_\_\_\_\_
- The weaknesses of the product are \_\_\_\_\_
- To improve my product/design, I would \_\_\_\_\_
- To make my product more environmentally friendly I would \_\_\_\_\_

**Useful Connectives:**  
Therefore, however, on the other hand, in my opinion, but, finally, firstly, secondly, thirdly, as well as this, moreover, furthermore, similarly, in contrast to.



During this project you will learn about Technical Drawing and Wood as one of the Resistant Materials. You will design [using technical drawing techniques] and make a Desk tidy using wood and incorporate at least one type of wood joint.



Safety in workshop is very important. Signs will be placed around the workshop and on machines.



Red signs tell you something you must not do



Yellow signs warn you of a potential hazard.

Health & Safety



Green signs give you information.



Blue signs tell you something you must do.

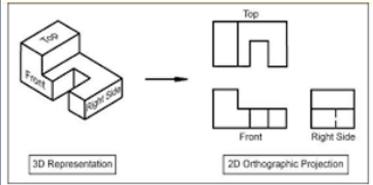
10 Health & Safety Rules in the workshop:

1. Do not run at anytime
2. Tie hair up and tuck loose items away
3. 1 person using a machine at a time
4. Stand behind the yellow line when somebody is on a machine
5. Do not talk to somebody whilst they are on the machine
6. Wear goggles when instructed
7. Wear an apron (ensuring it is tied up)
8. Stack chairs/stools up at the side
9. Put bags/coats under the workbenches
10. Ask if you do not know how to use a tool or machine.

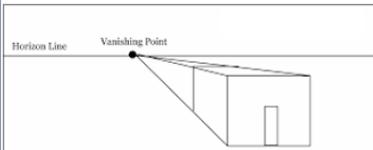
### Technical Drawing Styles



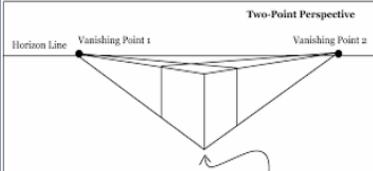
Freehand sketching drawings made without the use of drawing instruments or straightedges.



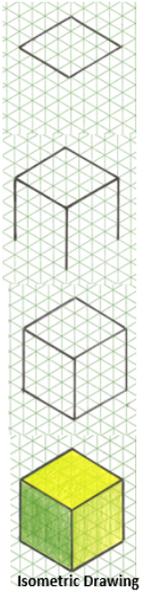
Orthographic Drawings show a 3D product in a 2D way.



1 Point Perspective has 1 Vanishing Point



2 Point Perspective has 2 Vanishing Points



Isometric Drawing

### Material Characteristics

<b>Hardness</b>	resist cutting and indentations to its surface
<b>Toughness</b>	Ability to withstand shock
<b>Strength</b>	The ability to withstand being pulled or stretched, crushed or compressed or twisted.
<b>Elasticity</b>	Ability to be stretched and return to it's original size
<b>Flexibility</b>	The ability to bend without breaking and then spring back to its original shape.
<b>Impact Resistant</b>	Ability to resist sudden shocks
<b>Strength to Weight Ratio</b>	Measure of strength to weight, for instance Aluminium is a light weight material but is strong. Therefore having a high strength-to-weight ratio
<b>Ductility</b>	Ability to be stretched like the length of wire without breaking
<b>Malleability</b>	The ability to be hammered, rolled or pressed into shape without breaking
<b>Durability</b>	Able to last a long time

**Using a Ruler:**  
Rulers are essential for achieving accurate measurements.

10 Millimeters

100cm = 1000mm  
10cm = 100mm  
1cm = 10mm  
0.1cm = 1mm

● 1cm  
● 0.5cm  
● 10 Lines per centimeter

mms are used preferred as they are more accurate





**Subject: Technology**

**Year: 9**

**Topic: What's in the Box Project**

**Lesson Sequence**

- Research
- Analyse
- Design & CAD
- Practical
- Test & Evaluate

**Key Assessments**

Knowledge Organiser tests and class work mark.

**Core Texts / Websites**

Design and Technology KS3 class book.

BBC Bitesize.

Technologystudent.com

**The things you need to learn in this knowledge organiser are**

- The difference between a softwood and a hardwood
- Names of softwoods (3)
- Names of hardwoods (5)
- Names of the basic tools and machinery in the workshop

**Key Words:**

Metal Rule, Marking Out, Coping Saw, Skill saw, Vice, Designing, Files, Cutting, Smoothing, Finish. Wood vice, Glass paper

**Key Skills:**

Drawing, designing, shaping, cutting, smoothing, assembling, testing, following instructions.

**Tools & Equipment**



Natural Timbers (Wood)		
Softwoods	Properties/Characteristics	Uses
<b>Scots Pine (Redwood)</b> 	Straight grain, knotty, easy to work with, finishes well, durable, widely available and relatively cheap.	Largely used for construction work, needs protecting if use outside. Stair bannisters, cabinets, furniture.
<b>Red Cedar</b> 	Lightweight, knot-free, straight grain, contains natural oils that protect from weather, insects or dry rot. It has a fine silky surface.	Outdoor joinery - cladding of buildings and wall panelling 
<b>Spruce</b> 	Fairly strong, resistant to splitting, easy to work with	General indoor furniture
Hardwoods	Properties/Characteristics	Uses
<b>Beech</b> 	Very tough, hard, straight and close grained, as a result withstands wear and shock. Polishes well. However can warp.	Chairs, floorings, tools and kitchenware (wooden spoons/spatulas) turnery, toys, steam bent furniture
<b>Ash</b> 	Wide-grained, tough, very flexible and finishes well	Tool handles, sports equipment - cricket stumps, hockey sticks
<b>Oak</b> 	Heavy, hard, tough, open-grain, finishes well, can be used outdoors. Due to it containing tannic acid, it will corrode steel screws/bolts. Expensive	Boats, floors, gate posts, high end furniture and fittings. 
<b>Teak</b> 	Hard, durable, produces natural oil which help to resist moisture, fire, acids and alkalis. It has a straight gran, easy to work with however very expensive.	Laboratory benches, high-end furniture, veneers, garden furniture, traditional boat decks



<b>Subject:</b> Technology <b>Year:</b> 9 <b>Term :</b> 1 /2 & 5/6 <b>Topic:</b> Box Project
<b>Lesson Sequence</b> <ul style="list-style-type: none"> <li>• Design &amp; CAD</li> <li>• Design &amp; CAD</li> <li>• Practical</li> <li>• Test &amp; Evaluate</li> </ul>
<b>Key Assessments</b> Knowledge Organiser tests and class work mark.
<b>Core Texts / Websites</b> Design and Technology KS3 class book. BBC Bitesize. Technologystudent.com

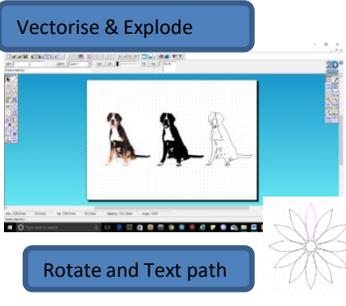
**Key Words:**  
 File, folder, Mood board, Design, Orthographic drawing, 3D, Isometric drawing, line, grid, bitmap, vectorise, hatch and fill, rotate, page set-up, print set-up, portrait, landscape, path, circle rectangle, delete, hatch, fill, rotate, Text Path, Background, Arrange, Layers, Evaluate, laminate, trim.

**Key Skills:** File management, 2D Design drawing, measuring, using adhesives, assembling, testing, evaluating.

### Tools & Equipment

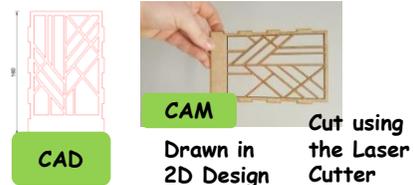


### Visual Reminders



**CAD:** Computer Aided Design, this is where a computer is used to help create the design.

**CAM:** Computer Aided Manufacture, this is where a computer controls a machine that makes the design



**Knowledge summary:**  
 Be able to use clip-path, clip and rotate in producing your pimped car with new wheels and possibly graphics. Use the funny heads exercise to practice your clipping skills.  
 Creating **new files and folders** is important for **organising and retrieving** your work. Giving files the correct suitable **name** makes sure that you are opening and working on the right file or **version** of that file. **Page set-up** is important because you need to know which printer or machine you are sending your file to and what **size / orientation** it accepts. **A mood board** on the **genres** of cards should cover: Old, young, funny, romantic, old photo comedy, boyfriend / wife / grandad etc. Find your own genres.  
 Use the 2D design skills which have been demonstrated to produce your greeting card. Be able to choose commands on this list and **say why** you would use them: **Select, Rectangle, curve, circle, hatch/fill, text along a path, clip-path, clip, delete, delete part, rotations, layers, closed boundaries.**  
 Know how to **laminate layers** together and make smooth using correct tools and adhesives: **Pritt glue, safety rule, craft knife.**

Paper & Boards		
Paper	Properties/Characteristics	Uses
Cartridge Paper	Thick white paper with a slightly rough surface texture. 120-150gsm, completely opaque and more expensive than photocopier paper	Pencil and ink drawings, sketching and watercolour.
Tracing paper	Off white, low opacity sheet. Translucency decreases as gsm increases. 40-120 gsm, translucent, takes pencil and most colours as well.	Copying and tracing images 
Boards	Properties/Characteristics	Uses
Corrugated cardboard (fibreboard)	Natural brown board finished on 1 or both sides with bonded paper. 100-5000 microns, strong, lightweight and rigid perpendicular to corrugations Insulative and easily printed on.	Packaging, boxes and impact protection 
Foil lined board	White card, usually coated or laminated with aluminium foil bonded on 1 side. 200-400 gsm, stiff, reflects heat and water and oil resistant coating enables food and liquid based products to be contained.	Takeaway containers and lids, used to retain heat for longer.



**Subject:** Technology

**Year:** 9

**Term:** 3 & 6

**Topic:** Pewter Casting

**Lesson Sequence**

- Research
- Analyse
- Design & CAD
- Practical
- Test & Evaluate

**Key Assessments**

Knowledge Organiser tests and class work mark.

**Core Texts / Websites**

Design and Technology KS3 class book.

BBC Bitesize.

Technologystudent.com

**The things you need to learn in this knowledge organiser are:**

- Learn the metal-based materials: Pewter, Ferrous, Non-ferrous.
- Describe the soldering process in at least 4 stages.
- Understand the process of casting

**Key Words:**

Metal Rule, Marking Out, Coping Saw, Bench hook, Vice, Casting, Designing, Files, Cutting, Smoothing, Finish.

**Key Skills:**

Drawing, designing, shaping, cutting, smoothing, assembling, testing, following instructions.

**Tools & Equipment**



### Ferrous Metals

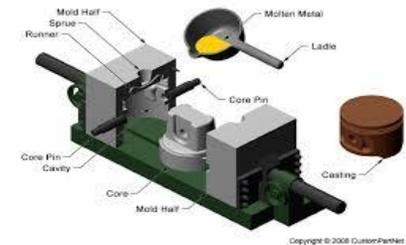
	Composition	Properties/ Characteristics	Uses
Cast Iron 	Re-melted pig iron* with additions	Hard skin but brittle soft core. Heavy. Rigid under compression. Cannot be bent or <b>forged</b> . Corrode easily unless protected ( <b>enamelled</b> )	Parts with complex shapes made via casting. Frying pans, machine parts, vices.
Mild Steel 	Iron and 0.15-0.30% Carbon	High tensile strength, ductile, tough, fairly malleable, poor resistance to corrosion.	Nails, screws, nuts, bolts, plate, sheets, car bodies

### Non Ferrous Metals

Pewter 	91% Tin 7.5% Antimony 1.5% Copper	Malleable, casts well, low melting point, corrosion resistant	Decorative features (jewellery), plates, cups 
Zinc 	Pure Metal	Low melting point, extremely corrosion resistant, easily worked	Coating of steel bins, buckets, watering cans (galvanising)

### Casting

Metals can be melted and **cast** by pouring into permanent moulds or sand moulds. When cooled the moulds are opened and the solid metal product can be taken out and polished. This is often used for making jewellery.



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**Subject:** Technology

**Year:** 9

**Topic:** (Structures & Mechanisms)

**Lesson Sequence**

1. Automata
2. Cams & Followers
3. Strongest Bridge
4. Emoji Person

**Key Assessments**

Knowledge Organiser tests and class work mark.

**Core Texts / Websites**

Design and Technology KS3 class book.

BBC Bitesize.

Technologystudent.com

**The things you need to learn in this knowledge organiser are:**

- Describe the different types of bridges.
- Understand the types of forces.
- Know the types of levers and linkages.
- Understand how a CAM works.
- Know the different types of CAMS

**Key Words:** Compression, Tension, Bending, Torsion, Pushing, Pulling, Beam, Arch, Truss, Suspension, Cantilever, Levers, Linkages, CAMS, Followers, Pulleys.

**Key Skills:** Drawing, designing, assembling, testing, following instructions, working in a team.

**Knowledge summary:**

**Compression** occurs when a pushing force is applied to either end of a material.

**Tension** occurs when a pulling force is applied to either end of a material.

**Bending** is both tension and compression forces; tension on 1 side with compression on the other.

**Torsion** forces occur when a material is twisted.

**Beam** bridges, also known as stringer bridges, are the simplest structural forms for bridge spans supported by an abutment or pier at each end.

The basic principle of **arch** bridge is its curved design.

**Truss** bridge, with its load-bearing structures composed of a series of wooden or metal triangles, known as trusses.

A **suspension** bridge is a type of bridge in which the deck (the load-bearing portion) is hung below suspension cables on vertical suspenders.

A **cantilever** bridge is a bridge built using cantilevers, structures that project horizontally into space, supported on only one end.

A **lever** is a rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.

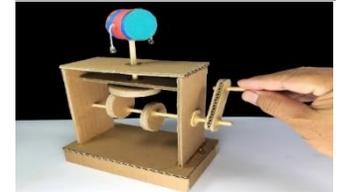
A **linkage** is a mechanism made by connecting together rigid links or levers.

A **cam** is a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion. It is often a part of a rotating wheel.

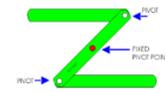
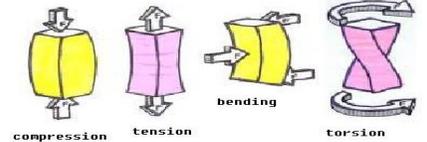
A **cam follower** is a component that is intrinsically tied to a cam.

A **pulley** is a wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights.

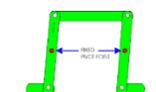
**Visual Reminders**



Automata



Reverse Motion Linkage



Parallel Motion Linkage



In this topic we will be going back to the basics and learning how to master them.

### Keywords- Physical skills

**Freeze Frame:** When an actor, or a group of actors, are moving and then freeze mid action. It should look as if someone has pressed pause during a film.

**Still image:** When an actor or a group of actors create a picture with their bodies.

**Physical Demeanour :** Your physical demeanour is your way of looking and behaving.



**Gait:** The way someone walks.

**Gesture:** a movement of part of the body, especially a hand or the head, to express an idea or meaning.

**Mannerism:** A habitual gesture or way of behaving. It is often something that the use is not doing intentionally.

**Stance:** The way someone holds themselves from the waist down.

**Posture:** The way someone holds themselves from the waist up.

**Facial Expressions:** A facial expression is when someone changes their face to communicate meaning or emotions. Sometimes people do these on purpose and sometimes they are subconscious.

### Keywords- Vocal skills

**Tone of voice:** this suggests your mood and your intention towards the listener, eg happy or sad.

**Pitch:** How high or low a person speaks.

**Pace:** How quickly or slowly a person speaks.

**Pause:** A stop, or gap, during a conversation.

**Emphasis:** the pressure on individual words that makes them stand out.

**Projection:** How far your voice reaches in a space.

**Volume:** How loud or quiet you are.

**Dynamics:** How much your voice varies in pitch, pace and volume.



## SJC Performance Fundamentals

Speak  
Clearly

Make sure the  
audience can see  
your face

Don't break  
character

### Questions:

- 1: Create a poster that would help you remember what the different physical skills are.
- 2: Create a poster that would help you remember what the different vocal skills are.
- 3: Write a letter to a year 6 student explaining why each performance fundamental is important.





# St Joseph's College Drama Department

## Autumn Term 2: Naturalism, Devised project



In this topic we will be learning how to perform naturalistically.

### Active listening-

Scene work takes on a new life when actors actively listen to each other instead of just waiting to say their next line. Scenes become living conversation, not rehearsed dialogue. To be an engaged actor on the stage, you have to listen to what's going on around you, even if you're not participating in the scene. When something goes awry or a line is dropped, if you're paying attention then you can help get a show back on track.

### Super-objectives-

A super-objective, focuses on the entire play as a whole. A super-objective can direct and connect an actor's choice of objectives from scene to scene.

The super-objective serves as the final goal that a character wishes to achieve within the script.

### Units and objectives-

The objective is a goal that a character wants to achieve. This is often worded in a question form as "What do I want?" An objective should be action-oriented, as opposed to an internal goal, in order to encourage character interaction onstage. The objective does not necessarily have to be achieved by the character and can be as simple as the script permits. For example, an objective for a particular character may simply be 'to pour a mug of tea.' For each scene, the actor must discover the character's objective. Every objective is different for each actor involved because they are based on the characters of the script.

You can break moments where your characters objective is different into units.

### Actioning (using actions)-

Actions are referred to as how the character is going to say or do something. More specifically, it as an objective for each line. Actions are how a character is going to achieve their objective. For example, a line in the script may read, '(whilst on the phone) "Hello, Sally. It's Bill from next door. You wouldn't happen to have any spare tea bags, would you? I know how well-organized you are." The Action for this line may be 'to flatter' in order to achieve the Objective of collecting the tea bags. Actions will be different for every single actor based on their character choices.

### Affective Memory-

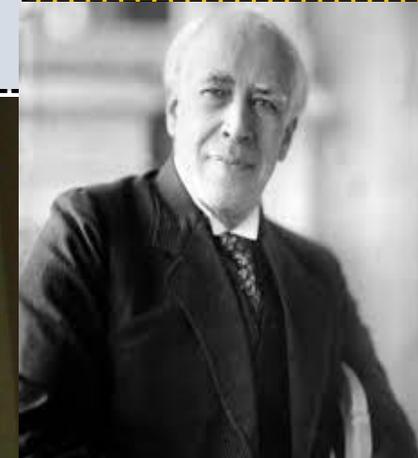
Affective memory was an early element of Stanislavski's 'system' and a central part of method acting. Affective memory requires actors to call on the memory of details from a similar situation (or more recently a situation with similar emotions) and import those feelings to those of their characters. Stanislavski believed actors needed to take emotion and personality to the stage and call upon it when playing their character

### Tasks:

- 1: write one page of a "naturalistic" script,
- 2: Pick one character from that script and action their lines.
- 3: Break that characters lines into units.



Lilly Do you ever think about that?  
 Tanya Think about what? invade  
 Lilly Being a parent.  
 Tanya All the time. charm  
 Cissy She doesn't just mean about having Anderson's children. She means about actually properly being a parent.  
 Tanya Yeah. teach





# St Joseph's College Drama Department

## Spring Term 1: Script project- Kneehigh theatre



In this topic we will be improving our skills at performing scripts.

**Context**- The background to a play is called its context, and this includes when and where the play is set. It is important to understand the context of a play, eg what would have been happening in that place and time. Knowing a play's context will influence the choices made in acting, costume and set design and as such how the play is brought to life on stage.

**Creating a script**- For this scheme of work you will be writing your own script adaptations of 'the wicker husband'. The original story is here: <https://short-stories.co/stories/the-wicker-husband-xbq5r3brd8x>

### Tasks:

1. Attempt listening to your script.
2. Write down the cues for your script.
3. Try a line run with someone at home.

**Good Rehearsal**- Learning a script can be challenging, especially in early **rehearsals**, but there are ways of making the lines easier to remember. By experimenting with different methods of learning lines, a performer can select the techniques that they find most suitable for them.

**Line run** - Line runs focus on simply running through the lines, without any acting, to help performers to practice and remember their lines. This process can assist the technical and design teams, as well as performers. It will identify if performers are engaged and 'acting' at all times, reacting to each other's lines as opposed to just waiting for their own.

**Listening to a script** - Some performers prefer to record their own voices speaking the lines and then listen back to it. Others will record other characters' lines and leave spaces or pauses where their own lines would be, so they can practise remembering their own part.

**Reading or writing** - Some performers prefer to write out or speak their lines repeatedly. This process of repetition helps them to learn their lines as a grounding before they add movement.

**Cues**- When learning a script, it is important for a performer to also learn their **cues**. For example, a character's first line may follow a lighting change at the start of the play and even if they are on stage prior to the lighting change they must not speak until they have seen or heard their cue. Performers also need to respond or react to others on stage, and considering how a character might react to the lines or actions of others in the play is very useful.

**Deciding a dramatic intention**- The aim of performing is to ensure that the **playwright's** intentions can be communicated to an audience. Knowing what these intentions are will help a performer choose how to perform. It is a performer's job to interpret and perform a character as appropriate to the demands of the performance. The way the actor sets out to do this is their dramatic intention.



### Kneehigh theatre

Kneehigh theatre are a popular and successful british theatre company, The best way to revise their work is to go on through their theatre 'cookbook'

[www.kneehigh.co.uk/cookbook](http://www.kneehigh.co.uk/cookbook)



In this topic we will be creating comedy performances.



### Theories of Humour

**Incongruity Theory-** Humour comes from unexpected conclusions.

**Relief Theory-** Humour comes from tension building up but then releasing in a way that is not too horrific or sad.

**Superiority Theory-** Humour comes from someone else's misfortune. We laugh because we feel better than someone or something.

**Benign Violation Theory-** An attempt to put the other three theories together. All humour need three key conditions.

1. A norm violation (something that goes against our expectations)
2. A safe (benign) context in which the violation takes place.
3. A feeling of both the other two at the same time making it funny, not upsetting or annoying.

### Comic Timing

**Comic timing** emerges from a performer's joke delivery: they interact with an audience—inflection, rhythm, cadence, tempo, and pausing—to guide the audience's laughter, which then guides the comedic narrative. The pacing of the delivery of a joke can have a strong impact on its comedic effect, even altering its meaning; the same can also be true of more physical comedy such as slapstick.

### Tasks:

- 1: Create a guide on "how to be funny"
- 2: Turn your guide into a poster
- 3: Turn your comedy project into a 5-page script.



### Physical Comedy

Physical Comedies are any form of comedy that creates humour with human bodies.

You can create physical comedy through a number of ways. Often, physical comedy is created through a combination of exaggeration and physical control.



### Verbal Comedy

Verbal Comedy is any comedy that makes an audience laugh with words, and the delivery of them.

Pauses, emphasis, and changes in pitch and pace can all help make the delivery of your lines funnier.





In this topic we will be going back to the basics and learning how to master them.

### Keywords- Physical skills

**Freeze Frame:** When an actor, or a group of actors, are moving and then freeze mid action. It should look as if someone has pressed pause during a film.

**Still image:** When an actor or a group of actors create a picture with their bodies.

**Physical Demeanour :** Your physical demeanour is your way of looking and behaving.

**Gait:** The way someone walks.

**Gesture:** a movement of part of the body, especially a hand or the head, to express an idea or meaning.

**Mannerism:** A habitual gesture or way of behaving. It is often something that the use is not doing intentionally.

**Stance:** The way someone holds themselves from the waist down.

**Posture:** The way someone holds themselves from the waist up.

**Facial Expressions:** A facial expression is when someone changes their face to communicate meaning or emotions. Sometimes people do these on purpose and sometimes they are subconscious.

### Keywords- Vocal skills

**Tone of voice:** this suggests your mood and your intention towards the listener, eg happy or sad.

**Pitch:** How high or low a person speaks.

**Pace:** How quickly or slowly a person speaks.

**Pause:** A stop, or gap, during a conversation.

**Emphasis:** the pressure on individual words that makes them stand out.

**Projection:** How far your voice reaches in a space.

**Volume:** How loud or quiet you are.

**Dynamics:** How much your voice varies in pitch, pace and volume.

### Collaborating - Top Tips

**1. Be transparent.** There is a difference between telling the truth and being transparent. Transparency is about telling the truth before you're asked and divulging all the important information along the way. Transparency builds trust because people will never feel as though you're keeping something from them.

**2. Say what you are going to do and follow through.** No one wants to collaborate with someone who drops the ball, even if it just happens on occasion. Good collaborators are effective at judging how long it will take them to get something done and then manage their schedule to deliver on time. They can be taken at their word and be counted on and because of that, people love working with them.

**3. Allow for a little give and take.** Collaboration isn't about getting what you want all the time and everyone else collaborating for your benefit. A question great collaborators ask themselves is, "What am I contributing to this relationship and how am I supporting the greater good?" People will be more likely to collaborate to help you if you collaborate when they need help as well.

**4. Listen to understand, not to respond.** People like to be heard, and know their ideas and thoughts are being taken into consideration. In fact, that's a key element of collaboration. If you want to be regarded as an effective collaborator, you need to ensure you're listening (truly listening) to those you collaborate with and making changes when it makes sense based on their feedback.

### Questions:

- 1: Create a poster that would teach year 7's how to use their physical skills in real life.
- 2: Create a poster that would teach year 7's how to use their vocal skills in real life.
- 3: Create a powerpoint to go alongside your presentations.





# St Joseph's College Drama Department

## Summer Term 2: Blood Brothers

In this topic we will be learning about the play Blood Brothers



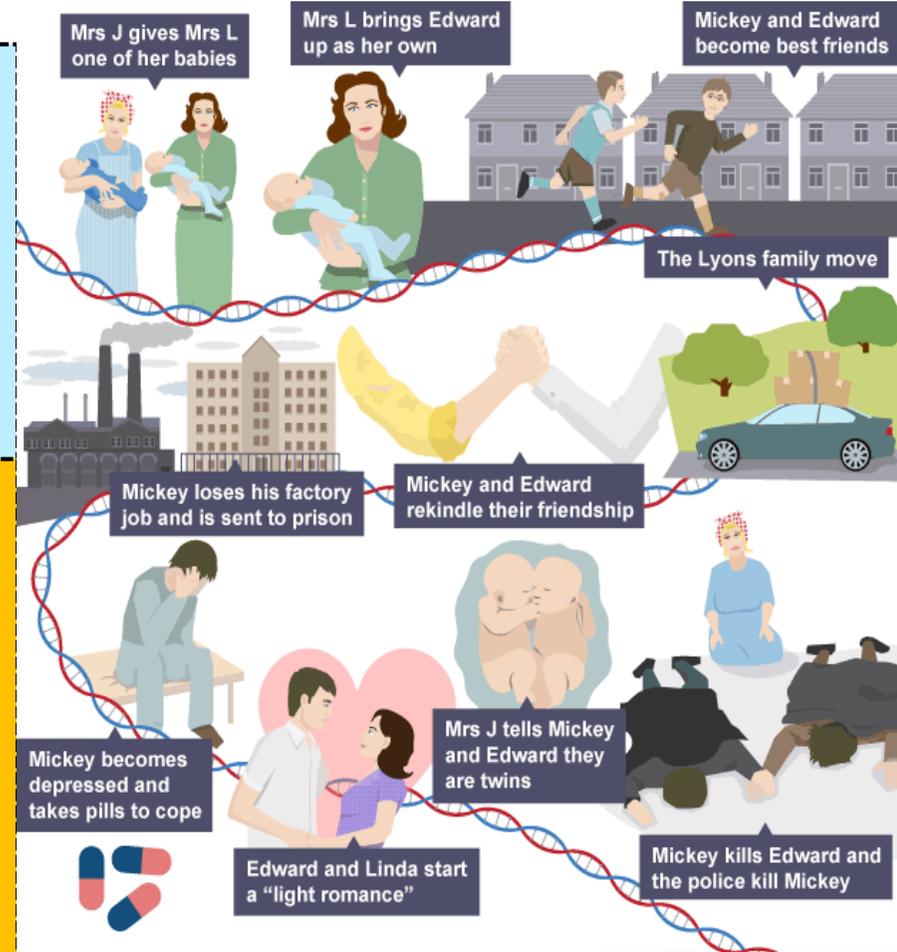
**Key themes**-Willy Russell asks several questions of the audience through the events of Blood Brothers, particularly about how equal our society is. Through presenting twins, who have the same DNA but are brought up in such different families, the playwright shows how much our life experiences affect the opportunities we have in life.

Russell also introduces the idea of superstition through the character of Mrs Johnstone. Should we accept that fate is in control of our lives or are other factors more important?

Another theme introduced in the play is violence. This is present in Mickey's life from when we meet him at the age of seven and gets worse and worse until his and Edward's deaths at the end of the play.

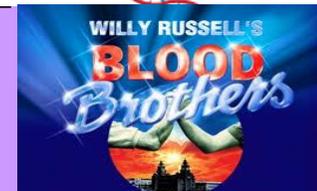
**Blood Brothers Context**-Russell wrote Blood Brothers in 1981, and it was first performed as a musical in 1983. This was during the period that Conservative Prime Minister Margaret Thatcher was in power. There was very high unemployment during this time, particularly in industrial working-class areas in northern England, such as Liverpool - where Russell is from and where the play is set. Mickey and his family represent the working classes, who were badly affected by the economic downturn, whereas Edward and the Lyons family embody the middle classes, who thrived in the 1980s.

The difference between the Johnstone and Lyons families draws attention to the impact that a person's social class can have on their opportunities in life. From the moment that Mrs Johnstone goes to work for Mrs Lyons at the beginning of the play, the audience's attention is drawn to how their lives are worlds apart. This contrast is emphasised throughout the play, through the characters of Mickey and Edward. Even at the age of seven, the twins' experiences of life are disparate. When they are young, their friendship overcomes their differences, but as they get older, the space between the brothers gets wider and harder for them to move past. Margaret Thatcher believed that anyone could be successful if they worked hard. Russell demonstrates that for Mickey this is not true. Without having the opportunities that Edward is given, Mickey's prospects are very limited, regardless of how hard he works and his desire to succeed.



### Tasks:

- 1: Write a 1 page review of Blood Brothers
- 2: Design a costume for Mickey.
- 3: Design a costume for Edward





This unit will explore a series of fiction extracts written by Black writers with a focus on context, language and the writer's techniques.

### Keywords and Vocabulary:

Windrush	Independent
Media	Race
Scandal	Colloquialism
Viewpoint	Campaign
Marginalized	Human rights
Immigration	Police brutality
Refugee	Protest
Atmosphere	Peace
Tone	Politicians
Americanah	Police force
Methods	Argument
	Editorial
	Broadsheet

### Key Themes:

Marginalisation
Experiences of others
Cultural differences
Tolerance
Current issues
Different experiences
Voices heard
Suffering
Memory
Celebration



### Common Writing Methods:

**Alliteration:** a series of words in quick succession that all start with the same letter or sound

**Colloquialism:** the use of casual, informal language, which can include slang

**Flashbacks:** previous events split present-day scenes, sometimes to build tension

**Foreshadowing:** the writer hints at events yet to come

**Hyperbole:** an exaggerated statement that emphasises the significance of a statement's actual meaning

**Imagery:** appeals to the readers' senses through highly descriptive language (show, don't tell)

**Juxtaposition:** places two or more dissimilar characters, themes, concepts, etc. side by side and the profound contrast highlights the differences

**Metaphor:** compares two similar things by saying that one of them is the other

**Motif:** a recurring symbol, concept or image throughout the novel and develops the theme(s) of the narrative

**Onomatopoeia:** refers to words that sound like the thing they're referring to

**Oxymoron:** two contradictory words that describe one thing

**Personification:** uses human traits to describe non-human things

**Point of view:** the mode of narration in a story

**Repetition:** an idea, a word, a phrase that is repeated to get a point across or to create a certain atmosphere or mood

**Simile:** compares two things using 'like' or 'as'

**Tone:** sets the feelings you want your readers to take away from the story

### About the Writer: Research Task

Often, a piece of writing will reflect aspects of the writer's life. However we can't always assume a text is autobiographical, even if it is written in the first person. Biographical clues from a text's **context** can give you insights into its themes or message. Some questions you might ask are:

- Are events or places from the poet's life reflected in the text?
- Are people or relationships from the poet's life reflected in the text?
- Are the poet's ideas or beliefs reflected in the text?

You can research the poet's background to discover answers to these questions. Be careful to only include details you have discovered that reveal something about the text you are reading.

### Big Questions:

Why is equality important?  
How does a writer use language and structure and how can I use these aspects in my own writing?

### Topic Trivia Questions:

1. What do I know about black history, colonialism and its connections to UK history?
2. What is culture and why is it so important? What can we gain from learning about the culture of other people?
3. Do you think it is more difficult to get what you need if people think you are different?
4. How is immigration represented in the media?
5. How can a society benefit from immigration?
6. What do you value most about your cultural background? What are your reasons for this?



This unit will explore a series of fiction extracts written by Black writers with a focus on context, language and the writer's techniques.

### Keywords and Vocabulary:

**Windrush** - relating to or denoting the people who emigrated from the Caribbean to Britain on the British ship the *Empire Windrush* in 1948.

**Media** - the main means of mass communication (broadcasting, publishing, and the Internet) regarded collectively.

**Scandal** - an action or event regarded as morally or legally wrong and causing general public outrage.

**Viewpoint** - a person's opinion or point of view.

**Marginalized** - treat (a person, group, or concept) as insignificant or peripheral.

**Immigration** - the action of coming to live permanently in a foreign country

**Refugee** - a person who has been forced to leave their country in order to escape war, persecution, or natural disaster.

**Atmosphere** - the pervading tone or mood of a place, situation, or creative work.

**Tone** - the general character or attitude of a place, piece of writing, situation, etc.

**Americanah** - *Americanah* is a 2013 novel by the Nigerian author Chimamanda Ngozi Adichie, for which Adichie won the 2013 U.S. National Book Critics Circle Award for fiction

**Methods** - Techniques are used by writers as an attempt to make the reader think in a certain way.

**Independent** - free from outside control; not subject to another's authority.

**Race** - usually associated with biology and linked with physical characteristics such as skin color or hair texture.

**Colloquialism** - a word or phrase that is not formal or literary and is used in ordinary or familiar conversation.

**Campaign** - work in an organized and active way towards a particular goal, typically a political or social one.

**Human rights** - a right which is believed to belong to every person.

**Police brutality** - used to refer to various human rights violations by police

**Protest** - a statement or action expressing disapproval of or objection to something.

**Peace** - freedom from disturbance; tranquillity.

**Politicians** - a person who is professionally involved in politics, especially as a holder of an elected office.

**Police force** - a body of trained **officers** entrusted by a government with maintenance of public peace and order, enforcement of laws, and prevention and detection of crime.

**Argument** - a reason or set of reasons given in support of an idea, action or theory.

**Editorial** - a newspaper article expressing the editor's opinion on a topical issue.

**Broadsheet** - a newspaper with a large format, regarded as more serious and less sensationalist than tabloids.



This unit will explore the play 'Richard III' with a focus on context, language and the writer's techniques.

### Keywords and Vocabulary:

Villain	Rhetoric
Heraldic	Persuasive
Deceit	Victim
Duplicity	Grief
Soliloquy	Staging
Woo	Fate
Manipulation	Kinship
Exploitation	Oration
Morality	Sincerity
Monarchy	Justified
Sovereignty	Reluctant
Vulnerable	Modest
Illegitimate	

### The War of the Roses - Simple Plot:

After years of skulking in his brother Edward's shadow, Richard, Duke of Gloucester, has his chance to seize the English throne. To keep it, he will murder his family, execute his enemies, and marshal an army to fend off foreign invaders.

#### Acts I-III: A Scheming Duke:

As Duke of Gloucester, Richard plots a bloody path to the throne

#### Act IV: A Cruel King

Once crowned, Richard III secures his rule through murder and treachery

#### Act V: A Vanquished Tyrant

Rebels led by the Earl of Richmond put an end to Richard's reign of terror

### The War of the Roses - Context:

1. In the 1400's the nobles were very powerful. The most important noble families were Lancaster, York and Tudor.
2. The York family and the Lancaster family both had legitimate claims to the throne as descendants of Edward III. There had been many years of fighting and the crown changed hands between the Yorks and Lancasters many times.
3. Edward IV a Yorkist king defeated the previous king, Henry VI, a Lancastrian king, to claim the throne for himself.
4. Edward IV died in 1483 leaving two sons. They were too young to rule.
5. Richard, Duke of Gloucester and Edward's brother became 'Protector' until Edward V was old enough to rule.
6. Richard imprisoned Edward V and his brother Richard in the Tower of London.
7. July 1483 Richard crowned Richard III of England.
8. Henry Tudor, the Earl of Richmond whose mother was a Lancaster decides to make his claim for the throne.
9. Richard III and Henry Tudor fought a battle at Bosworth Field in 1485.
10. Richard died in battle. Henry Tudor became first Tudor King, Henry VII.

### Key Characters:

**Richard:** Also called the duke of Gloucester, and eventually crowned King Richard III. Deformed in body and twisted in mind, Richard is both the central character and the villain of the play. He will stop at nothing to become king.

**Buckingham:** Richard's right-hand man in his schemes to gain power.

**King Edward IV:** The older brother of Richard and Clarence, and the king of England at the start of the play. He is unaware that Richard attempts to thwart him at every turn.

**Clarence:** The gentle, trusting brother born between Edward and Richard in the York family. Richard has Clarence murdered in order to get him out of the way.

**Queen Elizabeth:** The wife of King Edward IV and the mother of the two young princes (the heirs to the throne) and their older sister, young Elizabeth. Elizabeth is part of the Woodville family; her kinsmen—Dorset, Rivers, and Gray—are her allies in the court.

**Anne:** The young widow of Prince Edward, who was the son of the former king, Henry VI. Lady Anne hates Richard for the death of her husband, but for reasons of politics—and for sadistic pleasure—Richard persuades Anne to marry him.

**Margaret:** Widow of the dead King Henry VI, and mother of the slain Prince Edward. She is embittered and hates both Richard and the people he is trying to get rid of, all of whom were complicit in the destruction of the Lancasters.

**Symbols to look out for:** What is the significance of each of these symbols throughout the play?

The Tower of London

The White Boar

Ghosts

### Topic Trivia Questions:

1. The War of the Roses is sometimes called 'The Cousins War'. Can you find out why?
2. In 2012 the remains of Richard III were found buried. Where were they discovered?
3. What makes Richard such a great villain?
4. What is the most wicked act that Richard carries out in order to be king?
5. Which character do you have most sympathy for and why?
6. How is Richard able to manipulate the other characters so easily?

### Big Questions:

Do you need good morals to be a good leader?

Why is Shakespeare making these language choices and how successful are they?



This unit will explore the play 'Richard III' with a focus on context, language and the writer's techniques.

### Keywords and Vocabulary:

**Villain** - a character whose evil actions or motives are important to the plot.

**Heraldic** - relating to heraldry.

**Deceit** - the action or practice of deceiving someone by concealing or misrepresenting the truth.

**Duplicity** - dishonest talk or behaviour, especially by saying different things to two people

**Soliloquy** - an act of speaking one's thoughts aloud when by oneself or regardless of any hearers, especially by a character in a play.

**Woo** - seek the favour, support, or custom of.

**Manipulation** - the action of manipulating something in a skilful manner.

**Exploitation** - the action or fact of treating someone unfairly in order to benefit from their work.

**Morality** - principles concerning the distinction between right and wrong or good and bad behaviour.

**Monarchy** - a form of government with a monarch at the head.

**Sovereignty** - supreme power or authority.

**Vulnerable** - exposed to the possibility of being attacked or harmed, either physically or emotionally.

**Illegitimate** - not authorized by the law; not in accordance with accepted standards or rules.

**Rhetoric** - the art of effective or persuasive speaking or writing, especially the exploitation of figures of speech

**Persuasive** - good at persuading someone to do or believe something through reasoning or the use of temptation.

**Victim** - a person harmed, injured, or killed as a result of a crime, accident, or other event or action.

**Grief** - the response to loss, particularly to the loss of someone or something that has died, to which a bond or affection was formed

**Staging** - the method of presenting a play or other dramatic performance.

**Fate** - the development of events outside a person's control, regarded as predetermined by a supernatural power.

**Kinship** - blood relationship.

**Oration** - a formal speech, especially one given on a ceremonial occasion.

**Sincerity** - the absence of pretence, deceit, or hypocrisy.

**Justified** - show or prove to be right or reasonable.

**Reluctant** - unwilling and hesitant; disinclined.

**Modest** - unassuming in the estimation of one's abilities or achievements.



This unit will explore 19<sup>th</sup> Century literary non-fiction. It will help develop your understanding of contexts as well as help you develop an understanding of 19<sup>th</sup> Century language.

### Keywords and Vocabulary:

- Spar
- Per diem
- Assiduously
- Gruel Temerity
- Veneration
- Benignant
- Exordium
- Indignatio
- Equipage
- Propriety
- Lamentable
- kinsman
- Inexorable
- Satiety
- Lustrous
- Apprehension
- Providence

### Cultural understanding:

- Childhood and family
- Animals
- Education
- The Supernatural
- Adventure and mystery
- Pollution and the environment
- Crime

### Big Questions:

How are ideas and characters presented using textual details?

What do writers include in their writing to create mystery and suspense?

### Assessment Objectives

**AO1:** 1) identify and interpret explicit and implicit information and idea AND 2) select and synthesise evidence from different texts

**AO2:** Explain, comment on and analyse how writers use language and structure to achieve effects and influence readers, using relevant subject terminology to support their views

**AO4:** Evaluate texts critically and support this with appropriate textual references

**AO5:** Communicate clearly, effectively and imaginatively, selecting and adapting tone, style and register for different forms, purposes and audiences. Organise information and ideas, using structural and grammatical features to support coherence and cohesion of texts.

**AO6:** Candidates must use a range of vocabulary and sentence structures for clarity, purpose and effect, with accurate spelling and punctuation

### Topic Trivia Questions:

1. Who were the Victorians and when did they live?
2. List 3 differences between Victorian and modern schooling.
3. Why are schools a popular setting for films and novels?
4. What language are the words 'bona' and 'femina'? Can you guess what they mean?
5. What is anthropomorphism? Why do writers use this technique?

• If you like Victorian non-fiction, try this Victorian fiction texts:

- Oliver Twist
- Jane Eyre
- David Copperfield
- Nicholas Nickleby
- Hard Times
- Wuthering Heights
- Northanger abbey
- Tess of the D-Urbervilles
- Kings Solomon's Mines
- The Sign of Four
- Treasure Island
- Black Beauty
- The Call of the Wild
- Robert Falcon Scott



Keywords and Vocabulary:

**Spar** - exchange light blows — either literally/figuratively by punching each other

**Per diem** - for each day

**Assiduously** - with great care and perseverance

**Gruel** - a thin liquid food of oatmeal or other meal boiled in milk or water

**Temerity** - a thin liquid food of oatmeal or other meal boiled in milk or water

**Veneration** - with great respect

**Benignant** - kindly and benevolent

**Exordium** - the beginning or introductory part

**Indignation** - anger/annoyance provoked by what is perceived as unfair treatment

**Equipage** - spying

**Propriety** - rules of behaviour conventionally considered to be correct

**Lamentable** - full of or expressing sorrow or grief

**Kinsman** - man who is one of a person's blood relations

**Inexorable** - impossible to stop or prevent

**Satiety** - state of being fed or fullness

**Lustrous** - shiny and glossy

**Apprehension** - anxiety or fear that something bad or unpleasant will happen

**Providence** - the protective care of God or of nature as a spiritual power



This unit will explore Poetry from the emergence of the Sonnet to the present day with a focus on how form is used to project meaning.

### Formal Features of Poetry

**Meter** - The number of beats and bars in lines that helps to produce a rhythm in a poem, or the rhythmic measure of a line. How many syllables does each line have? Why? How does changing the meter affect the meaning of the poem or the way it is read? Common types of meter or elements of meter are iambic pentameter, dactyls, trochees, spondees and more. Do some research and find out what they all are and how they can change a poem!

**Rhyme** - Where words which sound similar to each other are used closely together to link ideas and sounds.

**Caesura**: a metrical pause or break in a verse where one phrase ends and another phrase begins.

**Enjambment**: the continuation of a sentence without a pause beyond the end of a line, couplet, or stanza.

**End-stop**: occurs when a line of **poetry** ends with a full stop or definite punctuation mark, such as a colon.

**Stanza**: Sometimes also called a verse, a group of lines that are kept together similar to a paragraph in prose,

### Linguistic Devices:

**Alliteration**: Repetition of the same sounds at the beginning of a sequence of words.

**Figurative Language**: When writers use similes, metaphors or personification to describe something in a non-literal way.

**Metaphor** - a comparison where something is said to be something else.

**Personification** - giving human qualities to something which is not human.

**Onomatopoeia**: A word whose sound suggests what the word is meant to depict./ the word imitates the natural sound.

**Oxymoron**: Two contradictory words placed together for effect.

**Rhetorical question**: A question created to make a reader think about the topic in hand/ asked for effect or to influence the reader in some way.

**Repetition**: Using a word or phrase more than once in a passage/ sentence.

**Emotive Language**: Vocabulary which inspires emotion/ intense feeling of some kind in the reader.

**Second person 'you' (direct address)**: Writing directly for/ to the reader and using the pronouns 'you'/ 'your' to indicate this.

**Simile**: A comparison using 'like' or 'as'.

**Triples (rule of three)**: Collection of three related elements/ words/ phrases.

**Imperative verbs (commands)**: Verbs which command/ instruct/ direct.

**Use of colour/ senses**: Colour and a focus on sound/ texture etc really enhances description and brings it to life for the reader.

### BIG QUESTIONS

How do poets use form to express meaning?

Is writing poetry an effective way to protest?



This unit will explore Poetry from the emergence of the Sonnet to the present day with a focus on how form is used to project meaning.

# Sonnet 18 by Shakespeare - a study of the features of the Shakespearean Sonnet.

**A new idea:** The sonnet will present a new idea to begin with. Here the idea is *should the writer compare a loved one to a summer's day.*

**A discussion of that idea:** The first eight lines of the sonnet will usually discuss the main idea. Here the discussion is of how summer is less constant than the loved one.

**A 'turn' from that idea. This is called the 'volta'.** Here the word 'But' indicates that the main idea is being discounted. The loved one is more eternal than summer (due to the writing of this poem).

**A conclusion in a rhyming couplet:** Here the conclusion is that the loved one will live eternally in poetry.

**The Rhyme Scheme** of a poem is recorded in this way for poetic analysis. Sonnet 18 is a classic Shakespearean Sonnet which has the ABAB CDCD EFEF GG rhyme. This helps to make the argument seem *inevitable*, creates a *unity* and is *pleasing* to listen to. When the reader gets to the rhyming couplet a sense of conclusion and truth is achieved through the final closing rhyme.

Shall I compare thee to a Summer's day?	A
Thou art more lovely and more temperate:	B
Rough winds do shake the darling buds of May, And Summer's lease hath all too short a date:	A B
Sometime too hot the eye of heaven shines, And oft' is his gold complexion dimm'd;	C D
And every fair from fair sometime declines, By chance or nature's changing course untrimm'd:	C D
But thy eternal Summer shall not fade Nor lose possession of that fair thou owest;	E F
Nor shall Death brag thou wanderest in his shade, When in eternal lines to time thou growest:	E F
So long as men can breathe, or eyes can see, So long lives this, and this gives life to thee.	G G

## Poetic Meter

Shakespearean Sonnets have a specific poetic meter too. Each line has 10 syllables, usually split into 5 iambs. This is called **iambic pentameter**.

(Shall - I) - (com - pare) - (thee - to) - (a - Sum) - (mer's - day)

Each bracketed unit in the above line is an **iamb**. There are five iambs to a line, hence pentameter (like pentagon). The red beat is stressed (longer).

The iambic line is said to have the same rhythm as a heart beat. It is considered to be a very formal way to write and adds to the sense of perfection for which Shakespeare's Sonnets are known.

<b>Key Words:</b>	End-stop
Shakespearean	Discussion
Sonnet	Argument
Structure	Love poetry
Form	Nature
Rhythm	Metaphor
Rhyme	Simile
Iambic	Address
Pentameter	Tone
Volta	Conclusion
Couplet	Flattery



**KEY PROTESTS TO BE EXPLORED**

**#MeToo protest** - #MeToo is a social movement started by Tarana Burke on social media in 2006. People publicised their accounts of sexual harassment or allegations of sex crimes with the hashtag. The movement was revived or gained more widespread acknowledgement in 2017 when the allegations against movie mogul, Harvey Weinstein came to public awareness.

**Ableist protest** - Ableism is when non-disabled individuals are treated as the normal standard of living. There have been a number of recent high profile people with differing abilities who have spoken out against unfair or unthinking representation in media, society, art or writing.

**War protest** - Wars have been protested throughout the years and they continue to be protested. Notably, the First World War was protested in very significant and lasting poetry. Many other wars since have found poetic protest, especially the Vietnam War.

**Social/Racial protest** - Social protest and Racial protest are different things entirely but we will study how they converge in a similar protest against Donald Trump's America through the poet Terrance Hayes and his use of the American Sonnet.

**Protest Poems**

Sometimes a poet will wish to protest directly against the 'issue' that they are tackling. They may do this by using their experience or knowledge they have gained through the media. Sometimes a poet will use a device such as an **extended metaphor** to deal with particularly troubling material. Sometimes a poet will deal directly with another high-profile poem.

Often a protest poem will not only protest in content but in its formal construction too. What we have come to assume as poetry is **subverted, turned around, criticized** or forgotten altogether.

**Research**

- Ableism information: <https://www.accessliving.org/newsroom/blog/ableism-101/>.
- Information on the #MeToo Movement: <https://metoomvmt.org>
- #MeToo Poetry: <http://www.chicagoreview.org/metoo/>
- Information on Vietnam Protests: <https://www.history.com/topics/vietnam-war/vietnam-war-protests>
- Vietnam Protest Poetry: <https://www.poetryfoundation.org/collections/144186/the-poetry-of-the-vietnam-war>

**Assessment Objectives:**

**AO1**

Write a response related to the key word in the question. Use comparative language to explore both poems. Use a range of evidence to support your response and to show the meaning of the poems.

**AO2**

Comment on the effect of the language in your evidence, including individual words. Identify any use of poetic techniques and explain their effects.

**AO3**

What might the poet's intentions have been when they wrote the poem? Comment on the historical context - when was the poem published and what impact might it have had then, and today?



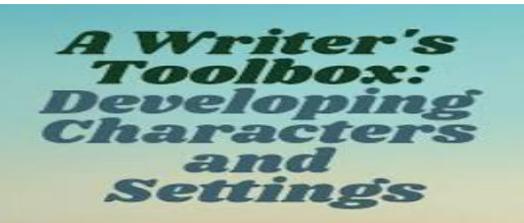
This unit will explore a series of fiction extracts with characters and settings in mind to explore writers' methods and creative writing.

### Key Writers

Harper Lee  
Jane Austen  
Charles Dickens  
F. Scott Fitzgerald  
Toni Morrison  
Langston Hughes  
Maya Angelou  
Chinua Achebe  
Ken Kesey  
William Boyd  
Maggie O'Farrell  
Daphne Du Maurier  
Oscar Wilde  
J. K. Rowling  
Rohinton Mistry

### Narrative Aspects:

Characterisation  
Settings  
Destinations  
Narrative voice  
Point of view  
Plot  
Time and sequence



### Common Writing Methods:

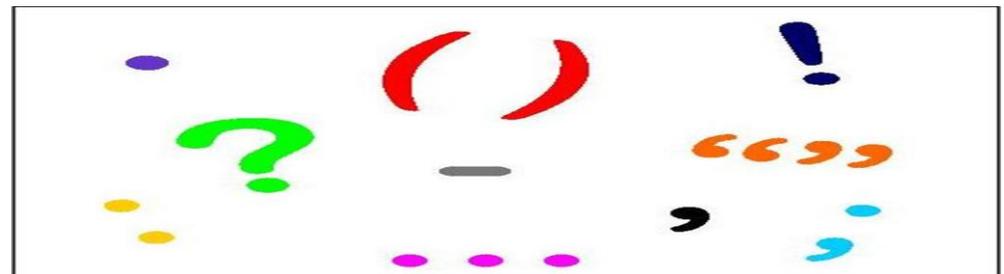
**Alliteration:** a series of words in quick succession that all start with the same letter or sound  
**Colloquialism:** the use of casual, informal language, which can include slang  
**Flashbacks:** previous events split present-day scenes, sometimes to build tension  
**Foreshadowing:** the writer hints at events yet to come  
**Hyperbole:** an exaggerated statement that emphasises the significance of a statement's actual meaning  
**Imagery:** appeals to the readers' senses through highly descriptive language (show, don't tell)  
**Juxtaposition:** places two or more dissimilar characters, themes, concepts, etc. side by side and the profound contrast highlights the differences  
**Metaphor:** compares two similar things by saying that one of them is the other  
**Motif:** a recurring symbol, concept or image throughout the novel and develops the theme(s) of the narrative  
**Onomatopoeia:** refers to words that sound like the thing they're referring to  
**Oxymoron:** two contradictory words that describe one thing  
**Personification:** uses human traits to describe non-human things  
**Point of view:** the mode of narration in a story  
**Repetition:** an idea, a word, a phrase that is repeated to get a point across or to create a certain atmosphere or mood  
**Simile:** compares two things using 'like' or 'as'  
**Tone:** sets the feelings you want your readers to take away from the story

### About the Writer: Research Task

1. Choose a writer from the collection that you are interested in.
2. Research some of their more famous texts, characters and settings.
3. Read several extracts from at least 3 books - what similarities or differences do you notice about their writing style?
4. Choose one extract and re-write it in a different perspective than the one given. For example, if it is written in the first person, make it from the third person.
5. Look at their vocabulary choices used in one of the other extracts. Choose five words you don't typically use in your day-to-day writing and use them in either a series of sentences or in a paragraph. Show your teacher for House Points!

### Big Questions:

How have writers changed characters and settings across?  
How does a writer use language and structure and how can I use these aspects in my own writing?





Understanding nutrition can enable us to make better choices in our daily diet.

### Macronutrients - We need these in large amounts.

Nutrient	Key Information	Main Functions in Body	Foods
<b>Carbohydrates</b>	Breaks down into starch and sugar. 1/3 of our diet should consist of starchy carbs. Wholegrain versions are higher in fibre.	Starch (complex carbohydrate) - Gives slow release energy. Fibre - Helps digestive system. Sugar (simple carbohydrate) - Gives fast energy.	Potatoes, bread, pasta, cereals, rice. (choose wholegrain versions to get more fibre).
<b>Protein</b>	Broken down into HBV (mainly from animal sources) and LBV (from plant sources) proteins.	Growth, repair and of muscles and cells. Body chemicals (hormones & enzymes). Secondary source of energy.	Meat, fish, eggs, nuts, seeds, pulses, lentils.
<b>Fat</b>	Broken down into saturated and unsaturated fats. Saturated fats are bad if eaten in large amounts.	Insulates our vital organs (heart, lungs etc) and keeps us warm. Gives concentrated energy.	Butter, lard, margarine, sunflower oil, olive oil etc.

### Micronutrients - We need these in small amounts.

Vitamins	Minerals
<b>Fat Soluble (dissolve in fat) - A, D, E, K</b>	Calcium, Iron, Sodium, Phosphorus, Potassium, Magnesium, Zinc.
<b>Water Soluble (dissolve in water) - B Vitamins and Vitamin C</b>	

- Anaemia**----- Too few **red blood cells** caused by a lack of **iron** in the diet
- Bowel Cancer**----- Can be prevented by eating **dietary fibre**.
- Deficiency**----- A lack of a particular nutrient in the diet.
- Diabetes (Type 2)**----- Caused by too much **processed sugar**, obesity and lack of exercise.
- Fibre (NSP)**----- Found in fruit, vegetables, pulses and grains. Helps digest food & remove waste.
- Heart Disease**----- When coronary arteries get blocked with **(CHD)** fatty deposits.
- Malnutrition**----- Caused by a lack of nutrients in the diet.
- Osteoporosis**----- Brittle bone disease, lack of **calcium**.
- Sodium Chloride** **Salt** - linked to strokes and heart attacks.
- Saturated Fat**----- Raises **cholesterol** and can be harmful.
- Tooth Decay**----- Caused by plaque and too much **sugar**.

**DRV's (Dietary Reference Values)** - These are estimates of the amount of nutrients people should have in their diet. Traffic light labels are used on packaging to show this. Red warns where fats/saturate/sugars/salt are too high.





## High Risk Foods



**High Risk Foods** have a short shelf life. You can't keep them for long, or the **bacteria** might multiply to dangerous levels and cause **food poisoning**.

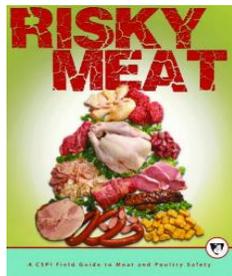
## High Risk Foods

Meat  
Poultry  
Fish  
Seafood  
Shellfish



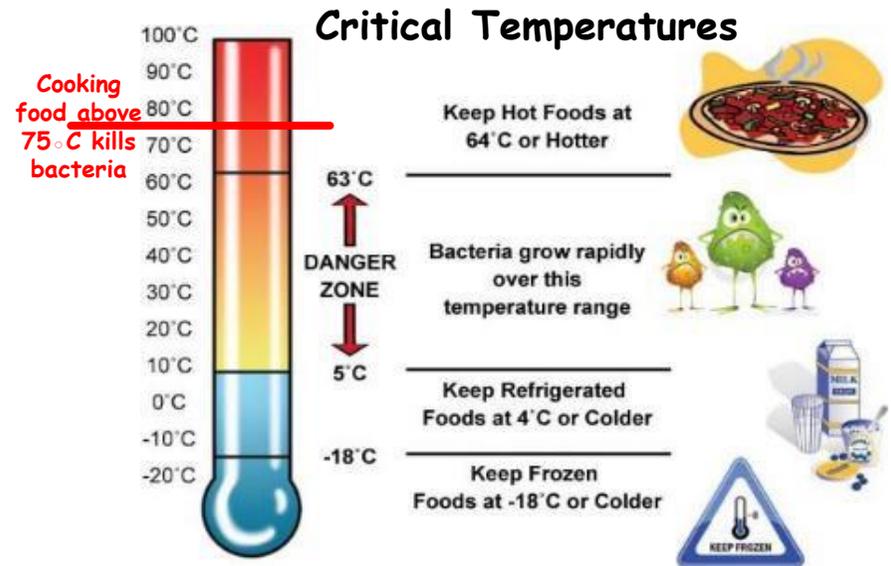
Cooked Rice

Eggs  
Dairy Foods  
Gravies  
Sauces  
Stocks



**Cooked food** needs to reach **75°C**.

## HIGH RISK FOOD CAUSES most food poisoning cases





## Foods and Cuisines from Around The World



A **cuisine** is a style of cooking from a particular country or region of the world. Different cuisines have different ingredients, styles and preparation & cooking techniques.

Give 6 examples from the following countries

UK

Japan

Italy

China

Mexico

India

**Staple foods** are crops that grown in particular parts of the world due to their climate and conditions. E.g. wheat in Europe, rice in Asia or maize in South America.

## Environmental Issues With Food Production

**Environment**----

Refers to the air, water and land where people and animals live.

**Sustainability**---

We need to look after our environment by using less energy, reducing the consumption of water, avoiding waste and recycling/reusing as much as possible.

**Carbon footprint**-

A measure of the impact your personal lifestyle has on the environment (**including your food choices**).

**Landfill**-----

Nearly a third of all food we produce ends up in landfill sites where it gives off methane gas as it decomposes. This adds to carbon emissions.



This term we will explore the reasons behind global population change, as well as examining population structures and urban growth.

### Keywords:

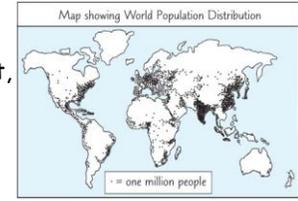
- Lowland plain** - flat land with fertile soil
- Natural resources** - fossil fuels, ores etc.
- Distribution** - where something is spread
- Population density** - number of people living per square km
- Megacity** - city with population of >10 million
- Optimum population** - where resources can be used to their best advantage without having too many people to maintain the standard of living
- Overpopulation** - too many people to be supported by the resources available
- Underpopulation** - too few people to make the most of the resources available
- Economically active** - people in the population who have jobs and pay tax
- Dependants** - those without jobs in the population that rely on the economically active
- Emigrant** - someone moving out of a country or region
- Migrant** - the person doing the moving
- Refugee** - a person who has been forced to leave their country in order to escape war, persecution, or natural disaster
- Immigrant** - someone moving into a country or region
- Rural-urban migration** - movement from the countryside to the city
- Counter-urbanisation** - when large numbers of people move from urban areas into surrounding countryside or rural areas
- Brain drain** - when highly qualified people move abroad for better job opportunities
- Economic migrants** - people who move for a job

### Global Population Growth:

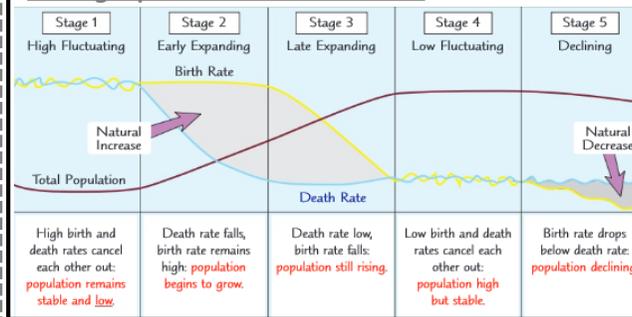
The highest rates of population growth are occurring in developing countries, such as Zimbabwe, Malawi and Niger. Some countries are experiencing population decline, for example Japan, Russia and Ukraine.

### Population Distribution:

- Large populations live in:
- River valleys** - sheltered, good transport, communication links and water supply
  - Lowland plains** - flat, fertile soil
  - Natural resources** - sources of material
  - Coastal plain** - moderate climate, trade

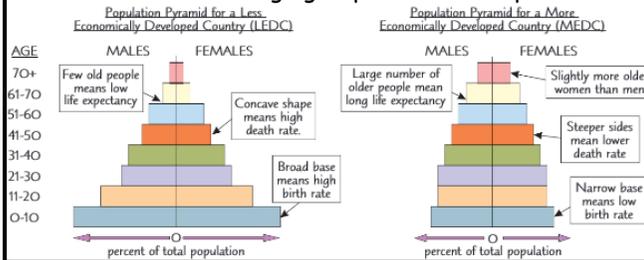


### Demographic Transition Model:



### Population Structure & Pyramids:

Population structure is the number of males and females in different age groups. 2 basic shapes:



### Migration:



#### PUSH FACTORS:

- Unemployment
- Lower wages
- Crop failure
- Poor health & education
- Natural disasters
- Civil war
- Poor living conditions

#### PULL FACTORS:

- More jobs
- Higher wages
- Crop failure
- Better health & education
- Better facilities
- Better living conditions

### Urbanisation Causes:

Urbanisation is the growth in the number of people in an urban area due to: **rural-urban migration and natural increase**

### Urbanisation Problems:

- Shortage of good quality housing
- Run down CBDs
- Traffic congestion and pollution
- Ethnic segregation

### Urban Areas:



- Improve public transport (bus priority lanes) and increase car park charges
- Pedestrianisation of central areas

### Questions:

1. Explain why large populations are often found in river valleys, lowland plains, and coastal plains.
2. What is shown by the Demographic Transition Model? What stage do you think India is at? Justify your ideas.
3. Write a paragraph (30-50 words) describing and explaining the differences in the population structure of a typical developing and developed country.
4. Explain the term rural-urban migration, and explain at least THREE reasons why this might occur in the UK and in India.
- 5 and 6. Air and water pollution can be caused by rapid urbanisation. Give TWO effects of both.

$$\text{Population Density} = \frac{\text{Number of People}}{\text{Area}}$$



This term we will look in more depth at the consequences and solutions to urban growth, as well as the classification of industry.

### Keywords:

- Squatter settlements** - settlements that are built illegally, in and around the city, usually on marginal land.
- Acid rain** - rainfall made acidic by atmospheric pollution
- Eutrophication** - excessive nutrients in a lake due to run-off from the land, which causes a dense growth of plant life, and a reduction of oxygen available for fish
- Quarries** - a large, deep pit, from which stone or other materials are or have been extracted.
- Nuclear Power** - the use of nuclear reactions that release nuclear energy to generate heat
- Biogas** - produced by the fermentation of organic matter
- Fuelwood** - wood burnt for heat/fuel
- Solar Power** - solar panels collect energy from the Sun to create electricity
- Wind Energy** - wind turns turbines to create electricity
- Geothermal** - volcanic activity can be used for heating water and the steam produced can be used to power generators and create electricity
- Tidal Power** - hydropower that converts the energy obtained from tides into electricity
- Hydroelectric Power (HEP)** - moving water helps create electricity by turning turbines under the sea as the tide moves in and out, or by using water stored in a dam.

### Environmental Problems:

Poorer countries struggle to dispose of waste

#### Air pollution

- Air pollution can lead to acid rain, which damages buildings and vegetation.
- It can cause health problems like headaches and bronchitis.
- Some pollutants destroy the ozone layer, which protects us from the sun's harmful rays.

#### Water pollution

- Water pollution kills fish and other aquatic animals, which disrupts food chains.
- Harmful chemicals can build up in the food chain and poison humans who eat fish from the polluted water.
- Contamination of water supplies with sewage can spread diseases like typhoid.

### Squatter Settlements:



#### SOLUTIONS:

- Self-help - government and locals work together to make improvements
- Site and service - people can borrow money to build/improve their homes, and rent is taken to improve services in the area
- Local authority schemes - funded by local government to improve temporary housing

### Sectors of Industry:



**Primary** - involves raw materials e.g. mining, agriculture, or forestry



**Secondary** - involves the manufacture of a product from primary industry



**Tertiary industry** - involves a range of services e.g. teaching, nursing and retail

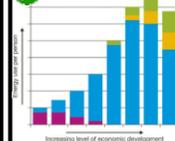


**Quaternary industry** - involves research and development that usually used high levels of technology

### The Three Gorges Dam:

The **Yangtze River** is the longest river in Asia and the third longest river in the world. In 1931, 145,000 people drowned in floods. In 1998, more flooding of caused over 3,700 deaths and 15 million people to lose their homes.

- ✓ Yangtze River floods controlled, saving lives and homes
- ✓ Source of renewable power, replacing coal
- ✓ Ships can now travel further inland
- ✓ Tourist attraction



- ✗ Loss of fish/extinction of the river dolphin
- ✗ Relocation of 1.3 million
- ✗ May be triggering landslides, endangering millions of people
- ✗ Rise in water born disease from polluted water

**Energy security** means having access to reliable and affordable sources of energy. Countries with access to enough energy are **energy secure**, whilst those without enough are **energy insecure**.

**Sustainable use of resources** means using resources in a way that lets people living now have the things they need, but without reducing the ability of people in the future to meet their needs.

- Resource conservation:** using resources carefully to slow our consumption of raw materials (oil/gas)
- Resource Substitution:** changing resources for more sustainable ones
- Pollution Control:** limiting pollution to reduce global warming & acid rain
- Recycling:** used to reduce the amount of waste produces



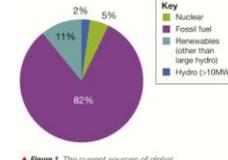
### One Child Policy:



- 1950:** growth rate in China was 1.9% & population was only **540 million** so the government encouraged large families to increase the workforce.
- By 1970** growth was unsustainable, and the population was **830 million**; China suffered famine
- 1979** China introduced the One Child Policy - benefits like **longer maternity leave, better housing, free education** offered.
- ✓ Fertility rate dropped from **2.9** in 1979 to **1.8** in 2009
- ✗ In 2000, **90%** of all aborted foetuses in China were female

### Questions:

- Define 'squatter settlement' and explain why life might be difficult and dangerous for people who live there.
- Explain how a 'site service scheme' helps improve squatter settlements.
- Write a paragraph (30-50 words) describing and explaining the differences between renewable and non-renewable energy sources.
- Explain two advantages and disadvantages of the One Child Policy in China.
- Why might the Three Gorges Dam not be considered a success in China. Justify your answer using specific data points to back up your ideas.



▲ Figure 1 The current sources of global energy supplies.



This term we will look at the difference between weather and climate and how we can both measure and show weather events on charts.

### Keywords:

**Weather** - describes the day-to-day conditions of the atmosphere.

**Climate** - describes average weather conditions over longer periods and over large areas.

**Hydrological Cycle** - Also called the water cycle. It is called a cycle because water continuously moves around the system.

**Precipitation** - any water that falls from the sky. Precipitation can be rain, snow, hail or sleet.

**Infiltration** - When a liquid soaks into the ground

**Permeable/Impermeable** - A substance that fluids are/are not able to pass through

**Groundwater** - Where water is stored in rocks beneath the ground

**Through Flow** - When rainfall or water flows through the land

**Saturated** - Unable to contain any more liquid.

**Surface Run-off** - When water flows across the ground

**Interception** - To interrupt the movement of something, e.g. when water is intercepted by the leaves of trees when it rains

**Transpiration** - Water vapour from plants/leaves

**Evapotranspiration** - Total amount of water lost from the surface of the planet, by transpiration and evaporation

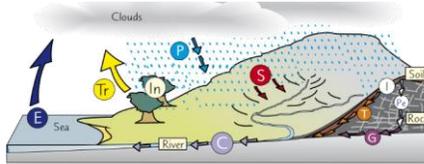
**Evaporation** - The process in which a liquid turns into a gas

**Condensation** - A change of state in which a gas becomes a liquid by cooling.

**Altitude** - The height above sea level

### Hydrological Cycle:

Water is recycled again and again through the process of **evaporation**, **condensation** and water transfers such as **surface run-off**.



- P Precipitation
- In Interception
- Tr Transpiration
- S Surface Run-off
- C Channel flow
- E Evaporation
- I Infiltration
- T Through flow
- P<sub>2</sub> Percolation
- G Groundwater flow

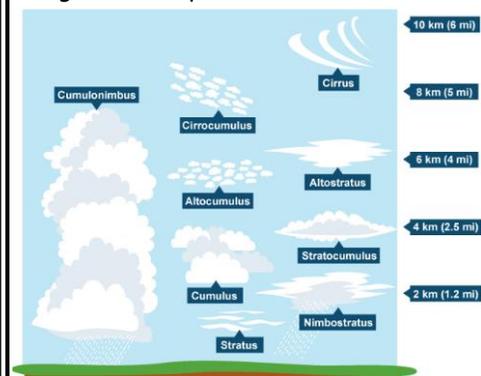
- Energy from the Sun heats the surface of the Earth.
- Water is **evaporated** from oceans, rivers, lakes, etc.
- The warm, moist air **rises** because it is **less dense**.
- **Condensation** occurs when **water vapour** is turned back into water droplets as it cools down. **Clouds** are formed.
- **Precipitation** occurs as water droplets get bigger and heavier.

### Climate Graphs:

Climate graphs are a combination of a bar graph (rainfall) and a line graph (temperature).

### Clouds:

Clouds are categorised according to height and shape.



**Stratus** clouds are layered, low, grey and shapeless and usually are like a blanket of cloud.

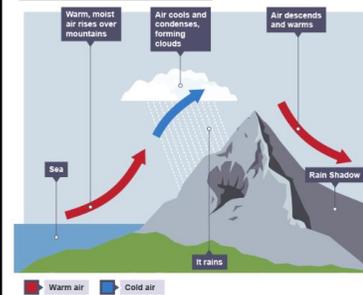
**Cumulus** clouds are white and fluffy.

**Cumulonimbus** clouds are much deeper clouds that climb high into the atmosphere. They often contain a lot of heavy rain and are associated with thunder and lightning storms.

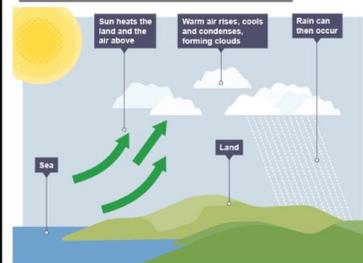
**Cirrus** clouds are very high clouds that are wispy and made up from ice crystals.

**Cloud cover** is observed in units called **oktas**.

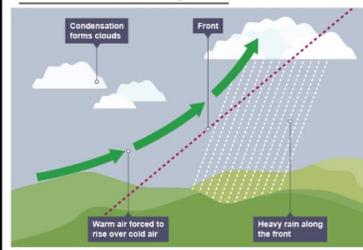
### Relief Rainfall:



### Convective Rainfall:



### Frontal Rainfall:



### Questions:

- Using all of the keywords listed above, explain how water vapour is transferred around the hydrological cycle. This should be at least 50-75 words.
- Why might Britain experience a higher percentage of frontal rainfall than convective rainfall? Explain your ideas using a PEE paragraph.
- True or false: clouds form when water vapour evaporates. Explain your answer.
- What do satellite images show? How might this help weather forecasters do their job?
- The lines showing air pressure on a map are usually roughly a circle. Describe the difference between a high and low pressure system on a weather map.





This term we will look at how changes in atmospheric pressure can lead to climatic hazards like hurricanes, and their resulting impacts.

### Keywords:

**Abiotic** - non-living part of a biome, includes the atmosphere, water, rock and soil

**Altitude** - the height of the land

**Anticyclone** - a weather system with high barometric pressure at its centre, around which air slowly circulates in a clockwise (northern hemisphere) or anticlockwise (southern hemisphere) direction. Anticyclones are associated with calm, fine weather.

**Biome** - a large-scale ecosystem, e.g. tropical rainforest

**Biotic** - living part of a biome, made up of plant (flora) and animal (fauna) life

**Depression** - an area of low pressure which moves from west to east in the northern hemisphere. Low pressure systems can be identified from a synoptic chart due to: cold fronts

**Ecosystem** - a localized biome made up of living things and their non-living environment. For example a pond, a forest, a desert

**Flora & Fauna** - plants & animals

**Hurricane** - a type of storm called a tropical cyclone, which forms over tropical or subtropical waters

**Isobar** - a line on a map connecting points having the same atmospheric pressure

**Isotherm** - a line on a map connecting points having the same temperature

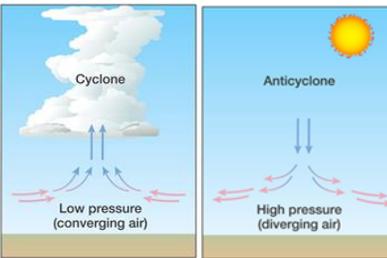
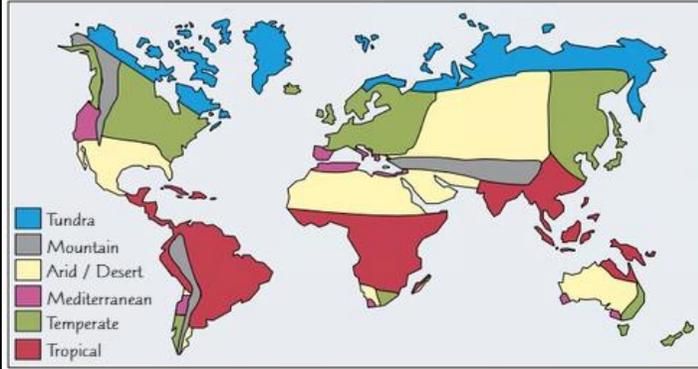
**Saffir-Simpson Scale** - a scale that classifies hurricanes into five different categories according to their wind strength

**Tropical Cyclone** - an area of low pressure with winds moving in a spiral around a calm central point called the eye of the storm - winds are powerful and rainfall is heavy

**Typhoon** - term given to a tropical cyclone in the western North Pacific

### Climate Zones:

The world's climate zones are based on maximum and minimum temperatures and the temperature range, as well as total and seasonal distribution of precipitation.

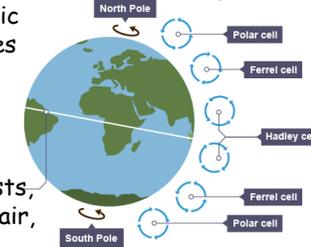


### Hurricane Katrina:

Magnitude: Category 3  
Location: South east USA  
Date: 29<sup>th</sup> August, 2005

### Air Pressure and Circulation:

Air rises at the equator, leading to low pressure and rainfall. When the air reaches the edge of the atmosphere, it cannot go any further and so it travels to the north and south. The air becomes cold and falls to create high pressure and dry conditions at around 30° north and south of the equator. Global atmospheric circulation creates winds across the planet and leads to areas of high rainfall, like the tropical rainforests, and areas of dry air, like deserts



### Formation of Tropical Storms:

1. Tropical storms form between approximately 5° and 30° latitude.
2. The air above the warm ocean is heated. Once the ocean water reaches at least 26.5°C, the warm air rises quickly, causing an area of very low pressure.
3. As the air continues to rise quickly it draws more warm moist air up from above the ocean leading to strong winds.
4. The rapidly rising warm air spirals upwards, cools, condenses and large cumulonimbus clouds form.
5. These clouds form the eye wall of the storm and produce heavy rainfall.
6. In the centre of the storm, cold air sinks forming the eye of the storm - here, conditions are calm and dry.

### Questions:

1. Describe and explain the climate in all climate zones shown in the map above This should be at least 200 words.
2. Why might countries along the equator experience a higher percentage of convectional rainfall than convectional rainfall? Explain your ideas using a PEE paragraph.
3. True or false: high pressure locations experience only clear and calm weather. Explain your answer.
4. Explain, in detail, the formation of a tropical cyclone. This should be at least a paragraph.
- 5 Describe and explain the main social, economic and environmental impacts of Hurricane Katrina. Suggest ideas as to why this was such a devastating storm.



This term we will look at how humans can use the resources of our planet sustainably.

### Keywords:

**Ecosystem services** - collective term for all of the ways humans benefit from ecosystems

**Indigenous peoples** - the original people of a region. Some groups still have traditional lifestyles e.g. A tribal system; hunting for food

**Slash and burn**- farmers clear small areas of forest by cutting and burning the trees (ash from the burning adds nutrients to the soil; forest grows back over time)

**Biotic** - living part of a biome made up of plants (Flora) and animal (Fauna) life

**Abiotic** - non-living part of a biome that includes the atmosphere, water, rock and soil

**Biodiversity** - the number of different plants and animals in a certain area

### The Biosphere:

The **biosphere** provides humans with some of our most essential resources: the food we eat and many of our medicines, building materials and sources of fuel. They are both globally and locally important.

### Local Factors that affect Biomes:

**ROCK & SOIL TYPE** → rocks release nutrients when they undergo a chemical change

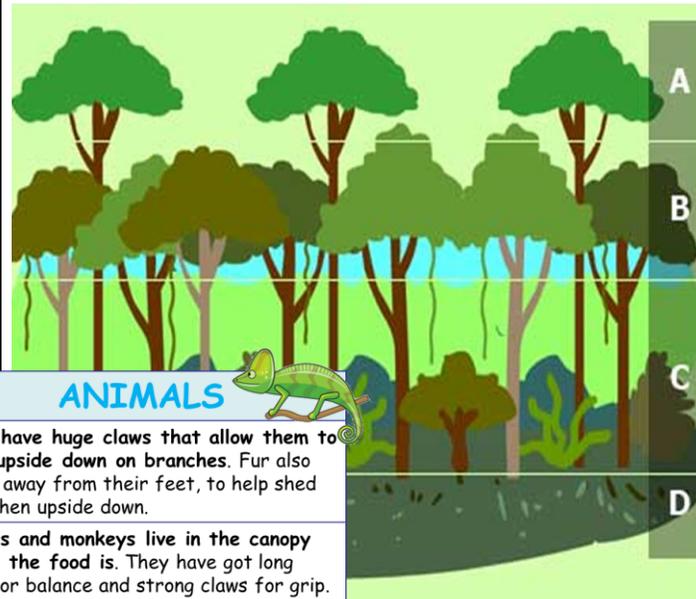
**WATER AVAILABILITY** → different plants require different levels of water

**ALTITUDE** → temperature drops by 6.5°C for every 1000m increase in height

### Tropical Rainforests

10% of the world's plant and animal species live in the Amazon rainforest. They are **ADAPTED** to the equatorial climate: There is no dry season, with at least 60mm of rainfall each month - some places get 3m of rainfall each year. Temperatures are high, at 26-32°C all year round, so there is no summer or winter.

Structure of the Rainforest:



#### The Emergent Layer (A):

This layer is very sunny because it is the very top and only the tallest trees reach this level. It is also known as the **OVERSTORY**. Animals found in this layer include birds, butterflies, small monkeys and bugs.

#### The Canopy Layer (B):

This is the thickest layer and much of the rain is stopped by the thick foliage. Most trees in the forest grow to this height. There are plants that grow in the canopy layer whose roots don't reach the ground.

#### The Understory (C):

This layer has many vines, dense vegetation but not much sunlight as it is all blocked by the canopy. Animals found in this layer include birds, butterflies, frogs and snakes.

#### The Forest Floor (D):

This layer is dark, damp, full of many dead leaves, twigs and dead plants. The forest floor is dark due to the trees above stopping the sunlight from entering the forest. It is estimated that only 2% of the sunlight actually reaches the floor. Animals found in this layer include jaguars in South America, gorillas, leopards in Africa, tapirs, tigers and elephants in Asia.

### Plant & Animal Adaptations:

#### PLANTS

The dense forest canopy blocks out light. Some trees called **EMERGENTS**, grow 40m tall, 10m above the **CANOPY**

Mould grows on all wet surfaces. This would block sunlight from leaves. Most plants have evolved **DRIP TIPS** that channel water of the leaf

Nutrients are concentrated in only the top layer of the soil. This means tree roots have to be shallow. **BUTTRESS ROOTS** give the tall trees extra stability.

#### ANIMALS

Slots have huge claws that allow them to hang upside down on branches. Fur also grows away from their feet, to help shed rain when upside down.

Lemurs and monkeys live in the canopy where the food is. They have got long tails for balance and strong claws for grip.

Jaguars have camouflaged fur (dark and light patches) that help it blend in with the shade of the forest floor

### Nutrient Cycle in Rainforests:

The rainforest nutrient cycling is rapid. The hot, damp conditions on the forest floor allow for the rapid **DECOMPOSITION** of dead plant material

### Questions:

1. Explain one way in which climate influences the distribution of a major biome.
2. Explain the term 'altitudinal zonation'
3. Study the image of the Athabasca Oil Sands mine on the right. Explain the impacts of this mining on the biosphere services for local people.
4. Explain, in detail, how **ONE** plant or animal is adapted to the rainforest biome. This should be at least a paragraph.
- 5 Describe and explain the main social, economic and environmental impacts of deforestation in the rainforest biome.





This term we will look at how humans can use the resources of our planet sustainably.

### Keywords:

**Decomposition** - the process of rotting; decay

**Decay** - rot or decompose through the action of bacteria and fungi

**Boreal forest** - another name for the taiga biome

**Climate graph** - shows both precipitation AND temperature

**Biodiversity** - the number of different plants and animal species in an area

**Adaptation** - the process of change by which an organism or species becomes better suited to its environment

**Net primary productivity (npp)** - a measure of how much new plant and animal growth (**Biomass**) is added to the biome each year, measured in grams per square metre per year

**Logging** - cutting down trees

### Life Support System:

The **biosphere** provides humans with some of our most essential resources: the food we eat and many of our medicines, building materials and sources of fuel. They are both **globally** and **locally** important.



### Population Pressure:

Our population is increasing. This puts lots of pressure on our resources - there are **TWO** opposing views of how this will affect us:

- **The Malthusian View** - Population will eventually grow so large that the planet will run out of food, water, energy and other resources, leading to a crisis. [by **Thomas Malthus: PESSIMISTIC**]
- **The Boserupian View** - As population grows, human invent new technologies to allow more food to be grown, and more resources to be supplied. [by **Ester Boserup: OPTIMISTIC**]

### Direct and Indirect Threats to the Rainforest:

7.3 million hectares of rainforest are **deforested** every year - that's 36 football fields a minute.

Causes of this include:

- Agricultural - this can be **subsistence** or **commercial**
- Commercial hardwood **logging**
- Biofuels
- Mining
- **Fuelwood**

These are **DIRECT** threats

#### REDD

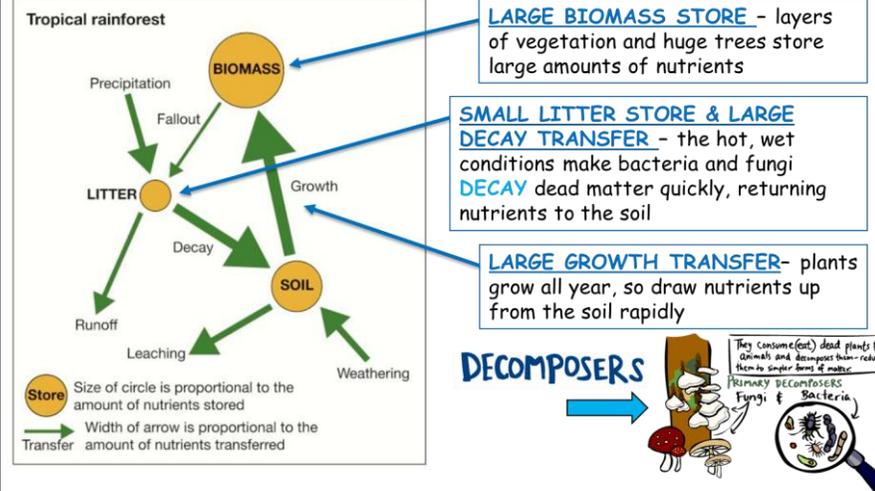
- ✓ REDD stands for Reducing Emissions from Deforestation and Forest Degradation.
- ✓ REDD supports schemes that reduce the rate of deforestation.
- ✓ The United Nations monitors the schemes by the use of remote sensing and visits.

Climate change however, is an **INDIRECT** threat

- Tropical rainforests could become drier and hotter - the plants here are adapted to live in constant temperature conditions: they cannot tolerate heat spikes, so could become extinct
- Tropical rainforest plants are not able to tolerate a long drought: it kills some and stresses the survivors
- Drier forests are at risk of forest fires

### Nutrient Cycle in Rainforests:

- The rainforest nutrient cycling is rapid. The hot, damp conditions on the forest floor allow for the rapid **decomposition** of dead plant material.
- This provides plentiful nutrients that are easily absorbed by plant roots.
- However, as these nutrients are in high demand from the rainforest's many fast-growing plants, they do not remain in the soil for long and stay close to the surface of the soil.
- If vegetation is removed, the soils quickly become infertile and vulnerable to erosion



### Questions:

1. Explain how urbanisation increases demand for water resources.
2. Explain **THREE** resources that can be obtained from the biosphere.
3. Explain the difference between direct and indirect threats to the rainforest.
4. Describe how ecotourism, forestry and sustainable agriculture can help to protect the remaining tropical rainforest areas from deforestation.



### Keywords:

**Segregation**-the action or state of setting someone or something apart from others.

### Emancipation

**Proclamation**-which declared that as of January 1, 1863, all slaves in the states currently engaged in rebellion against the Union "shall be then, thenceforward, and forever free."

**Reconstruction**-the period 1865-77 following the American Civil War, during which the southern states of the Confederacy were controlled by federal government and social legislation, including the granting of new rights to black people, was introduced.

**Legislation**- the process of making or enacting laws.  
**Constitution**- a body of fundamental principles that a country has to rule by.

**Migration**- Human migration is the movement of people from one place to another with the intentions of settling, permanently or temporarily, at a new location.

**Jim crow laws**- Were state and local laws that enforced racial segregation in the Southern United States.

### Key knowledge:

The comparative study between the Civil rights movement in the 1950s and the issues faced by Black British Migrants in 1940s and 1950s. The British empire originated with the overseas possessions and trading posts that were established by England between the 16th and the 18th early century. By 1912, the British Empire had over 412 million subjects, and controlled 24% of the world's total land area. As a result, its political, legal, language and cultural legacy is widespread. At its height, it was the biggest global power, and it was claimed that "the sun never set[s] on the British empire." This was used to describe the empire as its size and influence around the globe meant that the sun was always shining on at least one of its territories. The Civil War abolished slavery, but it did not end discrimination. African Americans, along with help from many white colleagues, mobilized and began an exceptional journey for equality. Here are the major boycotts, movements and marches instrumental in bringing social change during the civil rights movement.



### Key dates:

1865- end of civil war  
1948- Windrush  
1954- brown vs the board of education  
1957-Little rock 9  
1958- race relations act  
Notting hill riots.  
1964- Civil Rights Act.  
The New Cross house fire- 1981

### Key

### Individuals:

Malcom x  
Martin Luther King  
Rosa parks  
Claudia Jones  
Emmett Till  
Teddy boys  
The Stephen Lawrence Inquiry  
Black Panthers  
Black British Panthers  
Angela Davis

### I can:

1. Explain the Jim crow laws were abolished?
2. Evaluate the most important reason why the Jim crow laws were abolished.
3. Evaluate the usefulness of primary sources in understanding the impact of the media on the civil rights movement.
4. Explain the reasons why the Windrush generation struggled to settle in Britain
5. Explain one way the Civil rights movement mimicked the experiences of the generation Windrush?

### Prove it:

- 1.) The main reasons why the Jim crow laws were abolished were....
- 2) Decide what was the most important reason why the Jim crow laws were abolished...  
**80%: The most important impact was..... I think this because**
- 3) **This source is useful to a historian studying the impact of the media on the civil rights movement because( provenance) from my own outside knowledge I know...**
- 4) **The Main reasons why the Windrush generation struggled was...**
- 5) 30%: One way in which the Windrush generation experiences were similar to the civil rights movement was...

### Questions:

- What was life like for black people in America & Britain in the early 20th century?
- How different was life for black people in Britain and America in the early 20th century?
- How important was the contribution of black soldiers to allied victory in WW2
- Was WW2 turning point in the American Civil Rights movement?
- How significant was the journey of HMS Windrush?
- How did the Civil Rights movement impact social change in the 1950s?
- Which civil rights leader was the most significant?
- What can the bus boycotts in Montgomery and Bristol tell us about life for black people at this time?
- How important have legal changes been in promoting civil rights?
- How significant was the 1964 Civil Rights Act?
- What were the consequences of Brown Vs the Board of Education?
- What are the consequences of police brutality?
- Has equal rights been achieved?



# St Joseph's College History Department

## Autumn Term 2 Y9 KS3 The Cold War

The cold War: A period of great social, political and global tension.



- Keywords:**  
 Cold War  
 Capitalism  
 Communism  
 Proxy War  
 Domino  
 Theory  
 Clash of cultures  
 Truman  
 Doctrine  
 Marshall  
 Plan  
 Pay of Pigs  
 CIA  
 Spy  
 Arms Race  
 Space Race  
 Containment  
 Détente  
 M. A. D.  
 Hydrogen  
 bombs  
 Atomic  
 bombs  
 Glasnost  
 Perestroika  
 Iron Curtain  
 Berlin Wall  
 Postdam  
 Conference  
 Yalta  
 Conference

### Key knowledge:

The end of WW2 left Russia devastated, Britain devastated and USA as the only allied country left with any strength  
 Truman hated Stalin and wanted to help rebuild Europe and "roll back" Communism so it didn't spread.  
 He said "only countries that are not communist" Truman Doctrine  
 Marshall Plan let countries apply for support. USA lent 17 billion in 1947 to help rebuild the continent.  
 Berlin Wall build in 1961 separating East/ West Berlin (left West Berlin as an island of freedom in a sea of communism)  
 Berlin wall came to represent the struggle between Capitalism and Communism and USA vs Russia  
 Arms race as each country tries to acquire more nuclear weapons than the other country, leads to M.A.D. Mutually assured destruction - if one country shoots they both will be destroyed.  
 Tensions between them gives birth to the Space Race as Kenney said, we will put a man on the moon by the end of the decade (1969 it happened) Russia put the first man in space (Yuri Gagarin) and the first satellite in space (Sputnik)  
 This period gives rise to spies and the goal to get ahead of the other country by stealing/ selling information  
 Proxy wars in Vietnam, Korea, Afghanistan most notably  
 How was this lead to the current state of nuclear power and stockpiles today. Do we still need these weapons?



### Key Individuals:

- John F. Kennedy
- Harry Truman
- Ronald Reagan
- Jimmy Carter
- Josef Stalin
- Mikail Gorbachev
- Nakita Khrushchev
- Boris Yeltsin
- Leonid Brezhnev
- Fidel Castro

### I can:

1. Evaluate the impact the Second World War had on Europe. USA and Russia
2. Evaluate the most important reason why USA and Russia disliked each other.
3. Evaluate the different interpretations of Cold War actions
4. Evaluate the different interpretations on US leaders vs USSR leaders
5. To make valid inferences from primary resources on Cold War history

### Prove it:

- 1.) Decide which cause(s) was/were the most important
  - 2) *The most important cause of the Cold War was..... I think this because....*
  - 3) The most reason important reason why Truman was so harsh on Russia was... This is because
  - 4) *Write at least one reason historians have different interpretations on the reasons why America got involved in proxy wars.*
  - 5) *Explain which interpretation on Fidel Castro is most useful*
  - 6) I can infer this picture that..... this details shows that..... I know that around this time.....
- Understanding Provenance:** Origins of primary sources  
 P- purpose  
 A- author  
 N- nature  
 D- Date  
 A- audience

### Questions:

- Was the Cold War the closest humans have ever come to destroying themselves?
- What might have happened if the Berlin Airlift did not work?
- Why did the Berlin Wall finally come down?
- Why has Eastern Europe been plagued by war since 1989?
- Why does Afghanistan dislike America so much if they were allies in 1989?
- How has Vietnam changed since 1975?
- Why is the current situation between USA and N. Korea so strained?

### Key dates:

- 1945 USA drops A bombs
- 1949 USSR detonates a-bomb
- 1955 Warsaw Pact
- 1957 Sputnik
- 1962 Cuban Missile Crisis
- 1965 Golf of Tonkin
- 1987 INF Signed



# St Joseph's College History Department

## Spring Term 3 Y9 KS3 The Vietnam War

The Vietnam War: A war America doesn't want to remember.



- Keywords:**
- Proxy War
  - Gulf of Tonkin
  - Dien Bien Phu
  - Arc Light
  - Rolling Thunder
  - Executive Action
  - Air Cavalry
  - Military Machine
  - Politician
  - NVA
  - Vietcong (VC)
  - ARVN
  - "Charlie"
  - Search and Destroy
  - Counting Bodies
  - Booby traps
  - Guerrilla Warfare
  - Psychological Warfare
  - Jungle LRRP
  - Tunnel Rats
  - Saigon Sally
  - Draft
  - Agent Orange
  - TET Offensive

### Key knowledge:

Vietnam has defended itself several times, China, French, British and now USA  
 Ho Chi Minh nationalist leader, educated in France, spoke English and knew of western military tactics  
 USA send troops and money to train south Vietnamese soldiers to fight Ho Chi Minh in the north  
 US president Johnson says "we must contain communism at its present boarders" and if we fail the rest of SE Asia will fall to communism - Domino Theory  
 US starts sending troops and opening engaging in fighting  
 Vietcong (VC) use jungle warfare guerilla tactics to hit and run and hide from all of the bombs and planes and artillery of the US military.  
 Use booby traps to wound and psychologically devastate the US soldiers, you never knew where the enemy was  
 First televised war for Americans back home. Traumatic and protests broke out alongside social protests in the 60's  
 Politicians were telling the American people the war is being won but in 1968 the VC launch the TET Offensive which they attacked targets all over Vietnam and showed that the US was not winning  
 The US loses and pulls out troops by 1975  
 Vietnam becomes a communist country but only Laos and Cambodia turned to communism, no other dominos fall



### Key Individuals:

- John F. Kennedy
- Lyndon Johnson
- Jimmy Carter
- Fidel Castro
- Ho Chi Minh
- Ngo Dinh Diem
- Thic Quang Duc
- General Westmoreland
- Hal Moore
- Nguyen Hu An

### I can:

1. Evaluate the impact the Vietnam War on USA and Russia in relation to the Cold War
2. Evaluate the most important reason why USA got involved in Vietnam
3. Evaluate the different interpretations of Cold War actions
4. Evaluate the different interpretations on US leaders vs USSR military tactics in Vietnam
5. To make valid inferences from primary resources on the Vietnam War

### Prove it:

- 1.)Decide which cause(s) was/were the most important
- 2) *The most important cause of the Vietnam War was..... I think this because...*
- 3) The most reason important reason why Ho Chi Minh resisted the west was... This is because
- 4) *Write at least one reason historians have different interpretations on the reasons why America got involved in proxy wars.*
- 5) *Explain which interpretation on JFK's assassination is most useful*
- 6) I can infer this picture that..... this details shows that..... I know that around this time.....

### Questions:

- Was the USS Maddux actually attacked?
- What happened with the Domino Theory?
- Why does America have such a poor memory for the Vietnam War?
- Why did the ARVN and VC defeat America?
- What is the legacy of the Vietnam war for Vietnamese people? USA? The world?
- Why did the US get involved in Vietnam?

### Key dates:

- 1954 Dien Bien Phu
- 1960 NLF formed
- 1964 Golf of Tonkin
- 1965 Rolling Thunder
- 1968 Khe Sanh
- 1968 TET Offensive
- 1969 Ho Chi Minh dies
- 1975 Saigon falls to ARVN



**Keywords:**  
 Jihad  
 Mujahideen  
 Insurgents  
 United Nations  
 Refugees  
 Guerrilla tactics  
 Quagmire  
 Puppet Regime  
 Hardline  
 East VS West  
 Taliban  
 Stalemate  
 Marxism  
 PDPA  
 Topography  
 Brezhnev  
 Doctrine  
 Withdrawal  
 Ceasefire

#### Key knowledge:

Russia gives millions in aid to Afghanistan's because people are rebelling because it is a puppet Soviet leader Taraki Taraki dies and Amin takes over and has meetings with USA to kick out the Soviets, Russia invades to stop this. USA gives money, supplies and military weapons to the Mujahideen to fight the Soviets. USSR rolls in with tanks and seizes Kabul and other key military locations, they assassinate Amin and put a "pro-soviet" leader in place, Babrak Kamal. Mujahideen resistance grows with support from USA, Saudi Arabia and Pakistan organize and carry out guerilla hits on Soviet forces. New Russian leader Mikhail Gorbachov wants to end the war USA supplies Mujahideen with stinger missiles to shoot down Soviet helicopter gunships. Peace talks begin in 1988. Last Soviet troops leave in 1989.



#### Key Individuals:

Leonid Brezhnev  
 Jimmy Carter  
 Osama bin Laden  
 Nur Mohammed Taraki  
 Hafizullah Amin

#### I can:

1. Evaluate the impact the Afghan war on relationships between countries today.
2. Evaluate the most important reason why USSR got involved in Afghanistan
3. Evaluate the different interpretations of actions made by leaders during the Afghan war
4. Evaluate the different interpretations of the long term consequences of the Afghan war
5. To make valid inferences from primary resources on the Afghan war

#### Prove it:

- 1.) Decide which cause(s) was/were the most important
- 2) *The most important cause of the Afghan War was..... I think this because....*
- 3) The most important reason why the Mujahideen resisted the west was... This is because
- 4) *Write at least one reason historians have different interpretations on the reasons why the USSR got involved in proxy wars.*
- 5) *Explain which interpretation on America's involvement is most useful to historians today*
- 6) I can infer this picture that..... this details shows that..... I know that around this time.....

#### Questions:

Why was the Marxist gov't unpopular with Muslims?  
 Explain how the USSR became involved in Afghanistan.  
 What were the obstacles that made the war unwinnable for the USSR?  
 How did it end?  
 What were the impacts on USSR? Afghanistan?  
 If the US supported Muslim fighters how did Afghanistan come to hate America?  
 How did this lead to 9/11?

#### Key dates:

1979 USSR funds Afghan  
 1979 Mujahideen form  
 1980 US funds Mujahideen  
 1982 UN calls for Soviet withdrawal  
 1986 US give Mujahideen stinger missiles  
 1988 Peace talks  
 1989 USSR leaves



### Keywords:

- Genocide
- Holocaust
- Racism
- Religious
- Prejudice
- Politics
- War
- Nationalism
- Namibia
- Bosnia
- Rwanda
- Armenia
- Germany
- Cambodia
- Omarska concentration camp.
- Herero
- Khmer Rouge government
- Welfare
- Tutsi
- Hutu

### Key knowledge:

During the 19<sup>th</sup> and 20<sup>th</sup> centuries many mass genocides took place in various countries all over the world. Genocide is the attempt to kill or destroy a national, ethnical, racial or religious group. The genocides that we will look at in this unit took place in countries such as Cambodia, Bosnia, Armenia, Rwanda, Namibia and the German Holocaust. The term "genocide" did not exist before 1944. It is a very specific term, referring to violent crimes committed against groups with the intent to destroy the existence of the group.



### Key Individuals:

Slobodan Milosevic  
Otto von Bismarck

### I can:

1. Evaluate which reason you think is the most significant for why genocide occurs.
2. Evaluate each case study and state what factors cause a genocide in that country.
3. Evaluate the different interpretations of actions made by leaders during each genocide.
4. Evaluate the different interpretations of the long term consequences of a genocide.
5. To make valid inferences from primary resources on the different genocides.

### Prove it:

- 1.) List countries where different genocides have occurred.
  - 2) Genocides occur mainly due to political rather than religious reasons. To what extent do you agree?
  - 3) Write at least one reason historians have different interpretations on the reasons why genocides occur.
  - 4) Explain which interpretation on America's involvement is most useful to historians today
  - 5) I can infer this picture that..... this details shows that..... I know that around this time.....
  - 6) How far do you agree....
- Overall I agree / disagree with this statement because.....
- One reason many genocides occurred was of .....
- However, other significant reasons were ....
- On the other hand it could be argued.....
- In conclusion.....

### Questions:

1. Describe visually what happened during the Rwandan Genocide.
2. Explain what events led to the genocide in Rwanda.
3. Identify why a genocide occurred in Bosnia.
4. Explain the different features of a concentration camp in Nazi Germany.
5. List differences between Omarska concentration camp and Auschwitz

### Key dates:

1991- Yugoslavia Splits- Bosnia Genocide

1975-1979- Cambodian Genocide

1884- German Chancellor takes over West Africa- Namibian Genocide



Introduction to changes in crime and punishment in England.

### Keywords:

- Feudalism
- Wergild
- Blood Feuds
- Domesday Book
- Outlaws
- Shire Reeves
- Gaol
- Arson
- Retribution
- Rehabilitation
- Removal
- Restitution
- Tithe
- Trial by Ordeal
- Bloody Code
- Treason
- Hung, drawn and quartered
- Transportation
- Collective Responsibility
- Poaching
- Freemen
- Serfs
- Nobles
- Knights
- King
- Heresy
- Witchcraft
- Repent
- Recant
- Vagabound
- Deterrent
- Murdrum Fines

### Key knowledge:

Anglo-Saxon control was divided by various kingdoms ruled by a different king, each with different laws and rules

Wergild was a fine for committing a crime, Blood Feuds were allowed to be carried out as punishment

William becomes king in 1066 builds castles and installs Feudalism to organise society

People rebel William puts Murdrum Fines in place to punish those who kill Normans

Strict punishments for criminals, death, mutilation, fines and exile were all used

Church heavily controlled crime in Medieval England, controlled most of land, collected 10% of income from villagers called a "tithe", let god judge innocence through Trials by Ordeal

1500-1700 saw rise in crime so they created "Bloody Code" which laid out 225 crimes punishable by death

1644-48 Witch craze swept through SE England where single women, widows and poor beggars were killed

Late 1600 transportation was used to rid England of criminals by sending them to America or Australia to work off their sentence. Did not work, crime stayed constant and it became expensive.

Early prisons were secure rooms in mansions or castle dungeons, rich people could pay others to serve their time

Robert Peel sets up police force in 1829

Death penalty abolished in UK in 1965



### Key Individuals:

- William of Normandy
- Henry II
- Justice of Peace
- Elizabeth Fry
- Robert Peel
- John Howard
- Charles II
- Timothy Evans
- Derek Bentley
- Ruth Ellis

### I can:

1. Evaluate the impact early punishments had on crime
2. Evaluate the most important reasons why crime and punishment changed.
3. Evaluate the different interpretations of the role of the church in punishment.
4. Evaluate the different interpretations of the long-term consequences of Henry II reforms
5. Make valid inferences from primary sources

### Prove it:

- 1.)Decide which cause(s) was/were the most important
- 2) *The most important change in crime and punishment was..... I think this because....*
- 3) The most reason important reason why communities need to be involved with punishment is..... This is because
- 4) *Write at least one reason historians have different interpretations for the reasons why policing needed to be reformed.*
- 5) *Explain which interpretation about the change in the death penalty is most useful.*
- 6) I can infer this picture that..... this details shows that..... I know that around this time.....

### Questions:

- What is the goal of punishment?
- Why do people commit crimes?
- Has the jury system worked to judge innocence or guilt?
- What punishments are most effective in stopping crime?
- Do laws simply exist because governments know they are going to be broken?
- If prisoners need a way to stop committing crimes then why are they not given education in prisons?

### Key dates:

- 1066 William becomes king
- 1100 Henry II Reforms
- 1250 First Constables
- 1547 Vagrancy Act
- 1644 Witch Craze
- 1750 Bloody Code
- 1829 Met Police
- 1964 death penalty abolished,UK



This unit will enable learners to understand how to stay safe when using the internet.

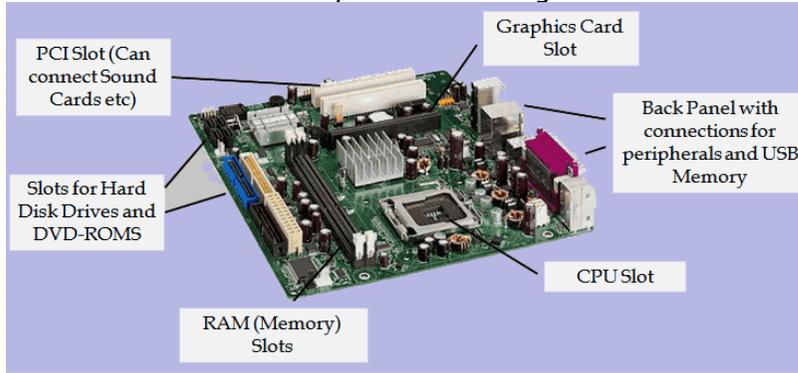
### Keywords:

**Computer system:** is a set of integrated devices that input, output, process, and store data and information

**Hardware:** is the physical components

**Software:** the programs that are run on computer hardware

**CPU:** Processes computer instructions/ brain of the computer



### Computer hardware:

- RAM = Short term memory
- Hard drive = Long term memory
- CPU = brain of computer - processes all instructions
- Motherboard = main circuit board where hardware is connected

### Software:

**Systems software:** run and maintain the computer system

e.g. Operating systems

**Utility software:** helps maintain or configure a computer

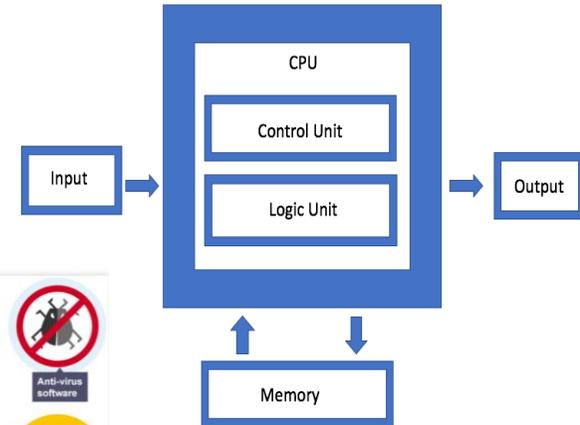


Step	Fetch execute cycle
1	PC has address of next instruction
2	PC copied to the MAR
3	Lookup MAR and get contents. Copy contents into the MDR
4	Copy MDR contents into the CIR
5	PC is then incremented by 1
6	The instruction is decoded and then executed

### CPU:

#### 3 Main parts

1. **Control unit (CU)** : this part controls the input and output devices
2. **Arithmetic unit (ALU)** : this is the part that does all the working out: it does all the maths and makes the decisions
3. **Cache** : Fast memory stored in CPU



### Questions:

1. What is the difference between RAM and hard drive?
2. Re write the steps for the fetch, execute and decode cycle in your own words
3. Name 3 different operating systems
4. Name 2 types of utility software
5. What is the difference between the CU and ALU?



This unit will enable learners to understand binary/hex conversion and how images and sound are used

### Keywords:

**Binary** = Computers operate in binary, meaning they store data and perform calculations using only zeros and ones

**Overflow** = when you have more than 8 in your binary number

**Hex** = describes a base-16 number system

**Lossy** = results in lost data and quality from the original version

**Lossless** = does not lose any data in the compression process



### Lossless vs Lossy compression

#### Lossy advantages and disadvantages

**Advantages:** Very small file sizes and lots of tools, plugins, and software support it.

**Disadvantages:** Quality degrades with higher ratio of compression. Can't get original back after compressing

#### Lossless advantages and disadvantages

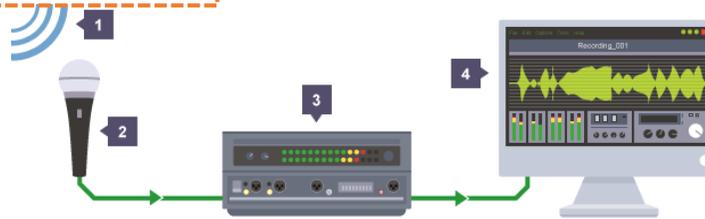
**Advantages:** No loss of quality, slight decreases in image file sizes.

**Disadvantages:** Larger files than if you were to use lossy compression.

### Digital audio quality

Factors that affect the quality of digital audio include:

- **sample rate** - the number of audio samples captured every second
- **bit depth** - the number of bits available for each clip
- **bit rate** - the number of bits used per second of audio



### Overflow

An example of an 8-bit overflow occurs in the binary sum  $11111111 + 1$  (denary:  $255 + 1$ ).

The total is a number bigger than 8 digits, and when this happens the **CPU drops the overflow digit** because the computer cannot store it anywhere, and the **computer thinks  $255 + 1 = 0$** .

Decimal	Binary	Hexadecimal
0	0000	0
1	0001	1
2	0010	2
3	0011	3
4	0100	4
5	0101	5
6	0110	6
7	0111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F

### Questions:

1. Explain the difference between lossy and lossless compression
2. Convert the decimal number 76 to hex
3. Convert the binary number 001001111 to hex
4. Explain overflow
5. What are 2 factors that would effect the quality of an audio



This unit will enable learners to understand the basics of python programming and develop their programming skills.

**Print** *Displays content on screen*

```
>>> print("Hello World")
Hello World
```

**Variables** *Place to store data in a program*

```
>>> text = "Hello"
>>> name = "Mia"
>>> print(text, name)
Hello Mia

>>> print(text, "your name is", name)
Hello your name is Mia
```

**input** *Allows user to enter data*

```
>>> name = input("What is your name? ")
What is your name? Daniel

>>> print(name)
Daniel
```

- Equals: `a == b`
- Not Equals: `a != b`
- Less than: `a < b`
- Less than or equal to: `a <= b`
- Greater than: `a > b`
- Greater than or equal to: `a >= b`



**Selection** *Gives a choice in programs*

```
if totalCost >= 20 :
    postage = 0
elif totalCost >= 10:
    postage = 1.5
else :
    postage = 2.95
```

Diagram labels: CONDITION, EXECUTED WHEN CONDITION IS TRUE, 2<sup>nd</sup> CONDITION (OPTIONAL), EXECUTED WHEN ALL CONDITIONS ARE FALSE

**Changing variable types (casting):**

- int() - integer – whole number
- float() –floating point (real) – decimal point
- str() - string – a series of characters (text)

*Example code turns variable into integer:*

```
age = int(age)
user_age = int(input("Enter your age: "))
```

`\n` creates a line return in a string

**Top Tips:**Download Python Idle at home  
Practise creating programs  
Google W3schools python

**Iteration: FOR loop** *Used to repeat things a certain number of times*

```
for x in range(6):
    print(x)
```

0  
1  
2  
3  
4  
5  
>>>

```
for x in range(4):
    print("Hello")
```

Hello  
Hello  
Hello  
Hello  
>>>

**Iteration: while loop** *Performs a task while a certain condition is TRUE*

```
while distance > 0 :
    print ("Are we there yet?")
    distance -= 1
```

Diagram labels: CONDITION, CODE TO LOOP IS INDENTED, CODE IS REPEATED WHILE CONDITION IS TRUE



This unit will enable learners to understand the basics of python programming and develop their programming skills.

Python -> English	
<code>print('hello!')</code>	Prints a value on screen (in this case, hello!)
<code>input('')</code>	Inputs a value into the computer.
<code>x=input('')</code>	Inputs a value and stores it into the variable x.
<code>x=int(input(''))</code>	Inputs a value into x, whilst also making it into an integer.
<code>print(str(x))</code>	Prints the variable x, but converts it into a string first.
<code>if name == "Fred":</code>	Decides whether the variable 'name' has a value which is equal to 'Fred'.
<code>else:</code>	The other option if the conditions for an if statement are not met (eg. name = 'Bob' when it should be Fred)
<code>elif name == "Tim"</code>	elif (short for else if) is for when the first if condition is not met, but you want to specify another option.
<code>#</code>	# is used to make comments in code – any line which starts with a # will be ignored when the program runs.

Key vocabulary	
<b>Python</b>	A high level programming language.
<b>Programming</b>	The process of writing computer programs.
<b>Code</b>	The instructions that a program uses.
<b>Sequence</b>	Parts of the code that run in order and the pathway of the program reads and runs very line in order.
<b>Selection</b>	Selects a pathways through the code based on whether a condition is true
<b>Iteration</b>	Code is repeated (looped), either <i>while</i> something is true or <i>for</i> a number of times
<b>Algorithm</b>	A set of rules/instructions to be followed by a computer system
<b>Variable</b>	A value that will change whilst the program is executed. (eg. temperature, speed)
<b>Comparative Operator</b>	When comparing data, an operator is used to solve the equality such as <>, != or ==
<b>Syntax</b>	The punctuation/way that code has to be written so that the computer can understand it. Each programming language has its own syntax.
<b>Data Type</b>	This indicates how the data will be stored. The most common data types are integer, string, and float/real.
<b>String</b>	A collection of letters, numbers or characters. (eg, Hello, WR10 1XA)
<b>Integer</b>	A whole number. (eg. 1, 189)
<b>Float/Real</b>	A decimal number, not a whole number. (eg. 3.14, -26.9)
<b>Boolean</b>	1 of 2 values. (eg. True, False, Yes, No)

### Questions:

1. What is **print** used for in python?
2. What is **input** used for in python?
3. Name two datatypes?
4. Name 3 programming constructs?
5. What is an algorithm?



This unit will enable learners to understand computational thinking and programming techniques

Keyword	Definition
Malware	A general term that describes lots of different programs that try to do something unwanted to your computer. Malware is made to stop your device from running properly and sometimes to steal your information.
Anti-malware software	Software is designed to find and stop <b>malware</b> from damaging your computer or a network. To protect your computer you need to install <b>anti-malware</b> software and run it
Phishing	Emails that try to trick someone into giving out information by providing a link to another website.
Blagging	<b>Blagging</b> or <b>pretexting</b> is the act of creating and using an invented scenario, to engage a targeted victim in a manner that increases the chance the victim will divulge information, or perform actions, that would be unlikely in ordinary circumstances.
Brute Force	A <b>brute force attack</b> uses trial-and-error to guess login info, encryption keys, or find a hidden web page. Hackers work through all possible combinations hoping to guess correctly.
Shouldering	The act of spying on a person (usually over their shoulder) when they are logging in to gain passwords or other security information for that person's accounts.
Social Engineering	<b>Social engineering</b> is the term used for a broad range of malicious activities accomplished through human interactions. It uses psychological manipulation to trick users into making security mistakes or giving away sensitive information..
Cyber Security	<b>Cyber security</b> is how individuals and organisations reduce the risk of <b>cyber</b> attack
Hacking	Accessing information not owned without permission of the owner

### Copyright and plagiarism:

**Copyright** © protects the rights of an author/creator of creative work. It means that someone else's work cannot be copied without permission.

**Plagiarism** is using someone else's creative work as if it is yours.

**Copyrighted material** online can be music, films or pictures. Sharing or downloading these illegally (without paying the owner of the copyright) is a copyright infringement. However, there are many sites, like amazon music or iTunes, where downloading music is legal because the owner has been paid.

### But what is the problem with downloading music?

It is estimated that the illegal downloading of films, TV programmes and music could mean the loss of 30,000 British jobs

### At home:

Check your security and privacy settings, are they secure? What can a stranger see on your social media? Could they recreate/copy your identity?

Check - Is your home work station damaging you back?

Cyber Security Challenges:  
[Key Stage 3 | Teachers |](#)  
[United Kingdom \(siemens.com\)](#)



### Data protection:

Knows your rights about your information. Certain companies and organisations are permitted to hold data on you but:



- The data must be accurate and up to date
- You have a right to see what data is held about you
- The data must be protected from unauthorised access

AND

- It can only be kept for as long it is relevant (the company can't keep your details forever)

### Passwords:

The most commonly used passwords are 'password' or 'Password1'.

Always include at least 1 uppercase letter, 1 lowercase letter, 1 number AND a special character:

**\*pa\$\$WorD\_2070**

Don't include personal information

Make it at least 8 characters long

**Weak passwords are one of the most common weaknesses exploited by hackers!**

### Questions

1. Write the definition of 'GDPR'
2. What are the 4 most commonly used email scams?
3. What does 'malware' mean?
4. Give two examples of malware
5. What is a hacker?
6. What is a common weakness hackers exploit?
7. How do you protect yourself from becoming a victim of cybercrime?
8. How do you protect your data online?

### Cybercrime:

Cybercrime, sometimes called computer crime, is a crime committed using the internet and any internet enabled device including smartphones

#### Cyber crime fact file

- Cyber crime makes more money for criminals than drug trafficking
- Around the world someone's identity is stolen online every 2 seconds
- It takes just 4 minutes from connecting to the internet for an unprotected device to become infected.

### Hackers:

A hacker is (as defined in the Computer Misuse Act, 1990) someone who looks at or modifies another users' data without permission.

#### Why do hackers hack?:

- For money
- For information
- For political reasons
- For revenge
- For the thrill of the challenge
- To cause chaos and mischief





### Malware is software that can harm devices

#### Malware:

Malware means **Malicious software**. Malware can be accidentally downloaded, usually as a virus via a vulnerability in the network or intentionally added by a hacker.



#### Logic bombs:

Used by disgruntled employees or blackmailers – executes a destructive sequence, set to detonate at a certain time.

#### Ransomware:

Denies access to the network or computers until a ransom is paid.

Famously the NHS was victim to a ransomware attack in 2017.



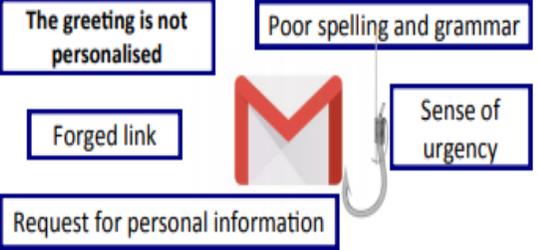
#### Other common types of malware:

**Browser**, also called spyware – hijacks browser functions, **File infector** – Infects a particular file and may overwrite or alter that file, **Macro virus** – can be embedded in templates and will spread to other computers if the file is shared.

Spam emails offer all kinds of things like money and prizes and can contain malware too.

Phishing emails are trying to trick someone into giving out information over email.

? What to look out for in a phishing email ?



The sender's address is often a variation on a genuine address

### Ways to reduce spam

Use a **spam FILTER**  
Do not give your email address out - if you don't trust the website or if supplying your email address is optional, don't give it to them.

Keep an eye out for tick boxes - when you sign up to a website, it might try to sign you up to its newsletter.

### Avoid becoming a victim of malware or email scams:

#### Malware

- Avoid clicking on everything e.g. offers that seem too good to be true
- Don't visit illegal sites, such as those that let you download copyright material
- Make sure your browser is configured to always ask before running files and downloading automatically
- Keep your browser software up-to-date

#### Email scams

- Use a SPAM Filter to prevent common scams ever reaching your
- Be suspicious if you aren't completely certain it's genuine. NEVER click any links or download attachments.

### Hacker and Ethical Hackers

**Hacker**  
Access computer system or network without authorisation  
Breaks the law

**Ethical Hacker**  
Performs most of the same activities but with owner's permission  
Employed by companies to perform Penetration Tests



This unit will enable learners to develop their understanding of spreadsheets, including how to use formulas and create charts in Excel.

**Spreadsheets** are used to store information and data. Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns.

### Other uses for spreadsheets –

- Modelling and Planning
- Home/Business Finance and Budgeting
- Wages/Invoices
- Predictions / Simulations / Calculations
- Creating charts and graphs

The screenshot shows an Excel spreadsheet titled 'Chocolate'. The columns are labeled with months: January, February, March, April, May, June. The rows are categorized into 'Stock control' and 'Profit/loss'. Labels with arrows point to specific parts of the spreadsheet: 'Column' points to the month headers; 'Text Label' points to the category headers; 'Row' points to the row numbers; 'Worksheet' points to the entire grid; 'Cell Reference' points to a cell containing a formula; 'Numeric Data' points to numerical values in the cells; 'Active Cell' points to the currently selected cell; and 'Formula' points to the formula bar at the top.

**Golden rule: every formula always starts with an =**

Cell references begin with a letter, and finish with a number. EG: **A1**

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

A range is a selection of cells. EG: **A2:F4**

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

### Operators

+	Adds two numbers / cells
-	Subtracts one cell or number from another
*	Multiplies two numbers/cells
/	Divides one number / cell from another one
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to

### Questions

- 1) What is a spreadsheet?
- 2) Give examples of two uses for spreadsheets
- 3) What does every formula start with?
- 4) What are cell references?
- 5) What is a column?
- 6) What are functions?



This unit will enable learners to develop their understanding of spreadsheets, including how to use formulas and create charts in Excel.

<b>What is a Function?</b>	A <b>function</b> is a standard routine used to perform common tasks. It represents a complex formula that uses reserved words e.g. VLOOKUP, IF. A <b>function</b> performs a specific set of operations on its input values to produce a single output value.
<b>What is a Formula?</b>	Using <b>formulas</b> in <b>spreadsheets</b> can allow you to quickly make <b>calculations</b> and get totals of multiple cells, rows, or columns in a <b>spreadsheet</b> .
<b>Conditional Formatting</b>	is a tool that allows you to apply <b>formats</b> to a cell or range of cells, and have that <b>formatting</b> change depending on the value of the cell or the value of a formula. For example, you can have a cell appear bold only when the value of the cell is greater than 100.

<b>Common Formulas/Functions</b>	<b>= SUM</b>	Adds a range of cells together
	<b>= AVERAGE</b>	Finds an average for a range of cells
	<b>= MIN</b>	Returns the smallest value in range
	<b>= MAX</b>	Returns the highest value in a range
	<b>= COUNT</b>	Counts cells if they meet a condition

<b>IF</b>	one of the logical <b>functions</b> , to return one value <b>if</b> a condition is true and another value <b>if</b> it's false. For example: <b>=IF(A2&gt;B2,"Over Budget","OK") =IF(A2=B2,B4-A4,"")</b>
<b>Count IF</b>	<b>=COUNTIF</b> (Where do you want to look?, What do you want to look for?)
<b>Auto SUM</b>	<b>Excel automatically</b> enters a formula (that uses the <b>SUM</b> function) to <b>sum</b> the numbers
<b>= COUNT</b>	Counts cells if they meet a condition

**Key Learning that will take place in this unit:**

- Use of formatting and conditional formatting within spreadsheets.
- Different data types and formatting of these data types.
- Validation of data
- Use of images and image formatting.
- Application of the IF and COUNTIF functions within excel.
- Formula and creation use and application.
- Learning the different options available in the AutoSum function and their applications to spreadsheets.
- Use and application of goal seek analysis.

**Software and resources that will be used:**

- Microsoft Excel

Microsoft excel is a software program that allows users to organise, format and calculate data with formulas using a spreadsheet system.



**Key stroke shortcuts (an alternative to the right mouse button):**

Ctrl + x – Cut selected data  
 Ctrl + C – Copy the selected data  
 Ctrl + v – Paste copied/cut data

Ctrl + a – Select all (entire workbook)

Ctrl + s – Save

Shift + arrow key – selects a single cell at a time in the direction of the arrow key pressed



This unit will enable learners to understand computational thinking and programming techniques



**New, Open, Save and Print buttons**

**Cut, Copy, Paste and Delete buttons**

**Undo and Redo buttons**

Click to connect to an **Interface**, use a **Mimic** or use **Variables**. Or click **More...** for more features.

Drag new **flowchart symbols** from here

Add a **Label**

**Select mode**

Add connecting **line** between symbols

The **Workspace** is where your flowchart is constructed

The **Mimic Window** is a two or three dimensional graphical representation of a control system or robot. Move the mouse pointer over the mimic window to reveal the **View** icon in the top left and click there to toggle the mimic labels. Then click on inputs/outputs in the mimic to toggle their state. Drag the corner of the mimic window to resize it.

The **Status Panel** shows the current status of all inputs, outputs and variables in use. When the flowchart is not running, click to toggle the state of outputs to test their effect. When no interface is connected, click on the inputs to simulate a state change.

**Drag the divider** left and right to adjust the size of the Status Panel.

**Run/Stop** the flowchart, adjust flowchart **Speed Pause** and **Single Step**

**Zoom buttons**



This unit will enable learners to understand computational thinking and programming techniques

Keyword	Definition
Flowol	Flowol is a piece of software that allows you to control a number of different situations using flow diagrams
Algorithm	A set of instructions which is followed to solve a given problem, Can be represented using a flowchart
Flowchart	A diagram that shows an algorithm or process, made up of boxes representing steps, decision, inputs and outputs.
Computational Thinking	The thought process of taking a problem, working out how it can be calculated by a computer, and finding a solution.
Program	A sequence of instructions used by a computer
Sequence	The order which the computer will run code in one line at a time.
Selection	A decision made by a computer, choosing what code should be run only when certain conditions are met.
Condition	Checking to see whether a statement or sum is true or false.
Iteration	When a section of code is repeated several times - also known as looping

### Questions

- Algorithms - Write down the steps for the process of making a jam sandwich, then use the written steps to create a flowchart.
- What could you use a computer to control inside your home? Invent a new automated device for your home. Create a flowchart using the correct symbols to represent how it works.
- Find out the flowchart symbols for:
  - A delay
  - A subroutine
  - Storing data
- Write an algorithm to calculate the 5 times table. Can you expand your algorithm so that you can enter any number?
- From your algorithm, create a flowchart.

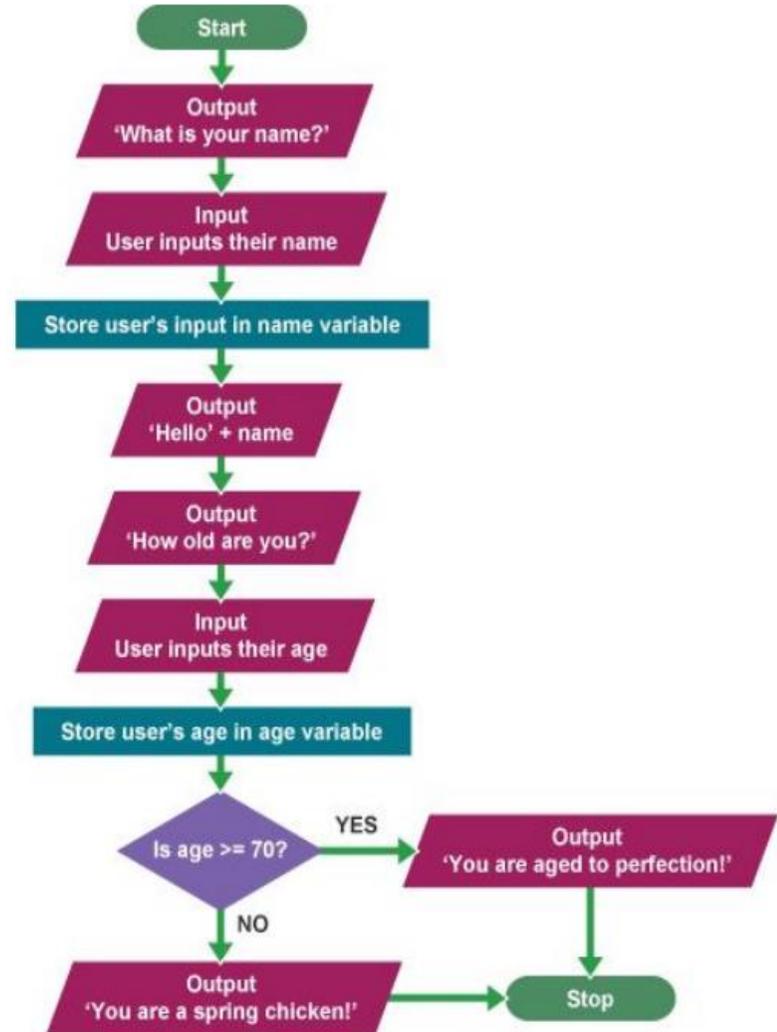


This unit will enable learners to understand computational thinking and programming techniques

### Flowchart symbols:

Name	Symbol	Use
Start/Stop		The beginning and end points in the sequence.
Process		An instruction or command
Input/Output		An Input is data received by a computer. An output is a signal or data sent from a computer.
Decision		A decision, either <b>yes</b> or <b>no</b> .
Direction of Flow		Connects the symbols. The arrow shows the direction of flow of instructions.

### Example program written as a Flowchart



### Flowol symbols:

	Label. This allows you to add text to your diagram
	Edit. This allows you edit parts of your diagram
	This links all the symbols together and completes the flow diagram.
	Play/Stop. This runs/stops the program



This unit will enable learners to understand the elements of pre - production in the media industry .

### Keywords:

**Pre production:** work done on a product, especially a film or broadcast programme, before full-scale production begins

**Purpose:** the reason for which something is done or created

**Content:** What it should include

**Node:** idea on mind map



### Moodboard:

#### Purpose:

- Used to generate ideas for a client
- Used to create a mood or a feeling or a product

#### Content:

- Images
- Colours
- Text/fonts/styles/keywords
- Textures, fabrics and other materials
- Digital mood board = sounds and video clips

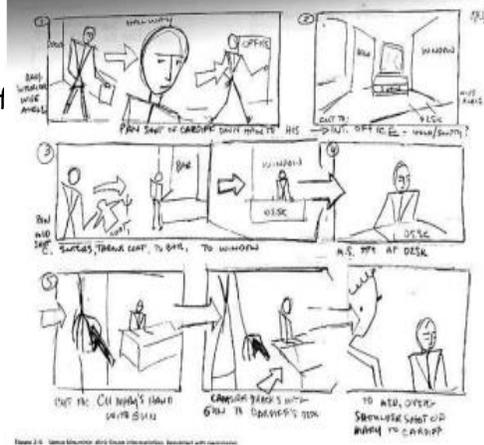
### Storyboards:

#### Purpose:

- Provide a visual representation of how a media project will look along a timeline
- To show the order of the scenes and how they fit together

#### Content:

- Images/sketches of scene
- Locations
- Camera shot types and angles
- Camera movement
- Timings
- Lighting
- Sound



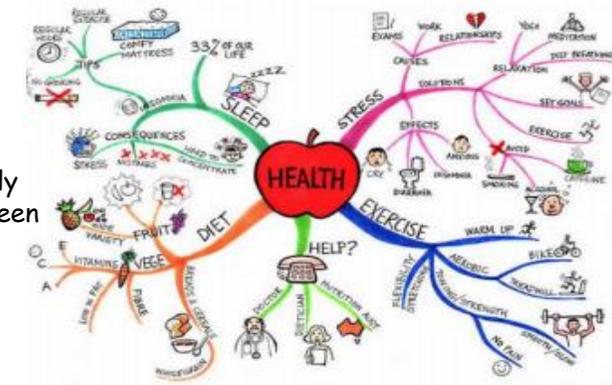
### Mind Maps:

#### Purpose:

- Generate outline ideas quickly
- Develop and show links between different thoughts and ideas

#### Content:

- Central node with the main theme
- Sub-nodes with interconnecting lines/branches
- Text
- Images can also be used



### Questions:

1. Name 3 things that need to be included in a storyboard
2. Name 3 things that need to be included in a moodboard
3. What is the purpose of a mind map?
4. Create a moodboard that represents St Josephs college



This unit will enable learners to understand the elements of interactive multimedia

### Keywords:

**Interactive multimedia** = products and services on digital computer-based systems which respond to the user's actions

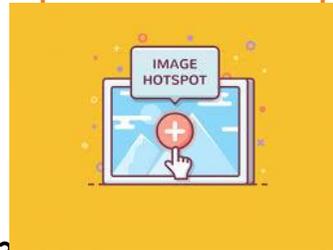
**Kiosk** = small stand-alone device providing information and services on a computer screen

**Hyperlink** = a link to another location, activated by clicking on a highlighted word or image.

**House style** = Set layout of how a website should look. Including font, layout and colours

### Peer feedback:

- Are there hyperlinks?
- Is there a consistent house style?
- How many interactive features do they have?
- Have they used image hotspots?
- Have they included a menu?
- What advice can you give to improve the product?



### Where can interactive multimedia be found?

#### Kiosk



#### Websites



#### Apps



#### Gaming



### Questions:

1. Name 3 places interactive multimedia can be found
2. What is the definition of interactive multimedia?
3. What is the difference between a hyperlink and image hotspot?
4. What is a consistent house style?



The aim of this unit is for learners to understand the basics of digital graphics editing for the creative and digital media sector. They will learn where and why digital graphics are used and what techniques are involved in their creation.

**AUDIENCE**

Age  
Location  
Gender  
Accessibility  
Income  
Requirements

**TOOLS/TECHNIQUES**

Cropping  
Rotating  
Changing  
brightness/contrast/adjustment



Which resources will be needed to create your digital graphic?

SERIF DRAW PLUS  
INTERNET  
COMPUTER SYSTEM

**LEARNING Objective Terminology**

Purpose

Creating Digital Graphics  
The reason for which a graphic is made or created

Properties

An attribute, quality or characteristic of a graphic

Plan

A detailed proposal for doing or achieving something

Create

To make or produce something using media skills

Review

A formal assessment of something. Think of strengths, weaknesses and improvements.

**Where are digital graphics used?**

Magazine covers  
CD/DVD covers  
Adverts  
Websites  
Multimedia products  
Games

**Why are digital graphics used?**

Advertise  
Inform  
Educate  
Entertain  
Promote  
Publishing  
Presentation



This unit will enable learners to understand computational thinking and programming techniques

## File Types for Graphics

**JPEG**

Lossy compression, small file size  
 Supports complex colors and values  
 Pronunciation: jay-pehg  
 Best use: photos, complex color  
 Don't use: when quality matters most

Good for web pages  
 - load quickly



**GIF**

Lossless compression, low resolution images  
 Supports transparency and animation  
 Pronunciation: jiff, like the peanut butter  
 Best use: simple logos, icons, few colors  
 Don't use: for photographs



**PNG**  
(24 bit)

Lossless compression, larger file sizes  
 Supports transparency.  
 Pronunciation: pee-en-jee  
 Best use: high-res images, transparency  
 Don't use: when file size matters most

Good for high quality pics  
 - slower to download



**TIFF**

Lossless compression, large file sizes  
 Supports a variety of data  
 Pronunciation: tiff  
 Best use: print, working files, vectors  
 Don't use: if the image isn't high-res



What can you change about an image to make it more suitable for different uses?  
 Size in pixels  
 Resolution (Dots per inch)  
 Quality  
 Compression

- Questions:
1. Explain the difference between lossy and lossless compression
  2. Why are digital graphics used?
  3. Where are digital graphics used?
  4. List 4 main file types for graphics
  5. Describe at least three tools and techniques you can use in Serif Draw plus



This unit will enable learners to understand computational thinking and programming techniques

Keyword	Definition
Malware	A general term that describes lots of different programs that try to do something unwanted to your computer. Malware is made to stop your device from running properly and sometimes to steal your information.
Anti-malware software	Software is designed to find and stop <b>malware</b> from damaging your computer or a network. To protect your computer you need to install <b>anti-malware</b> software and run it
Phishing	Emails that try to trick someone into giving out information by providing a link to another website.
Blagging	<b>Blagging</b> or <b>pretexting</b> is the act of creating and using an invented scenario, to engage a targeted victim in a manner that increases the chance the victim will divulge information, or perform actions, that would be unlikely in ordinary circumstances.
Brute Force	A <b>brute force attack</b> uses trial-and-error to guess login info, encryption keys, or find a hidden web page. Hackers work through all possible combinations hoping to guess correctly.
Shouldering	The act of spying on a person (usually over their shoulder) when they are logging in to gain passwords or other security information for that person's accounts.
Social Engineering	<b>Social engineering</b> is the term used for a broad range of malicious activities accomplished through human interactions. It uses psychological manipulation to trick users into making security mistakes or giving away sensitive information..
Cyber Security	<b>Cyber security</b> is how individuals and organisations reduce the risk of <b>cyber</b> attack
Hacking	Accessing information not owned without permission of the owner

### Copyright and plagiarism:

**Copyright** © protects the rights of an author/creator of creative work. It means that someone else's work cannot be copied without permission.

**Plagiarism** is using someone else's creative work as if it is yours.

**Copyrighted material** online can be music, films or pictures. Sharing or downloading these illegally (without paying the owner of the copyright) is a copyright infringement. However, there are many sites, like amazon music or iTunes, where downloading music is legal because the owner has been paid.

### But what is the problem with downloading music?

It is estimated that the illegal downloading of films, TV programmes and music could mean the loss of 30,000 British jobs

### At home:

Check your security and privacy settings, are they secure? What can a stranger see on your social media? Could they recreate/copy your identity?

Check - Is your home work station damaging you back?

Cyber Security Challenges:  
[Key Stage 3 | Teachers | United Kingdom \(siemens.com\)](#)



### Malware is software that can harm devices

#### Malware:

Malware means **Malicious software**. Malware can be accidentally downloaded, usually as a virus via a vulnerability in the network or intentionally added by a hacker.



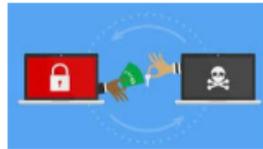
#### Logic bombs:

Used by disgruntled employees or blackmailers – executes a destructive sequence, set to detonate at a certain time.

#### Ransomware:

Denies access to the network or computers until a ransom is paid.

Famously the NHS was victim to a ransomware attack in 2017.



#### Other common types of malware:

**Browser**, also called spyware – hijacks browser functions, **File infector** – Infects a particular file and may overwrite or alter that file, **Macro virus** – can be embedded in templates and will spread to other computers if the file is shared.

### Phishing emails are trying to trick someone into giving out information over email.

#### ? What to look out for in a phishing email ?

The greeting is not personalised

Poor spelling and grammar

Forged link

Sense of urgency

Request for personal information

The sender's address is often a variation on a genuine address

### Ways to reduce spam

#### Use a **spam FILTER**

Do not give your email address out - if you don't trust the website or if supplying your email address is optional, don't give it to them.

Keep an eye out for tick boxes - when you sign up to a website, it might try to sign you up to its newsletter.

### Avoid becoming a victim of malware or email scams:

#### Malware

- Avoid clicking on everything e.g. offers that seem too good to be true
- Don't visit illegal sites, such as those that let you download copyright material
- Make sure your browser is configured to always ask before running files and downloading automatically
- Keep your browser software up-to-date

#### Email scams

- Use a SPAM Filter to prevent common scams ever reaching your
- Be suspicious if you aren't completely certain it's genuine. NEVER click any links or download attachments.

### Hacker and Ethical Hackers

#### Hacker

Access computer system or network without authorisation  
Breaks the law

#### Ethical Hacker

Performs most of the same activities but with owner's permission  
Employed by companies to perform Penetration Tests



### Data protection:

Knows your rights about your information. Certain companies and organisations are permitted to hold data on you but:



- The data must be accurate and up to date
- You have a right to see what data is held about you
- The data must be protected from unauthorised access

AND

- It can only be kept for as long it is relevant (the company can't keep your details forever)

### Passwords:

The most commonly used passwords are 'password' or 'Password1'. Always include at least 1 uppercase letter, 1 lowercase letter, 1 number AND a special character:

**\*pa\$\$WorD\_2070**

Don't include personal information

Make it at least 8 characters long

**Weak passwords are one of the most common weaknesses exploited by hackers!**

### Cybercrime:

Cybercrime, sometimes called computer crime, is a crime committed using the internet and any internet enabled device including smartphones

#### Cyber crime fact file

- Cyber crime makes more money for criminals than drug trafficking
- Around the world someone's identity is stolen online every 2 seconds
- It takes just 4 minutes from connecting to the internet for an unprotected device to become infected.

#### Hackers:

A hacker is (as defined in the Computer Misuse Act, 1990) someone who looks at or modifies another users' data without permission.

#### Why do hackers hack?:

- For money
- For information
- For political reasons
- For revenge
- For the thrill of the challenge
- To cause chaos and mischief



#### Questions

1. Write the definition of 'GDPR'
2. What are the 4 most commonly used email scams?
3. What does 'malware' mean?
4. Give two examples of malware
5. What is a hacker?
6. What is a common weakness hackers exploit?
7. How do you protect yourself from becoming a victim of cybercrime?
8. How do you protect your data online?



This unit will enable learners to develop their digital literacy skills. Students will explore a range of software learning how to create a logo, a business letter, leaflet including how to use formulas and create charts in Excel.

### How do search engines work?

Google has a big index (database) containing millions of web addresses.

Each web address has a list of words and the number of times they appear on the site.

So when you search the web you are not actually searching the web, you are searching a database for key words.



### Fact or Fake News

Sometimes people act too hastily – they respond in anger for example, or they share posts or tweets written by someone they don't know and cannot substantiate.

It's possible to accidentally post 'fake news' or rumours that might hurt someone or cause a problem somewhere.

"Fake News" is a type of journalism or propaganda that consists of deliberate misinformation or hoaxes spread via traditional print and broadcast news media or online through social media.



### Reliability

In order to determine whether or not a website is reliable and trustworthy, we need to evaluate the information we are given. We need to check the following:

1. How professional does it look?
2. Is the information provided of good quality? (spelling, detail etc.)
3. Do all links work?
4. Is it "Up-To-Date"? (is there an article published / updated date?)
5. Is the URL reliable? (does the main web address relate to the website content)
6. Is the information backed up by other websites?

### Boolean search

You can use Boolean operators (special words and symbols) to drill down and find the information you need.

AND    OR    + / -  
NOT    Quotes " "

# HOW TO Google LIKE A PRO

### Copyright

Copy right is a law designed to help protect peoples work and ideas.



If you:

**Take peoples work** (download films / music)

**Use people's work** ( copy text/ images from the internet

**Steal people's ideas** ( create a new product using someone else's technology)

**Without permission and without acknowledging them, then you are breaking copyright law.**

Typical punishments range from 6 months to 10 years imprisonment and also £5000 fine.

## Memo

To: All Year 9 Students

From: Director of the Theme Park

Subject: **The Theme Park Project**



The Director from the Theme Park has sent Year 9 ICT a memo requesting some tasks they need completing:

#### Using a financial forecasting model:

- The Director needs you to use the financial forecasting model spreadsheet to create a graph and business letter.

#### Create a logo:

- The Theme Parks need Year 8 to design and create a new logo for the business.

#### Create a leaflet:

- To advertise the new Theme Park e.g. the rides, the merchandise shop etc.

#### Create a poster:

- A poster will also be needed to let everyone know about the Theme Park



This unit will enable learners to develop their digital literacy skills. Students will explore a range of software learning how to create a logo, a business letter, leaflet including how to use formulas and create charts in Excel.

# How to Write a Formal Letter

[www.interlinguaschools.com](http://www.interlinguaschools.com)

**1. Your address and other contact information should be written on the right corner**

**2. The information (name, address, name of company, etc.) of the person you are writing to should be written on the left corner.**

**3. Date can be written in different parts of the letter, but it is important to write the month as a word**

**4. Salutation: if you do not know the name: Dear sir or madame. If you know the name, use the name and the title: Mr, Ms, Dr.**

**5. First paragraph states the purpose of the letter**

**6. Main paragraphs contains the relevant information. Keep information to the essentials**

**7. Last paragraph should state the action you expect the recipient to take.**

**8. Ending a letter & Signature: (Yours) Sincerely (Yours) Faithfully (Yours) Cordially**

Recipient's Name  
Disignation  
Company  
Address

March 26, 2016

Dear (Recipient Name):

I am writing in response to your employment offer on the Infojobs website for a Sales Manager for BlueGiant corporation. I enclose my CV, which details my qualifications and relevant experience.

The job attracted me because it is related to financials and marketing. Moreover, it is a very challenging job and I find so very important

It would be an absolute pleasure to enjoy this company. Thank you for considering my application and in case you have need any further information, do not hesitate to contact me.

I look forward to working with you.

Sincerely,

Handwritten signature  
Julian Edelman

Your name  
Street Address  
City  
Phone, Email

- simple
- memorable
- purposeful
- timeless
- versatile





This unit will enable learners to develop their digital literacy skills. Students will explore a range of software learning how to create a logo, a business letter, leaflet including how to use formulas and create charts in Excel.

**Spreadsheets** are used to store information and data. Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns.

### Other uses for spreadsheets –

- Modelling and Planning
- Home/Business Finance and Budgeting
- Wages/Invoices
- Predictions / Simulations / Calculations
- Creating charts and graphs

The screenshot shows an Excel spreadsheet with the following data:

	January	February	March	April	May	June
<b>Stock control</b>						
Opening balance of chocolate	150	150	150	150	150	150
Number of bars bought	150	150	150	150	150	150
Total stock level						
Number of bars sold	200	220	220	230	200	200
Number of bars left						
<b>Profit/loss</b>						
Cost price per bar	£5.20	£5.20	£5.20	£5.20	£5.20	£5.20
Selling price per bar	£3.45	£3.45	£3.45	£3.45	£3.45	£3.45
Income per bar						
Total income from chocolate		£3.75				

Labels in the diagram point to: Column, Text Label, Row, Worksheet, Cell Reference, Numeric Data, Active Cell, and Formula.

**Golden rule: every formula always starts with an =**

Cell references begin with a letter, and finish with a number. EG: **A1**

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

A range is a selection of cells. EG: **A2:F4**

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

### Operators

+	Adds two numbers / cells
-	Subtracts one cell or number from another
*	Multiplies two numbers/cells

### Questions

- 1) List three search techniques
- 2) What is meant by the term reliability?
- 3) How would you use a Boolean search?
- 4) List 5 things that make a logo successful
- 5) What is a spreadsheet?
- 6) Give examples of two uses for spreadsheets
- 7) What does every formula start with?
- 8) Which software is the most appropriate to create a Business letter?



This unit will enable learners to understand computational thinking and programming techniques

### Summary

**Programming** is writing computer code to create a program, in order to solve a problem. Programs consist of a series of instructions to tell a computer exactly what to do and how to do it.

An **algorithm** is a set of instructions that describes how to get something done. It is crucial that the steps in an algorithm are sequenced and performed in the right order - otherwise the algorithm will not work correctly. Algorithms can be designed using **pseudocode** and **flow charts**. They are written using **statements** and **expressions**. There are three basic building blocks (constructs) to use when designing algorithms: **sequencing**, **selection** and **iteration**. We create programs to **implement** algorithms. Algorithms consist of steps, where programs consist of.

In programming, iteration is often referred to as 'looping', because when a program iterates it 'loops' to an earlier step. It is implemented using **FOR** and **WHILE** statements. Selection is implemented in programming using **IF** statements.

**Algorithm:** A sequence of logical instructions for carrying out a task. In computing, algorithms are needed to design computer programs.

**Flowchart:** A diagram that shows a process, made up of boxes representing steps, decision, inputs and outputs.

**Instruction:** A single action that can be performed by a computer processor.

**Programming:** The process of writing computer software.

**Programming language:** A language used by a programmer to write a piece of software. There are many programming languages.

**Pseudocode:** A method of writing up a set of instructions for a computer program using plain English. This is a good way of planning a program before coding.

**Variable:** In a computer program, this is a memory location where values are stored.

### Variable

Computer programs use variables to store information.

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



### Selection

Selection is a decision or question.

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



### Sequencing

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

Algorithms consist of instructions that are carried out (performed) one after another.



### Iteration

Iteration is the process of repeating steps.

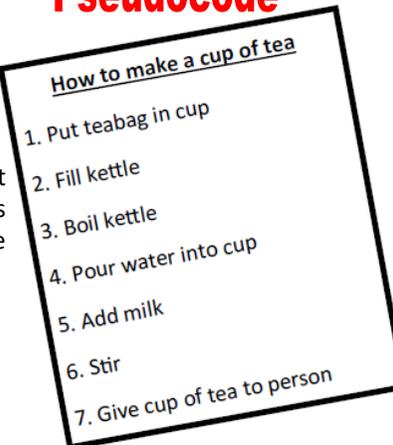
Iteration allows us to simplify our algorithm by stating that we will repeat certain steps until told otherwise. This makes designing algorithms quicker and simpler because they don't have to include lots of unnecessary steps.



# Algorithms

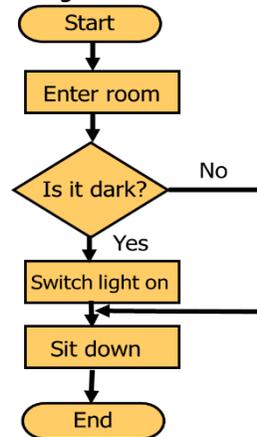
Algorithms can be represented as pseudocode & flowchart, and programming is the translation of these into a computer program.

## Pseudocode



## Flowchart

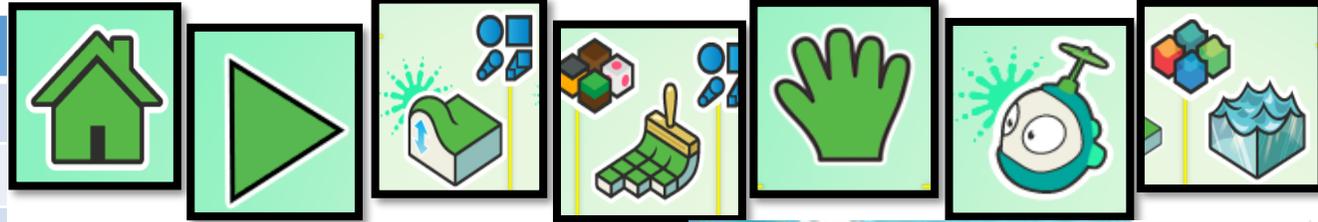
Entering a room





This unit will enable learners to understand computational thinking and programming techniques

Keyword	Definition
Terrain	Stretch of land
Path	A set path to follow
Kodu	A sprite/character In your game
Program Code	A list of coded instructions
World	Stage within your game
Scoring	Scoring points within your game.



### Controlling a Character

Make the character move using either the left stick or keyboard arrows



### Scoring

Players score will increase by one when he bumps into a coin



#### Questions:

1. What is an algorithm?
2. How can algorithms be represented?
3. What are variables?
4. What is a terrain in Kodu?
5. What is a path in Kodu?



### Collecting Objects

Makes the player eat the object it has bumped into



### Following Paths

Make the character continuously move along a path. Use + to set the colour of the path if using more than one.





Learning about the seasons, about visiting China, how to understand tourist information and buy souvenirs

### Past tense using 过guò:

We have previously learnt that we can create the past tense by simply using 了. This is used for completed actions with a specific time:

我昨天见了他 wǒ zuó tiān jiàn le tā I met him yesterday (specific time)

We use 过 guò to indicate an action in the past, where there is no clear time frame provided.

我见过他 wǒ jiàn guò tā I met him (no specific time)

To make it negative, use 没: 我没见过他 I have not/never met him.

### Seasons & Directions:

春天 chūn tiān spring

夏天 xià tiān summer

秋天 qiū tiān autumn

冬天 dōng tiān winter

北 běi north

南 nán south

东 dōng east

西 xī west

### Cities & Attractions:

北京 běi jīng Beijing

上海 shàng hǎi Shanghai

西安 xī ān Xian

广州 guǎng zhōu Guangzhou

长城 cháng chéng Great Wall

故宫 gù gōng Forbidden City

天安门广床 tiān ān mén guǎng

chuáng Tiananmen Square

鸟巢 niǎo cháo Birds Nest

钟楼 zhōng lóu Bell Tower

兵马俑 bīng mǎ yǒng Terracotta Army

动物园 dòng wù yuán Zoo

开门 kāi mén open/opening

关门 guān mén close/closing

门票 mén piào entrance ticket

有名 yǒu-míng famous

### Feelings & Opinions:

觉得 jué de to think/feel

认为 rènwéi to think/feel

非常 fēi cháng very

好吃 hǎo chī good to eat

好喝 hǎo hē good to drink

累 lèi tired

饿 è hungry

渴 kě thirsty

一点儿 yì diǎn ér a little

### Because... so...: 因为...所以... yīn wèi... suǒ yǐ...

The sentence pattern is.

因为 + reason + 所以 + outcome/fact

因为我学中文, 所以我要去中国

yīn wèi wǒ xué zhōng wén, suǒ yǐ wǒ yào qù zhōng guó

Because I study Chinese, (so) I want to go to China.

### Before & After:

以前 yǐ qián before

以后 yǐ hòu after

一点以前 yì diǎn yǐ qián

before 2

一点以后 yì diǎn yǐ hòu

after 2

### Buying souvenirs:

礼物 lǐ wù present

筷子 kuài zi chopsticks

熊猫 xióng māo panda

明信片 míngxìnpiàn postcard

汉字 hàn zì character

画 huà to draw/paint

画画 huà huà painting

可爱 kě ài cute

### 得:

得 (dé) is used to express how an activity is done: how well / how fast etc. The main verb is repeated and immediately followed by 得 verb + object + 得 + adverb

我吃饭吃得多吃得多 wǒ chī fàn chī dé duō I eat a lot.

他写汉字写得好 tā xiě hàn zì xiě dé hǎo He writes characters well.

### 除了...以外... chú le...yǐ wài...:

This phrase helps to provide multiple options / choices

除了中文意外, 我还学法语 chú le zhōng wén yì wài, wǒ hái xué fǎ wén

Apart from Chinese, I also learn French.

### Questions:

1. 你去过中国? nǐ qù guò zhōng guó? Have you been to China?

2. 你喜欢春天吗? nǐ xǐ huān chūn tiān ma? Do you like spring?

3. 你觉得北京怎么样? nǐ jué de běi jīng zěn me yàng? Do you like Beijing?

### Answers:

1. 我没去过... wǒ méi qù guò... I have never been...

2. 因为春天..., 所以... yīn wèi chūn tiān..., suǒ yǐ...  
Because spring..., so...

3. 我觉得除...了以外, wǒ jué de chú le yǐ wài I think apart from...,...



Talking about interests, arranging to meet friends, asking permission and learning about music in China

### 会 (huì) 可以 (kě yǐ) 能 (néng):

There are three ways to say 'can' in Chinese. They are all slightly different. Here is how:

会 means you 'can' do something you have learnt how to do.

我会说中文 wǒ huì shuō zhōng wén I can speak Chinese

我会游泳 wǒ huì yóu yǒng I can swim

可以 means it is okay to do something, or there is an option to do something., or there is an option to do something. It is also used when asking permission.

我可以上网吗? wǒ kě yǐ shàng wǎng ma? Can I go online?

我们可以吃饭 wǒ men kě yǐ chī fàn We can eat.

能 is used when talking about whether something is possible or impossible

他不能吃猪肉 tā bù néng chī zhū ròu He can't eat pork

我不能来学校- wǒ bù néng lái xué xiào I can't go to school

### Sports:

打羽毛球 dǎ yǔ máo qiú play badminton

打网球 dǎ wǎng qiú play tennis

打乒乓球 dǎ pīng pāng qiú play table tennis

游泳 yóu yǒng swim

活动 huó dòng activity

运动 yùn dòng sport

### Chinese Hobbies:

打太极拳 dǎ tài jí quán practice tai chi

放风筝 fàng fēng zhēng fly a kite

练书法 liàn shū fǎ practice calligraphy

下中国象棋 xià zhōng guó xiàng qí play Chinese chess

### Interests:

表演 biǎo yǎn to perform

唱歌 chàng gē to sing

打电话 dǎ diàn huà to phone

画画 huà huà to draw/paint

拍照片 pāi zhào piān take a photo

上网 shàng wǎng to go online

弹吉他 tàn jí tā to play guitar

跳舞 tiào wǔ to dance

玩儿游戏 wánr yóu xì play games

姓 xìng to be called (surname)

叫 jiào to be called (first name)

艺术 yì shù art

天天 tiān tiān every day

都 dōu all; in every case

好玩儿 hǎo wán ér fun; funny

### 还 hái:

We have previously learnt 还 to mean 'also' (where the subject is the same). It can also mean 'still' or 'yet'

我还不知道 wǒ hái bù zhī dào

I still don't know

我还没有去 wǒ hái méi yǒu qù

I have not gone yet.

### 跟/和 ...一起 gēn/hé...yì qǐ: doing something 'together'

To say that you are doing an activity with two or more people, you need to follow the word order pattern:

(A) 跟(B) 一起 (verb)

我跟妈妈一起看电视 wǒ gēn mā ma yì qǐ kàn diàn shì I watch TV with mum

我跟朋友一起打网球 wǒ gēn péng yǒu yì qǐ dǎ wǎng qiú I play tennis with my friend.

### Going somewhere to do something:

The sentence pattern is.

go place do activity

我去公园踢足球 wǒ qù gōng yuán tī zú qiú

I go to the park to play football

### Questions:

1. 你去哪儿? ? nǐ qù nǎ ér? Where are you going?

2. 我可以上网吗? wǒ kě yǐ shàng wǎng ma? Can I go online?

### Answers:

1. 我跟朋友一起去公园打网球 wǒ méi qù guò...

I am going to the park to play tennis with my friend

2. 可以。但是不能玩儿游戏... kě yǐ dàn shì bù néng wán ér yóu xì

You can, but you can't play games



# St Joseph's College Mandarin Department

Spring Term 2: Me, my family and where I live Year 9 Half Term 3

Talking about your family, where you live and your future.



## 在 for location

Remember that 在 describes where something takes place: 我在图书馆看书 or 我们在饭馆吃饭

### (A)在(B)的(position):

在 can also be used to describe where things are in relation to each other:

我的家在商店的后边 wǒ de jiā zài shāng diàn de hòu biān My home is behind the shop

我的家在银行的左边 wǒ de jiā zài yín háng de zuǒ biān My home is to the left of the bank

## Family

先生	xiān shēng	Mr. / husband
太太	tài tài	Mrs. / wife
老公	lǎo gōng	husband (inf)
老婆	lǎo pó	wife (inf)
父母	fù mǔ	parents
爷爷	yé ye	grandfather
奶奶	nǎi nai	grandmother
阿姨	ā yí	auntie
叔叔	shū shū	uncle
女士	nǚ shì	Ms
介绍	jiè shào	to introduce
自己	zì jǐ	oneself

## Substitutes for 很

Try to express yourself using other ways of saying 很:

非常	fēi cháng	extremely
有一点	yǒu yì diǎn	a little
不太	bù tài	not too

## Professions

演员	yǎn yuán	actor
画家	huà jiā	painter
运动员	yùndòng yuán	athlete
经理	jīng lǐ	manager
将来	jiāng lái	future
当	dāng	to do (a job)
公司	gōng sī	company
老板	lǎo bǎn	boss
人民币	rén mǐn bì	currency

## Big numbers:

零	líng	0
十	shí	10
百	bǎi	100
千	qiān	1,000
万	wàn	10,000

## 是...的..

This phrase emphasises how a verb was completed :

这是昨天买的 zhè shì zuó tiān mǎi de This was bought yesterday  
我是十点来的 wǒ shì shí diǎn lái de I arrived at 10.

## Around Town:

这儿	zhèr	here
这里	zhè lǐ	here
那儿	nàr	there
那里	nà lǐ	there
哪儿	nǎr	where
哪里	nǎ lǐ	where
公司	gōng sī	company
饭店	fàn diàn	hotel
市场	shì chǎng	supermarket
邮局	yóu jú	post office
银行	yín háng	bank
饭馆	fàn guǎn	restaurant
商店	shāng diàn	shop
中心	zhōng xīn	centre
市中心	shì zhōng xīn	city centre
工厂	gōng chǎng	factory

## Modes of transport:

骑	qí	to ride
坐	zuò	to go by
汽车	qì chē	car
出租车	chū zū chē	taxi
公共汽车	gōng gòng qì chē	bus
火车	huǒ chē	train
自行车	zì xíng chē	bicycle
船	chuán	boat
地铁	dì tiě	subway
走路	zǒu lù	to walk
怎么	zěn me	how?
上车	shàng chē	to get on
下车	xià chē	to get off
站	zhàn	station

## Directions:

请问	qǐng wèn	May I ask
左边	zuǒ biān	left side
右边	yòu biān	right side
前边	qián biān	in front
后边	hòu biān	behind
对面	duì miàn	opposite
路口	lù kǒu	intersection

## Frequency Words:

常常	cháng cháng	often
天天	tiān tiān	everyday

## Questions:

- 请介绍你的家? qǐng jiè shào nǐ de jiā? Please introduce your family?
- 你的家在哪儿? nǐ de jiā zài nǎr? Where is your house?
- 你将来当做什么? nǐ jiāng lái dāng zuò shén me? What job do you want in the future?

## Answers:

- 我的爷爷一百岁 wǒ de yé ye yī bǎi suì My grandpa is 100
- 我家在公园对面 wǒ jiā zài gōng yuán duì miàn My home is opposite the park
- 我当画家 wǒ dāng zuò huà jiā I want to be a painter



# St Joseph's College Mandarin Department

Spring Term 2: Eating Out Year 9 Half Term 4



Talking about food, and going to a restaurant. My day - talking about your daily routine

### 用 as a verb:

As a verb 用 means 'to use'

我用手机

### 用 as a preposition

It can also be used as a preposition - and it means 'with' or 'using'

我用手机看电影

'I using a mobile watch a film.' = I use a mobile to watch a film

### Making suggestions politely:

你看 You look! (Impolite)

Here are various ways to make (polite) commands:

- 1) Simply double the verb: **Verb + Verb** 你看看
- 2) Double the verb, with an '一' between **Verb + 一 + Verb** 你看一看
- 3) **Verb + 一下** 你看一下
- 4) **Add 吧** at the end of the sentence 你看吧。

### The present continuous:

This is how you say you are in the process of doing something

我看书 **wǒ kàn shū** I read a book

我正在看书 **wǒ zhèng zài kàn shū** I am **reading** a book

### Food / Drink - Key Verbs:

尝 **cháng** to try  
 欢迎 **huān yíng** to welcome  
 请 **qǐng** to ask  
 进 **jìn** to enter  
 等 **děng** to wait  
 点菜 **diǎn cài** to order food  
 开门 **kāi mén** to open  
 关门 **guān mén** to close  
 吃 **chī** to eat  
 喝 **hē** to drink

### School vocab:

节 **jié** m.w. lessons  
 班 **bān** a class  
 教室 **jiào shì** a classroom  
 本子 **běn zi** notebook  
 写 **xiě** to write  
 练习 **liàn xí** to practise  
 生气 **shēng qì** angry  
 高兴 **gāo xìng** happy  
 累 **lèi** tired  
 总是 **zǒng shì** always  
 帮 **bāng** to help  
 帮忙 **bāng máng** help

### Food / Drink - Key Vocab:

渴 **kě** thirsty  
 饿 **è** hungry  
 杯 **bēi** m.w. cup  
 碗 **wǎn** m.w. bowl  
 不客气 **bù kè qì** you're welcome  
 已经 **yǐ jīng** already  
 应该 **yīng gāi** ought to

### Daily Routine- Key Vocab:

起床 **qǐ chuáng** to get up  
 出门 **chū mén** to go out  
 休息 **xiū xi** to rest  
 放学 **fàng xué** to finish school  
 洗手 **xǐ shǒu** to wash hands  
 做饭 **zuò fàn** to cook  
 跟..见面 **gēn jiàn miàn** to meet  
 聊天 **liáo tiān** to chat  
 睡觉 **shuì jiào** to sleep  
 上课 **shàng kè** to start lessons  
 下课 **xià kè** to finish lessons

### 上/下 previous / next

上个月 **shàng ge yuè** last month  
 下个月 **xià ge yuè** next month

### Food- Key Nouns:

羊肉 **yáng ròu** lamb  
 猪肉 **zhū ròu** pork  
 虾 **xiā** shrimp  
 包子 **bāo zi** steamed buns  
 饺子 **jiǎo zi** dumpling  
 鸡蛋 **jī dàn** egg  
 蛋糕 **dàn gāo** cake  
 西瓜 **xī guā** watermelon  
 苹果 **píng guǒ** apple  
 果汁 **guǒ zhī** juice  
 豆浆 **dòu jiāng** soya milk  
 餐厅 **cān tīng** canteen  
 早饭 **zǎo fàn** breakfast  
 午饭 **wǔ fàn** lunch  
 晚饭 **wǎn fàn** dinner  
 筷子 **kuài zi** chopsticks  
 点心 **diǎn xīn** dimsum  
 寿司 **shòu sī** sushi  
 拉面 **lā miàn** pulled noodles

### Before 以前 yǐ qián

九点以前 **Before 9 o'clock**  
 jiǔ diǎn yǐ qián

### After 以后 yǐ hòu

九点以后 **After 9 o'clock**  
 jiǔ diǎn yǐ hòu

### Questions:

1. 你最喜欢的菜是什么? **nǐ zuì xǐ huān de cài shì shén me**
2. 你今天为什么很高兴? **nǐ jīn tiān wèi shén me hěn gāo xìng**
3. 你正在做什么? **nǐ zhèng zài zuò shén me**

What is your favourite dish?  
 Why are you so happy today?  
 What are you doing at the moment?



### Planning a holiday, booking accommodation and travel, going sightseeing and talking about the weather

**From... to... 从... 到...:** 从 **cóng** ... 到 **dào**... describes a starting and finishing point.

It can be used with time or physical location.

我们从九点到三点上学 **wǒ men cóng jiǔ diǎn dào sān diǎn shàng kè** We have lessons from 9 till 3

明年我要坐火车从北京到上海 **míngnián wǒ yào zuò huǒchē cóng běijīng dào shànghǎi** Next year I will go by train from BJ to SH

### Booking a Holiday Vocab:

快要	<b>kuài yào</b>	just about to
订	<b>dìng</b>	to book
票	<b>piào</b>	ticket
多长时间	<b>duō cháng</b>	how much
时间	<b>shí jiān</b>	time
司机	<b>sī jī</b>	driver
酒店	<b>jiǔ diàn</b>	large hotel
空房间	<b>kōng fáng jiān</b>	free room
前台	<b>qián tái</b>	front desk
需要	<b>xū yào</b>	must
钥匙	<b>yào shi</b>	key
房费	<b>fáng fèi</b>	room fee
查询	<b>chá xún</b>	search
车次	<b>chē cì</b>	train number
目的地	<b>mù dì dì</b>	destination
出发	<b>chū fā</b>	to depart
到达	<b>dào dá</b>	to arrive
单程	<b>dān chéng</b>	single ticket
来回	<b>lái huí</b>	return ticket
一等座	<b>yī děng zuò</b>	first class
无座	<b>wú zuò</b>	standing class
回国	<b>huí guó</b>	return to home

### Future tense

There is no future tense in Mandarin. The future is created by context. Common verbs used in Mandarin to imply the future are:

要 **yào** implies wanting to do something (ie in the future)

会 **huì** implies a factual statement or prediction about the future

我学习中文 **wǒ xué xí zhōng wén** I study Chinese

明天我要学习中文 **míng tiān wǒ yào xué xí zhōng wén**

Tomorrow I will study Chinese (because I need/want to).

明天我会学习中文 **míng tiān wǒ huì xué xí zhōng wén**

Tomorrow I will study Chinese (because that is the plan I made)

### Weather Vocab:

天气 **tiān qì** weather

冷 **lěng** cold

热 **rè** hot

下雨 **xià yǔ** to rain

下雪 **xià xuě** to snow

刮风 **guā fēng** windy

太阳 **tài yáng** sun

有太阳 **yǒu tài yáng** sunny

多云 **duō yún** cloudy

### Travel Vocab:

度假 **dù jià** go on holiday

地方 **dì fāng** place

有名 **yǒu míng** famous

海滩 **hǎi-tān** beach

森林 **sēn lín** forest

寺庙 **sì miào** temple

风景 **fēng jǐng** scenery

城市 **chéng shì** city

国家 **guó jiā** nation

### Time duration

To say how long something lasts, the duration goes after the verb:

我要学习三个小时 **wǒ yào xué xí sān ge xiǎoshí** I will study for 3 hours

If it is in the past, 了 goes after the verb

我学习了三个小时 **wǒ xué xí le sān ge xiǎo shí** I studied for 3 hours

NB: Point in time goes before the verb, duration goes after:

我明天要学习三个小时 **wǒ míng tiān yào xué xí sān ge xiǎo shí**

Tomorrow I will study for 3 hours

### Yesterday/Today/Tomorrow

昨天 **zuótiān**

今天 **jīntiān** 明天 **míngtiān**

### Last / This / Next Year:

去年 **qù nián**

今年 **jīn nián** 明年 **míng nián**

**Again: 再 zài means 'again'** comes before the verb

再见 **zài jiàn** means 'see you again'

It can also mean 'after a delay'

明天再说 **míng tiān zài shuō** Let's talk again tomorrow

### Questions:

1. 你们去哪儿度假?

**nǐ men qù nǎer dù jià?**

Where will you go on holiday?

2. 你们怎么去?

**nǐ men zěn me qù?**

How will you get there?

3. 那边的天气怎么样?

**nà biān de tiān qì zěn me yàng?**

What is the weather like there?

### Have you ever?

Put 过 after the verb when asking & answering 'have you ever'.

你去过中国吗? **nǐ qù guò zhōngguó ma?** Have you ever been to China

我没吃面条 **wǒ méi chī miàn tiáo** I didn't eat noodles

我没吃过面条 **wǒ méi chī guò miàn tiáo** I have never eaten noodles



### China - Cities & Provinces

Mark the major cities on the map!

Beijing	北京	běi jīng
Harbin	哈尔滨	hā ěr bīn
Tianjin	天津	tiān jīn
Xian	西安	xī ān
Shanghai	上海	shàng hǎi
Hangzhou	杭州	háng zhōu
Taipei	台北	tái běi
Chengdu	成都	chéng dū
Guangzhou	广州	guǎng zhōu
Hong Kong	香港	xiāng gǎng





# St Joseph's College Math Department

Autumn Term: Powers and Roots (Half-Term 1)

This topic includes calculating combinations of powers and roots, understand negative indices, finding the reciprocal of a number. calculate combinations of indices, fractions and brackets.



<b>Square Number</b>	The number you get when you multiply a number by itself.	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225... $9^2 = 9 \times 9 = 81$
<b>Square Root</b>	The number you multiply by itself to get another number. The reverse process of squaring a number.	$\sqrt{36} = 6$ Because $6 \times 6 = 36$
<b>Cube Number</b>	The number you get when you multiply a number by itself and itself again.	1, 8, 27, 64, 125... $2^3 = 2 \times 2 \times 2 = 8$
<b>Cube Root</b>	The number you multiply by itself and itself again to get another number. The inverse process of cubing a number.	$\sqrt[3]{125} = 5$ because $5 \times 5 \times 5 = 125$
<b>Estimate</b>	Round each number in the calculation to 1 significant figure.  $\approx$ means 'approximately equal to'	$\frac{348 + 692}{2.103} \approx \frac{300 + 700}{2} = 500$

**Positive powers**

Numbers multiplied by themselves

Index notation used to write easily

$4 \times 4 \times 4 = 4^3$  Power  
Base

$8^4 = 8 \times 8 \times 8 \times 8$

$\left(\frac{2}{3}\right)^2 = \frac{2^2}{3^2} = \frac{2 \times 2}{3 \times 3} = \frac{4}{9}$

**Anything to the power of 1 is just itself**

$5^1 = 5$      $28^1 = 28$

**Negative powers**

Negative powers are fractions

$5^{-2}$	$\frac{1}{25}$	$\div 5$
$5^{-1}$	$\frac{1}{5}$	$\div 5$
$5^0$	1	$\div 5$
$5^1$	5	$\div 5$
$5^2$	$5 \times 5 = 25$	$\div 5$
$5^3$	$5 \times 5 \times 5 = 125$	$\div 5$

A negative power means "Take the reciprocal and make the power positive"

$\left(\frac{4}{5}\right)^{-2} = \left(\frac{5}{4}\right)^2 = \frac{5^2}{4^2} = \frac{25}{16}$

Find Reciprocal  
Apply Positive Power  
Apply top and bottom

$x^{-n} \rightarrow \frac{1}{x^n}$

**Fractional powers**

Numerator and denominator are important

**2-Stage Powers:**

$x^{\frac{m}{n}} = (\sqrt[n]{x})^m$

Root by denominator first  
Then power of numerator

$16^{\frac{3}{2}} = (\sqrt[2]{16})^3 = 64$

**Negative Fractional Powers:**  
Apply reciprocal first!

$\left(\frac{27}{64}\right)^{-\frac{2}{3}} = \left(\frac{64}{27}\right)^{\frac{2}{3}} = \left(\frac{4}{3}\right)^2 = \frac{16}{9}$

**Roots**

Roots are the inverse operations to powers

$7 \xrightarrow{\square^2} 49$   
 $49 \xrightarrow{\sqrt{\square}} 7$

$\sqrt[3]{\quad}$  Cube root

These laws can be applied if the bases are the same

$x^a \times x^b = x^{a+b}$  When multiplying powers with the same base - Add the powers

$z^3 \times z^7 = z^{10}$

$x^a \div x^b = x^{a-b}$  When dividing powers with the same base - Subtract the powers

$s^2 \div s^5 = s^{-3}$

$(x^a)^b = x^{a \times b}$  When raising the power (brackets) - Multiply the powers

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

<b>Prime Number</b>	A number with exactly two factors.  A number that can only be divided by itself and one.  The number 1 is not prime, as it only has one factor, not two.	The first eight prime numbers are:  2, 3, 5, 7, 11, 13, 17, 19
<b>Prime Factor</b>	A factor which is a prime number.	The prime factors of 18 are:  2, 3
<b>Product of Prime Factors 'Prime factorisation'</b>	Finding out which prime numbers multiply together to make the original number.  Use a prime factor tree.	



# St Joseph's College Math Department

## Autumn Term: Indices & Standard Form (Half-Term 1)

This topic includes using negative indices, work out powers of fractions. Writing numbers using standard form. Order numbers written in standard form.



Topic	Definition/Tip	Example
<b>'Special' Powers</b>	$p = p^1$ They are the same thing! Just like $x$ means $1x$ .  $p^0 = 1$ Anything to the power of zero is 1! Apart from $0^0$ , which we don't know!	$99999^0 = 1$  $99999^1 = 99999$
<b>Negative Powers</b>	A negative power is the reciprocal of the positive power.  $a^{-m} = \frac{1}{a^m}$	$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$
<b>Multiplying or Dividing with Standard Form</b>	Multiply: Multiply the numbers and add the powers.	$(1.2 \times 10^3) \times (4 \times 10^6) = 8.8 \times 10^9$
	Divide: Divide the numbers and subtract the powers.	$(4.5 \times 10^5) \div (3 \times 10^2) = 1.5 \times 10^3$
<b>Adding or Subtracting with Standard Form</b>	Convert in to ordinary numbers, calculate and then convert back in to standard form  If the power is too difficult to convert into an ordinary number, see if you can change one number into the same form as another	$2.7 \times 10^4 + 4.6 \times 10^3$ $= 27000 + 4600 = 31600$ $= 3.16 \times 10^4$  $3.1 \times 10^{90} + 2.2 \times 10^{89}$ $= 3.1 \times 10^{90} + 0.22 \times 10^{90}$ $= 3.32 \times 10^{90}$

<b>Multiplication Index Law</b>	When multiplying with the same base (number or letter), add the powers.  $a^m \times a^n = a^{m+n}$  Remember: 1) The base has to be the same 2) The coefficient is not the same as the base	$7^5 \times 7^3 = 7^8$  $a^{12} \times a = a^{13}$  $x^3 \times y^2 = x^3y^2$ (You can't simplify.)  $4x^5 \times 2x^8 = 8x^{13}$ (Multiply the coefficients, add the powers)
<b>Division Index Law</b>	When dividing with the same base (number or letter), subtract the powers.  $a^m \div a^n = a^{m-n}$	$15^7 \div 15^4 = 15^3$  $x^9 \div x^2 = x^7$  $20a^{11} \div 5a^3 = 4a^8$  For coefficients use the same rules as with multiplication
<b>Brackets Index Laws</b>	When raising a power to another power, multiply the powers together.  $(a^m)^n = a^{mn}$  Remember base and coefficient are different.	$(y^2)^5 = y^{10}$  $(6^3)^4 = 6^{12}$  $(5x^6)^3 = 125x^{18}$

### Basic Structure

$1 \leq a < 10 \leftarrow a \times 10^b \rightarrow$  Whole number

$2.83 \times 10^6 = 2830000$   
Positive power of 10 = Large number

$3.14 \times 10^{-4} = 0.000314$   
Negative power of 10 = Small decimal number

### Add/Subtract Standard form

Take numbers out of Standard form. Add/Subtract values. Convert answer back to Standard form.

$(3.23 \times 10^4) + (8.2 \times 10^3)$   
 $= 32300 + 8200$   
 $= 40500$   
 $= 4.05 \times 10^4$

### Multiply/Divide Standard form

Separate the numbers and powers of 10. Multiply/Divide numbers, Apply laws of indices to power of 10s. Give answer in Standard form

$(4.6 \times 10^4) \times (3 \times 10^3)$   
 $4.6 \times 3 \times 10^4 \times 10^3$   
 $13.8 \times 10^7$  ✗  
 $1.38 \times 10^8$  ✓

### Fractional Indices

$x^{\frac{m}{n}} = (\sqrt[n]{x})^m$

Root by denominator first  
Then power of numerator

$x^{\frac{1}{2}} = \sqrt{x}$     $x^{\frac{1}{3}} = \sqrt[3]{x}$     $x^{\frac{1}{4}} = \sqrt[4]{x}$     $x^{\frac{2}{3}} = (\sqrt[3]{x})^2$

$64^{\frac{2}{3}} = (\sqrt[3]{64})^2 = (4)^2 = 16$

### Negative Fractional Indices

$x^{-\frac{a}{b}} = \frac{1}{(\sqrt[b]{x})^a}$

Negative Fractional Powers: Apply reciprocal first!

$9^{-\frac{3}{2}} = \frac{1}{9^{\frac{3}{2}}} = \frac{1}{(\sqrt{9})^3} = \frac{1}{(3)^3}$





# St Joseph's College Math Department

Autumn Term: Quadratics and Formulae (Half Term 2)



This topic includes: Sequences, Expanding, Factorising Solving quadratic equations, Substituting into expressions, Writing expressions and formulae, STEM: Using formulae, Rules of indices and brackets, Expanding double brackets

## Quadratics

An equation where the highest power of the variable is 2

**Factorising  $a \neq 1$  Quadratics**

$$ax^2 + bx + c$$

**Factorising  $a = 1$  Quadratics**

Aim: Convert quadratic into double brackets

**Sum and product rule**      **Establish Signs**

If c is **positive**      Signs are **same**  
 $x^2 + 5x + 6 = (x + 3)(x + 2)$   
 Add to      Multiply       $x^2 + 5x + 6$   
 make b      to make c

If c is **negative**      Signs are **different**  
 $x^2 + 5x - 6 = (x + 6)(x - 1)$   
 Add to      Multiply       $x^2 + 5x - 6$   
 make b      to make c

**Example**

$x^2 - 7x + 12 = (x - 4)(x - 3)$   
 Positive c  $\rightarrow$  Signs Same      Factors of 12      Which pair make 7?  
 Negative b  $\rightarrow$  Both Minus       $12 \times 1$        $4 \times 3$   
 $6 \times 2$

**Difference of Two Squares (DOTS)**

$$a^2 - b^2 = (a + b)(a - b)$$

$$x^2 - 81 = (x + 9)(x - 9)$$

$$4y^2 - 25 = (2y + 5)(2y - 5)$$

## Formulae

**Introduction**

Explains how to calculate the value of a variable

"The price of a taxi fare in Manchester depends on the distance driven. Each fare is charged a flat fee of £2 and then £3 for each mile driven."

$$C = 2 + 3M$$

For any given trip, can easily work out the cost of a taxi

**Area of circle formula**

$$A_c = \pi r^2$$

*Subject*

**Substitution**

Replace letters in the formula with numbers you are given

"The perimeter of a square is 4 times the length of its sides"

$$P = 4l$$

What is perimeter of a square with **side length 5cm?**

$$l = 5 \quad P = 4(5)$$

$$P = 20cm$$

Identify the formula and the values to substitute in.

Substitute values in using brackets

Carry out calculation remembering BIDMAS

**Changing the subject**

Often it is useful to re-arrange a formula to make a different variable the subject

Make  $l$  the subject of the formula

$$P = 4l \quad \rightarrow \quad \frac{P}{4} = l$$

Use inverse operations

$$y = \frac{18t - 3}{p} \quad \text{Make } t \text{ the subject}$$

$$\times p \quad +3 \quad +18$$

$t = \frac{py + 3}{18}$

Sometimes a variable will appear more than once in a formula

Make  $x$  the subject of the formula:

$$a = 5x + xy \quad \rightarrow \quad a = x(5 + y)$$

**Factorise first**       $\frac{a}{5 + y} = x$

Topic/Skill	Definition/Tips	Example
1. Quadratic	A quadratic expression is of the form $ax^2 + bx + c$ where $a, b$ and $c$ are numbers, $a \neq 0$	Examples of quadratic expressions: $x^2$ $8x^2 - 3x + 7$  Examples of non-quadratic expressions: $2x^3 - 5x^2$ $9x - 1$
2. Factorising Quadratics	When a quadratic expression is in the form $x^2 + bx + c$ find the two numbers that add to give $b$ and multiply to give $c$ .	$x^2 + 7x + 10 = (x + 5)(x + 2)$ (because 5 and 2 add to give 7 and multiply to give 10)  $x^2 + 2x - 8 = (x + 4)(x - 2)$ (because +4 and -2 add to give +2 and multiply to give -8)
3. Difference of Two Squares	An expression of the form $a^2 - b^2$ can be factorised to give $(a + b)(a - b)$	$x^2 - 25 = (x + 5)(x - 5)$ $16x^2 - 81 = (4x + 9)(4x - 9)$
4. Solving Quadratics ( $ax^2 = b$ )	Isolate the $x^2$ term and square root both sides. Remember there will be a positive and a negative solution.	$2x^2 = 98$ $x^2 = 49$ $x = \pm 7$
5. Solving Quadratics ( $ax^2 + bx = 0$ )	Factorise and then solve = 0.	$x^2 - 3x = 0$ $x(x - 3) = 0$ $x = 0$ or $x = 3$
6. Solving Quadratics by Factorising ( $a = 1$ )	Factorise the quadratic in the usual way. Solve = 0 Make sure the equation = 0 before factorising.	Solve $x^2 + 3x - 10 = 0$ Factorise: $(x + 5)(x - 2) = 0$ $x = -5$ or $x = 2$



# St Joseph's College Math Department

Spring Term: Non-Linear Graphs (Half Term 3)



This topic includes: Graphs of Quadratic Functions, Solving Quadratic Equations, Graphs of Cubic Functions, Reciprocal Graphs

Topic/Skill	Definition/Tips	Example
1. Quadratic Graph	A 'U-shaped' curve called a <b>parabola</b> . The equation is of the form $y = ax^2 + bx + c$ , where $a$ , $b$ and $c$ are numbers, $a \neq 0$ . If $a < 0$ , the parabola is <b>upside down</b> .	
2. Cubic Graph	The equation is of the form $y = ax^3 + k$ , where $k$ is a number. If $a > 0$ , the curve is <b>increasing</b> . If $a < 0$ , the curve is <b>decreasing</b> .	
3. Reciprocal Graph	The equation is of the form $y = \frac{A}{x}$ , where $A$ is a number and $x \neq 0$ . The graph has <b>asymptotes</b> on the $x$ -axis and $y$ -axis.	
4. Asymptote	A <b>straight line</b> that a graph <b>approaches but never touches</b> .	
5. Roots of a Quadratic	A root is a <b>solution</b> . The roots of a quadratic are the <b><math>x</math>-intercepts of the quadratic graph</b> .	

When we are given a system of equations, we can find the solutions to these equations algebraically (simultaneous equations) or **graphically**.

$2x + 3y = 18$   
 $y = x + 1$

Solve simultaneously or **graph** each equation

$y = x^2 - 2$   
 $y = 2x + 1$

Solve simultaneously or **graph** each equation

Find the solutions of  $x$  when  $x^2 - 2 = 7$

The point of intersection will be your solutions. The point where  $x$  and  $y$  have the same value for each equation.  
 $x = 3 \quad y = 4$

Two intersections = **two sets of solutions**  
 $x = 3 \quad y = 7$   
 or  
 $x = -1 \quad y = -1$

Plot graph and read off points  
 $x = 3$   
 or  
 $x = -3$

Plot each equation separately

Identify and read off the points of intersections for your solutions

Use graph to read off specific values for  $x$  and  $y$

---

### Quadratic graphs

Positive quadratic 'u' shape ☺

Negative quadratic 'n' shape ☹

The points where the graph crosses the  $x$  axis are known as **roots**.

These are the solutions to the quadratic when it equals zero

Maximum and minimum points

The line of symmetry runs through these points

To plot graphs

Substitute the  $x$  values into equation to get  $y$  and plot points like coordinates

Read off coordinate point from graph

Find the midpoint of the roots and substitute into equation to calculate  $y$  - coordinate

Complete the square in the form  $(x - p)^2 + q$

Max/min point can be found by  $\rightarrow (p, q)$

### Cubic graphs

Can be defined as an equation where the highest power of the variable (usually  $x$ ) is 3

$y = x^3 + 3x^2 + 5x - 20$

Positive Cubic goes Upwards

Negative Cubic goes Downwards

Maximum vertex

Minimum vertex

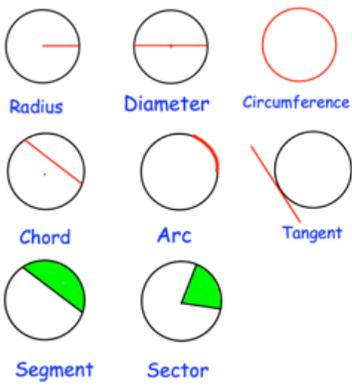


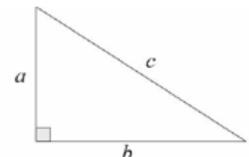
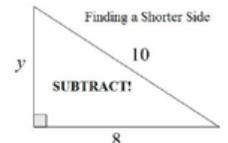
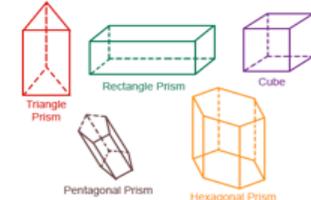
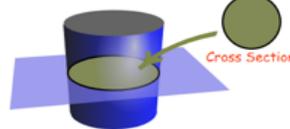
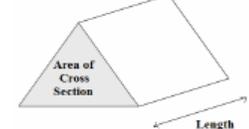
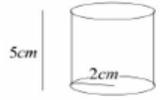
# St Joseph's College Math Department

Spring Term: Circles, Pythagoras and Prisms (Half Term 3)

This topic includes: Circumference of a Circle, Area of a Circle, Pythagoras' Theorem, Prisms and Cylinders



Topic/Skill	Definition/Tips	Example
1. Circle	A circle is the locus of all points equidistant from a central point.	
2. Parts of a Circle	<p><b>Radius</b> - the distance from the centre of a circle to the edge</p> <p><b>Diameter</b> - the total distance across the width of a circle through the centre.</p> <p><b>Circumference</b> - the total distance around the outside of a circle</p> <p><b>Chord</b> - a straight line whose end points lie on a circle</p> <p><b>Tangent</b> - a straight line which touches a circle at exactly one point</p> <p><b>Arc</b> - a part of the circumference of a circle</p> <p><b>Sector</b> - the region of a circle enclosed by two radii and their intercepted arc</p> <p><b>Segment</b> - the region bounded by a chord and the arc created by the chord</p>	<p>Parts of a Circle</p> 
3. Area of a Circle	$A = \pi r^2$ which means 'pi x radius squared'.	If the radius was 5cm, then: $A = \pi \times 5^2 = 78.5cm^2$
4. Circumference of a Circle	$C = \pi d$ which means 'pi x diameter'	If the radius was 5cm, then: $C = \pi \times 10 = 31.4cm$
5. $\pi$ ('pi')	Pi is the circumference of a circle divided by the diameter.  $\pi \approx 3.14$	

Topic/Skill	Definition/Tips	Example
6. Pythagoras' Theorem	<p>For any right angled triangle:</p> $a^2 + b^2 = c^2$  <p>Used to find missing lengths. a and b are the shorter sides, c is the hypotenuse (longest side).</p>	<p>Finding a Shorter Side</p>  <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <math>a = y, b = 8, c = 10</math>  <math>a^2 = c^2 - b^2</math>  <math>y^2 = 100 - 64</math>  <math>y^2 = 36</math>  <math>y = 6</math> </div>
7. Prism	A prism is a 3D shape whose cross section is the same throughout.	
8. Cross Section	The cross section is the shape that continues all the way through the prism.	
9. Volume of a Prism	$V = \text{Area of Cross Section} \times \text{Length}$ $V = A \times L$	
10. Volume of a Cylinder	$V = \pi r^2 h$	 $V = \pi(4)(5) = 62.8cm^3$

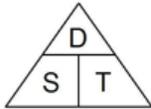
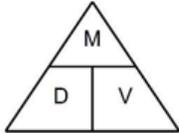
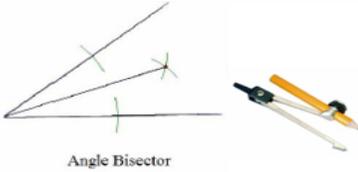
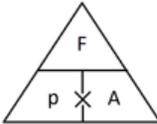
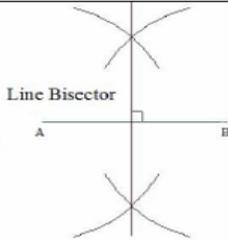
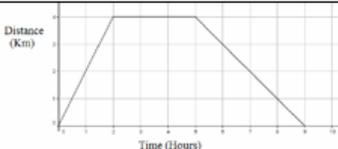
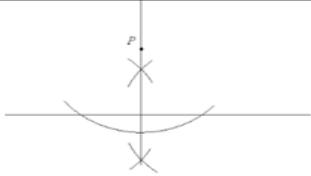


# St Joseph's College Math Department

Spring Term: Accuracy and Measures, Construction (Half-Term 4)

This topic includes: Rates of Change, Density and Pressure, Upper and Lower Bounds, Calculating with Bounds, Using Scales, Constructing Triangles



Topic/Skill	Definition/Tips	Example	Topic/Skill	Definition/Tips	Example
1. Speed, Distance, Time	<p>Speed = Distance ÷ Time            Distance = Speed × Time            Time = Distance ÷ Speed</p>  <p>Remember the correct units.</p>	<p>Speed = 4mph            Time = 2 hours</p> <p>Find the Distance.</p> $D = S \times T = 4 \times 2 = 8 \text{ miles}$	5. Error Interval	<p>A <b>range of values</b> that a number could have taken before being rounded or truncated.</p> <p>An error interval is written using inequalities, with a <b>lower bound</b> and an <b>upper bound</b>.</p> <p>Note that the lower bound inequality can be 'equal to', but the upper bound cannot be 'equal to'.</p>	<p>0.6 has been rounded to 1 decimal place.</p> <p>The error interval is:</p> $0.55 \leq x < 0.65$ <p>The lower bound is 0.55            The upper bound is 0.65</p>
2. Density, Mass, Volume	<p>Density = Mass ÷ Volume            Mass = Density × Volume            Volume = Mass ÷ Density</p>  <p>Remember the correct units.</p>	<p>Density = 8kg/m<sup>3</sup>            Mass = 2000g</p> <p>Find the Volume.</p> $V = M \div D = 2 \div 8 = 0.25\text{m}^3$	6. Angle Bisector	<p><b>Angle Bisector: Cuts the angle in half.</b></p> <ol style="list-style-type: none"> <li>Place the sharp end of a pair of compasses on the vertex.</li> <li>Draw an arc, marking a point on each line.</li> <li>Without changing the compass put the compass on each point and mark a centre point where two arcs cross over.</li> <li>Use a ruler to draw a line through the vertex and centre point.</li> </ol> 	
2. Pressure, Force, Area	<p>Pressure = Force ÷ Area            Force = Pressure × Area            Area = Force ÷ Pressure</p>  <p>Remember the correct units.</p>	<p>Pressure = 10 Pascals            Area = 6cm<sup>2</sup></p> <p>Find the Force</p> $F = P \times A = 10 \times 6 = 60 \text{ N}$	7. Perpendicular Bisector	<p><b>Perpendicular Bisector: Cuts a line in half and at right angles.</b></p> <ol style="list-style-type: none"> <li>Put the sharp point of a pair of compasses on A.</li> <li>Open the compass over half way on the line.</li> <li>Draw an arc above and below the line.</li> <li>Without changing the compass, repeat from point B.</li> <li>Draw a straight line through the two intersecting arcs.</li> </ol> 	
4. Distance-Time Graphs	<p>You can find the <b>speed</b> from the <b>gradient</b> of the line (Distance ÷ Time)            The steeper the line, the quicker the speed.            A <b>horizontal line</b> means the object is not moving (<b>stationary</b>).</p>		8. Perpendicular from an External Point	<p>The <b>perpendicular distance</b> from a point to a line is the <b>shortest distance</b> to that line.</p> <ol style="list-style-type: none"> <li>Put the sharp point of a pair of compasses on the point.</li> <li>Draw an arc that crosses the line twice.</li> <li>Place the sharp point of the compass on one of these points, open over half way and draw an arc above and below the line.</li> <li>Repeat from the other point on the line.</li> <li>Draw a straight line through the two intersecting arcs.</li> </ol> 	



# St Joseph's College Math Department

Spring Term: Multiplicative Reasoning (Half Term 4)



This topic includes: Using Ratios, Using Proportions, Problem solving using Proportions, Measures & Conversions, Direct/Inverse Proportion

Topic/Skill	Definition/Tips	Example
1. Ratio	Ratio compares the size of <b>one part</b> to <b>another part</b> .  Written using the ':' symbol.	<b>3 : 1</b> 
2. Proportion	Proportion compares the size of <b>one part</b> to the size of the <b>whole</b> .  Usually written as a fraction.	In a class with 13 boys and 9 girls, the proportion of boys is $\frac{13}{22}$ and the proportion of girls is $\frac{9}{22}$
3. Simplifying Ratios	<b>Divide</b> all parts of the ratio by a <b>common factor</b> .	5 : 10 = 1 : 2 (divide both by 5) 14 : 21 = 2 : 3 (divide both by 7)
4. Ratios in the form 1 : n or n : 1	<b>Divide</b> both parts of the ratio by one of the numbers to make <b>one part equal 1</b> .	5 : 7 = 1 : $\frac{7}{5}$ in the form 1 : n 5 : 7 = $\frac{5}{7}$ : 1 in the form n : 1
5. Sharing in a Ratio	1. <b>Add</b> the total parts of the ratio. 2. <b>Divide</b> the amount to be shared by this value to find the value of one part. 3. <b>Multiply</b> this value by each part of the ratio.  Use only if you <b>know the total</b> .	Share £60 in the ratio 3 : 2 : 1.  3 + 2 + 1 = 6 60 ÷ 6 = 10 3 × 10 = 30, 2 × 10 = 20, 1 × 10 = 10 £30 : £20 : £10
6. Proportional Reasoning	Comparing two things using <b>multiplicative reasoning</b> and applying this to a new situation.  Identify one multiplicative link and use this to find missing quantities.	
7. Unitary Method	Finding the <b>value of a single unit</b> and then finding the necessary value by <b>multiplying</b> the single unit value.	3 cakes require 450g of sugar to make. Find how much sugar is needed to make 5 cakes.  3 cakes = 450g So 1 cake = 150g (÷ by 3) So 5 cakes = 750 g (x by 5)
8. Ratio already shared	Find what <b>one part</b> of the ratio is worth using the <b>unitary method</b> .	Money was shared in the ratio 3:2:5 between Ann, Bob and Cat. Given that Bob had £16, found out the total amount of money shared.  £16 = 2 parts So £8 = 1 part 3 + 2 + 5 = 10 parts, so 8 × 10 = £80
9. Best Buys	Find the <b>unit cost</b> by dividing the <b>price</b> by the <b>quantity</b> . The <b>lowest</b> number is the best value.	8 cakes for £1.28 → 16p each (÷ by 8) 13 cakes for £2.05 → 15.8p each (÷ by 13) Pack of 13 cakes is best value.

Topic/Skill	Definition/Tips	Example
10. Metric System	A system of measures based on:  - the metre for length - the kilogram for mass - the second for time  <b>Length:</b> mm, cm, m, km <b>Mass:</b> mg, g, kg <b>Volume:</b> ml, cl, l	1kilometres = 1000 metres 1 metre = 100 centimetres 1 centimetre = 10 millimetres  1 kilogram = 1000 grams
11. Direct Proportion	If two quantities are in direct proportion, as <b>one increases, the other increases</b> by the same percentage.  If y is directly proportional to x, this can be written as $y \propto x$  An equation of the form $y = kx$ represents direct proportion, where <b>k is the constant of proportionality</b> .	
12. Inverse Proportion	If two quantities are inversely proportional, as <b>one increases, the other decreases</b> by the same percentage.  If y is inversely proportional to x, this can be written as $y \propto \frac{1}{x}$  An equation of the form $y = \frac{k}{x}$ represents inverse proportion.	
13. Using proportionality formulae	<b>Direct:</b> $y = kx$ or $y \propto x$  <b>Inverse:</b> $y = \frac{k}{x}$ or $y \propto \frac{1}{x}$  1. <b>Solve to find k</b> using the pair of values in the question. 2. <b>Rewrite the equation</b> using the k you have just found. 3. <b>Substitute the other given value</b> from the question in to the equation to <b>find the missing value</b> .	p is directly proportional to q. When p = 12, q = 4. Find p when q = 20.  1. $p = kq$ $12 = k \times 4$ so $k = 3$  2. $p = 3q$  3. $p = 3 \times 20 = 60$ , so $p = 60$



# St Joseph's College Math Department

Summer Term: Sequences and Graphs (Half-term 5)

This topic includes: Simultaneous equations and graphs and Inequalities



### Simultaneous equations

Equations involving two or more unknowns that are to have the same values in each equation

$$\begin{array}{l} 4x + 3y = 5 \\ 3x + 2y = 4 \end{array} \quad \begin{array}{l} 2x - 3y = 4 \\ 5x + 2y = 1 \end{array} \quad \begin{array}{l} 3y + 10x = 7 \\ y = 2x + 1 \end{array}$$

### Linear equations (Elimination method)

Multiply equations to get matching coefficients

$$\begin{array}{r} 4x + 3y = 5 \times 3 \\ 3x + 2y = 4 \times 4 \end{array} \Rightarrow \begin{array}{r} 12x + 9y = 15 \\ -12x + 8y = 16 \end{array} \Rightarrow y = -1$$

Add/subtract equations

Substitute to find second variable

Substitute  $y = -1$  into equation 2

$$3x + 2(-1) = 4 \Rightarrow 3x - 2 = 4 \Rightarrow x = 2$$

**Matching coefficients:**  
Same signs (Subtract the equations)  
Opposite signs (Add the equations)

### Linear equations (Substitution method)

$$3y + 10x = 7 \Rightarrow 3y + 10x = 7$$

$$y - 2x = 1 \Rightarrow y = 2x + 1$$

Rearrange to get a single variable on its own

Substitute equations to find first variable

Substitute to find second variable

Substitute  $y = 2x + 1$  into equation 1

$$3(2x + 1) + 10x = 7$$

$$16x + 3 = 7$$

$$x = 0.25$$

Substitute  $x = 0.25$  into equation 2

$$y = 2(0.25) + 1 \Rightarrow y = 1.5$$

### Quadratic equations (Substitution method)

$$y = x + 6 \Rightarrow x + 6 = x^2 - 2x + 2$$

$$y = x^2 - 2x + 2 \Rightarrow 0 = x^2 - 3x - 4$$

Substitute equation into quadratic and rearrange to = 0

$$(x + 1)(x - 4) = 0 \Rightarrow x = -1 \text{ or } +4$$

Factorise and find two solutions for variable

$$y = (-1) + 6 \Rightarrow y = 5$$

$$y = (4) + 6 \Rightarrow y = 10$$

Substitute each answer to find other pair of solutions

Topic/Skill	Definition/Tips	Example
Inequality	An inequality says that two values are <b>not equal</b> . $a \neq b$ means that a is not equal to b.	$7 \neq 3$ $x \neq 0$
Inequality symbols	$x > 2$ means <b>x is greater than 2</b> $x < 3$ means <b>x is less than 3</b> $x \geq 1$ means <b>x is greater than or equal to 1</b> $x \leq 6$ means <b>x is less than or equal to 6</b>	State the integers that satisfy $-2 < x \leq 4$ . -1, 0, 1, 2, 3, 4
Inequalities on a Number Line	Inequalities can be shown on a number line. <b>Open circles</b> are used for numbers that are <b>less than or greater than</b> ( $<$ or $>$ ) <b>Closed circles</b> are used for numbers that are <b>less than or equal to or greater than or equal</b> ( $\leq$ or $\geq$ )	 $x \geq 0$ $x < 2$ $-5 \leq x < 4$
Graphical Inequalities	Inequalities can be represented on a coordinate grid. If the inequality is <b>strict</b> ( $x > 2$ ) then use a <b>dotted line</b> . If the inequality is <b>not strict</b> ( $x \leq 6$ ) then use a <b>solid line</b> . <b>Shade the region</b> which satisfies all the inequalities.	Shade the region that satisfies: $y > 2x$ , $x > 1$ and $y \leq 3$ 

Topic/Skill	Definition/Tips	Example
Solving Simultaneous Equations (Graphically)	<b>Draw the graphs</b> of the two equations. The <b>solutions</b> will be where the <b>lines meet</b> . The solution can be written as a <b>coordinate</b> .	 $y = 5 - x$ and $y = 2x - 1$ . They meet at the point with coordinates (2,3) so the answer is $x = 2$ and $y = 3$



# St Joseph's College Math Department

Summer Term: Probability (Half-Term 5)



This topic includes Language of probability, mutually exclusive events, relative frequency, experimental probability, sample space and tree diagrams

Topic/Skill	Definition/Tips	Example
Probability	The <b>likelihood/chance</b> of something happening.  Is expressed as a number <b>between 0 (impossible) and 1 (certain)</b> .  Can be expressed as a fraction, decimal, percentage or in words (likely, unlikely, even chance etc.)	 Impossible   Unlikely   Even Chance   Likely   Certain 1-in-6 Chance   4-in-5 Chance
Probability Notation	<b>P(A)</b> refers to the <b>probability that event A will occur</b> .	P(Red Queen) refers to the probability of picking a Red Queen from a pack of cards.
Theoretical Probability	$\frac{\text{Number of Favourable Outcomes}}{\text{Total Number of Possible Outcomes}}$	Probability of rolling a 4 on a fair 6-sided die = $\frac{1}{6}$ .
Relative Frequency	$\frac{\text{Number of Successful Trials}}{\text{Total Number of Trials}}$	A coin is flipped 50 times and lands on Tails 29 times. The relative frequency of getting Tails = $\frac{29}{50}$
Expected Outcomes	To find the number of expected outcomes, <b>multiply the probability by the number of trials</b> .	The probability that a football team wins is 0.2 How many games would you expect them to win out of 40? $0.2 \times 40 = 8 \text{ games}$

Sample Space	The <b>set of all possible outcomes</b> of an experiment.	<table border="1"> <tr><td>+</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> </table>	+	1	2	3	4	5	6	1	2	3	4	5	6	7	2	3	4	5	6	7	8	3	4	5	6	7	8	9	4	5	6	7	8	9	10	5	6	7	8	9	10	11	6	7	8	9	10	11	12
+	1	2	3	4	5	6																																													
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5	6	7	8	9	10	11																																													
6	7	8	9	10	11	12																																													
Sample	A <b>sample</b> is a small selection of items from a population.  A sample is <b>biased</b> if individuals or groups from the population are not represented in the sample.	A sample could be selecting 10 students from a year group at school.																																																	
Sample Size	The larger a sample size, the closer those probabilities will be to the true probability.	A sample size of 100 gives a more reliable result than a sample size of 10.																																																	

### Introduction

The likelihood of an event happening

1/4	1/2	3/4		
0%	25%	50%	75%	100%
0	0.25	0.5	0.75	1

Impossible   Even Chance   Certain

### Counting outcomes

Working out how many combinations there are

Rolling a die and flipping a coin

	1	2	3	4	5	6
Heads	H, 1	H, 2	H, 3	H, 4	H, 5	H, 6
Tails	T, 1	T, 2	T, 3	T, 4	T, 5	T, 6

This is a sample space diagram

There are **12** possible outcomes from this event

### Calculating probability

$$P(\text{Event}) = \frac{\text{number of successful outcomes}}{\text{total number of outcomes}}$$

$P(3) = \frac{2}{8} \Rightarrow \frac{1}{4}$    Simplify answers where possible

### The 'OR' rule (mutually exclusive)

$$P(a \text{ or } b) = P(a) + P(b)$$

$P(2 \text{ or } 4) = \frac{2}{8} + \frac{1}{8} \Rightarrow \frac{3}{8}$    Add each probability

### The 'AND' rule (independent)

$$P(a \text{ and } b) = P(a) \times P(b)$$

Flip a coin twice  
 $P(2 \text{ tails}) = \frac{1}{2} \times \frac{1}{2} \Rightarrow \frac{1}{4}$    Multiply each probability

### Types of events

#### Mutually exclusive

Events that cannot happen at the same time  
Rolling a die  $\rightarrow P(1 \text{ and } 6)$   
All probabilities from the event will **sum** to make **1**

#### Independent events

Events where the outcome of one **doesn't** affect the outcomes of the others  
Picking a counter out of a bag, replacing it and repeating.

#### Dependent events

Events where the outcome of one **does** affect the outcomes of the others  
Picking a counter out of a bag, **not** replacing it and repeating.

### Calculating expected outcomes

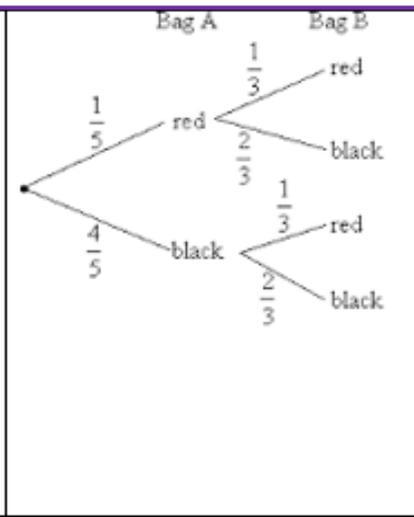
$$P(\text{event}) \times \text{number of trials}$$

### Tree Diagrams

Tree diagrams show **all the possible outcomes** of an event and calculate their probabilities.

**All branches must add up to 1 when adding downwards.**  
This is because the **probability of something not happening is 1 minus the probability that it does happen.**

**Multiply going across** a tree diagram.  
**Add going down** a tree diagram.





This topic includes the four types of transformations - Translations, Enlargements, Reflections and Rotations

Topic/Skill	Definition/Tips	Example
Translation	<b>Translate</b> means to <b>move a shape</b> . The shape does not change <b>size</b> or <b>orientation</b> .	
Column Vector	In a column vector, the <b>top</b> number moves <b>left (-)</b> or <b>right (+)</b> and the <b>bottom</b> number moves <b>up (+)</b> or <b>down (-)</b>	$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ means '2 right, 3 up' $\begin{pmatrix} -1 \\ -5 \end{pmatrix}$ means '1 left, 5 down'
Rotation	The size does not change, but the <b>shape is turned around a point</b> .  Use tracing paper.	Rotate Shape A 90° anti-clockwise about (0,1)  
Reflection	The size does not change, but the shape is ' <b>flipped</b> ' like in a <b>mirror</b> .  Line $x = ?$ is a <b>vertical</b> line. Line $y = ?$ is a <b>horizontal</b> line. Line $y = x$ is a <b>diagonal</b> line.	Reflect shape C in the line $y = x$  
Enlargement	The shape will get <b>bigger</b> or <b>smaller</b> . Multiply each side by the <b>scale factor</b> .	Scale Factor = 3 means '3 times larger = multiply by 3'  Scale Factor = $\frac{1}{2}$ means 'half the size = divide by 2'

Topic/Skill	Definition/Tips	Example
Finding the Centre of Enlargement	Draw <b>straight lines</b> through <b>corresponding corners</b> of the two shapes. The centre of enlargement is the point <b>where all the lines cross over</b> .  Be careful with negative enlargements as the corresponding corners will be the other way around.	
Describing Transformations	Give the following information when describing each transformation:  Look at the number of marks in the question for a hint of how many pieces of information are needed.  If you are asked to describe a 'transformation', you need to say the <b>name of the type of transformation</b> as well as the other details.	<ul style="list-style-type: none"> <li>- Translation, Vector</li> <li>- Rotation, Direction, Angle, Centre</li> <li>- Reflection, Equation of mirror line</li> <li>- Enlargement, Scale factor, Centre of enlargement</li> </ul>
Negative Scale Factor Enlargements	Negative enlargements will <b>look like they have been rotated</b> .  $SF = -2$ will be rotated, and also twice as big.	Enlarge ABC by scale factor -2, centre (1,1)  



# St Joseph's College Math Department

Summer Term: Trigonometry (Half-term 6)



This topic includes identifying the sides of a right angle triangle, applying trigonometric ratios, plot and sketch trigonometric graphs

Topic/Skill	Definition/Tips	Example
Trigonometry	The <b>study of triangles</b> .	
Hypotenuse	The <b>longest side</b> of a <b>right-angled triangle</b> .  Is always <b>opposite</b> the <b>right angle</b> .	
Adjacent	<b>Next to</b>	
Trigonometric ratio	Use <b>SOHCAHTOA</b> .  $\sin \theta = \frac{O}{H}$ $\cos \theta = \frac{A}{H}$ $\tan \theta = \frac{O}{A}$  When finding a missing angle, use the 'inverse' trigonometric function by pressing the 'shift' button on the calculator.	<p>Use 'Opposite' and 'Adjacent', so use 'tan'</p> $\tan 35 = \frac{x}{11}$ $x = 11 \tan 35 = 7.70 \text{ cm}$ <p>Use 'Adjacent' and 'Hypotenuse', so use 'cos'</p> $\cos x = \frac{5}{7}$ $x = \cos^{-1}\left(\frac{5}{7}\right) = 44.4^\circ$

Trigonometry is used to calculate sides lengths and angles in triangles using three important ratios. Sine, Cosine and Tangent

The angle is often described as theta which is the Greek letter ( $\theta$ )

Sine Function

Work out side lengths and angles when given the **opposite** and **hypotenuse**

$$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

sin

sinθ	Value
0°	0
30°	0.5
45°	$\frac{\sqrt{2}}{2} = 0.707$
60°	$\frac{\sqrt{3}}{2} = 0.866$
90°	1

To get  $\sin^{-1}$  you have to press shift first

Only used to calculate an angle

Cosine Function

Work out side lengths and angles when given the **adjacent** and **hypotenuse**

$$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

cos

cosθ	Value
0°	1
30°	$\frac{\sqrt{3}}{2} = 0.866$
45°	$\frac{\sqrt{2}}{2} = 0.707$
60°	0.5
90°	0

To get  $\cos^{-1}$  you have to press shift first

Only used to calculate an angle

Tangent Function

Work out side lengths and angles when given the **adjacent** and **opposite**

$$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$

tan

tanθ	Value
0°	0
30°	$\frac{\sqrt{3}}{3}$
45°	1
60°	$\sqrt{3}$

To get  $\tan^{-1}$  you have to press shift first

Only used to calculate an angle

**Fluency**  
Which trigonometric ratio should you use to work out length  $a$ ?

**Fluency**  
Calculate

- $\cos 56^\circ$
- $\sin^{-1} \frac{3}{4}$
- $\tan^{-1} 0.3$

Round each answer to 1 d.p.

**Key point**

You can use **inverse** trigonometric functions to work out unknown angles.

$\cos \theta = x$ , so  $\theta = \cos^{-1} x$

$\sin \theta = x$ , so  $\theta = \sin^{-1} x$

$\tan \theta = x$ , so  $\theta = \tan^{-1} x$

**Investigation**

1 Complete this table.

$\theta$	$\sin \theta$	$\cos \theta$	$\tan \theta$	$\frac{\sin \theta}{\cos \theta}$
40°				
80°				
110°				

2 What do you notice?  
3 Test your answer by trying three other values for  $\theta$ .  
4 Show why your pattern always works using this right-angled triangle.



# St Joseph's College Music Department

## Autumn Term 1: Dance Music (1)



This term we will learn about electronic Dance Music, its music elements and Perform Truly, Madly, Deeply and Titanium

### Keywords:

- Synthesiser**- an electronic keyboard which has the ability to create its own sounds.
- Sequencer**- a music computer programme that you can record, edit and mix music.
- Sound Card**- a computer component that allows to translate information into sound
- Drum Machine**- and electronic device that allows you to record/perform drum rhythms/beats
- 4/4 (common time)**- 4 beats in a bar the most common time used in Dance music
- Devices**- different electronic equipment
- Synchronisation**- making different devices communicate with each other

### What is Dance Music?

**Electronic Dance Music** was developed in the 80's with the rise of personal computers. Musicians used **synthesisers**, **sound cards** and **drum machines** to interact with each other and get full synchronisation of sounds. **Electronic Dance Music** is typically composed using **computers** and **synthesisers** and rarely has any physical instruments. It is mostly composed in common time (4/4).

### Dance Music Performance:

Dance music pieces Truly, Madly, Deeply and Titanium to be performed attempting the left hand accompaniment chords.

### Dance Music Elements and Music Sequencing Programmes:



Sequencer



Synthesiser



Logic Pro X

Drum Machine



Sound Card



4/4 common time (4 beats in a bar)

The image displays two musical scores. On the left is 'Titanium' by David Guetta featuring Sia, with lyrics such as 'You shoot it loud but I can't hear a word you say'. On the right is 'Truly Madly Deeply' by Savage Garden, with lyrics like 'I'm talking loud not say-ing much'. Both scores include piano accompaniment. A red arrow points to the left hand chords in the 'Titanium' score, with the text 'Left hand chords' next to it.

### Questions:

1. When was Dance music developed and how?
2. What is a synthesiser?
3. Describe what a music sequencer does?
4. What is a sound card?
5. What is a drum machine?
6. What is 4/4 (common time)?
7. What are devices?
8. What is synchronisation in Dance Music?









This term we will learn about the Rock genre of music, its origins, instruments and perform 'The House of The Rising Sun'

### Keywords:

**Rock-** is a broad genre of popular music that originated as "rock and roll" in the United States in the late 1940s and early 1950s, and developed into a range of different styles.

**The Animals-** an English rock band, formed in the 1960's in New Castle

**Guitar bridge-** a device that supports the strings on a guitar and transmits the vibration of those strings to another structural component of the instrument.

**Guitar pick ups-** transducers that capture the vibration of the strings and convert them to an electrical signal that can be amplified.

**Pick up switch-** allows the guitar player to choose between different pickups (guitar tones) or a combination of them.

**Volume and control-** allows you to control the volume of your guitar when it is connected to an amplifier.

**Tuning pegs-** they tune the guitar strings by tightening or loosening each string.

### What is Rock Music?

It has its roots in 1940s and 1950s rock and roll, a style which drew heavily from the genres of blues, rhythm and blues, and from country music. Rock music also drew strongly from a number of other genres such as electric blues and folk, and incorporated influences from jazz, classical and other musical styles. Musically, rock has centered on the electric guitar, usually as part of a rock group with electric bass, drums, and one or more singers. Usually, rock is song-based music with a 4/4 time signature using a verse-chorus form, but the genre has become extremely diverse. Like pop music, lyrics often stress romantic love but also address a wide variety of other themes that are frequently social or political.

### Rock Music Performance:

Performing in the melody and chord riff of the song The House of The Rising Sun

### Electric Guitar components



### Drum Kit components



**Melody and Chords**

*Largo*

There is a house in New Or-leans they call the ris - ing sun And it's  
 been the ruin of ma - ny a poor boy, and God, I kn-ow I'm one.

Chords: Dm, F, G, Bb, Dm, F, A7, Dm, Dm, A7, Dm

### Introduction and Chord riff

Chord diagrams and riff notation:

Chords: Dm, F, G, Bb, Dm, A7, Dm, A7, Dm, A7

Riff notation: F A D F D A, F A C# E C# A, G B D G D B, F Bb D F D Bb, F A D F D A, G A C# E C# A, F A D F D A, G A C# E C# A

### Questions:

1. What is Rock Music and where has its roots?
2. What other genres was Rock music influenced by?
3. Who were the Animals?
4. What is a guitar bridge?
5. What does a guitar pick up do? What is a pick up switch?
7. What does the volume and control on a guitar do?
8. What is the purpose of the tuning pegs?



This term we will learn about the development of Rock music, its sub genres and perform the song Yellow

### Keywords:

**Blues rock**- a genre of music that mixes Blues and Rock music together

**Raga rock**- a genre of music that mixes Indian and Rock music, using the electric guitar and the sitar (Indian guitar)

**Jazz rock**- a music genre that developed in the late 1960s when musicians combined jazz harmony and improvisation with rock music

**Punk rock**- a style of music that produced short, fast-paced songs with hard-edged melodies and singing styles and lyrics of political meaning

**Glam rock**- a style of music that developed in the United Kingdom in the early 1970s performed by musicians who wore outrageous costumes, makeup, and hairstyles, particularly platform shoes and glitter.

**Alternative rock**- a style of rock music characterized as unconventional or outside the mainstream.

**Indie rock**- originated in the United States and United Kingdom in the 1970s. The music was produced independently from commercial record labels, a process that may include an autonomous, do-it-yourself approach to recording and publishing.

### The Development of Rock Music

By the late 1960s "classic rock" period, a number of distinct rock music subgenres had emerged, including hybrids like blues rock, folk rock, country rock, southern rock, raga rock, and jazz rock. New genres that emerged included progressive rock, which extended the artistic elements, glam rock, which highlighted showmanship and visual style, and the diverse and enduring subgenre of heavy metal, which emphasized volume, power, and speed. In the second half of the 1970s, punk rock reacted by producing stripped-down, energetic social and political critiques. Punk was an influence in the 1980s on new wave, post-punk and eventually alternative rock. From the 1990s alternative rock began to dominate rock music and break into the mainstream in the form of grunge, Britpop, and indie rock.

### Rock Music Performance:

Performing in the melody and piano riff of the song Clocks by Coldplay

**PSYCHEDELIC ROCK** - The Who, Pink Floyd, Cream, Jimi Hendrix, Beatles, The Doors

**FOLK/COUNTRY ROCK** - The Byrds, The Animals, Crosby, Stills, Nash and Young, The Mamas and the Papas, Bob Dylan, Simon and Garfunkel

**BLUES ROCK** - a popular 'blues' scene developed with such artists as Robert Johnson, Muddy Waters and Howlin' Wolf

**PROGRESSIVE ROCK** - was more experimental with instruments and song forms, producing much longer tracks as they experimented with classical music or electronic effects: Procol Harum, King Crimson, Pink Floyd, Genesis, Yes [also the Beatles and Rolling Stones to some extent]

**PUNK ROCK** - a reaction against progressive rock, with groups wanting to get back to the simple chords and structures - The Damned, the Sex Pistols, the Clash, Patti Smith

**GLAM ROCK** - David Bowie, Alice Cooper, T. Rex, Sweet, Slade

**SOFT ROCK** - emerged in the 80s with bands such as Bon Jovi, Blondie

**HARD/HEAVY ROCK** - a distinctive style associated with lead and rhythm guitars, use of simple riffs, solos, use of distortion and effects: Cream, Jimi Hendrix, Led Zeppelin, Aerosmith, Thin Lizzy, AC/DC, Guns N' Roses, Deep Purple, Def Leppard

**HEAVY METAL** - demonstrated even more intensity and volume, with Black Sabbath, Steppenwolf, Metallica, Iron Maiden

**POP ROCK** - Beautiful South, Madonna, Elton John, Paul McCartney, Rod Stewart

**GRUNGE** - Nirvana, Soundgarden, Pearl Jam

**BRITPOP** - a reaction against 'grunge' with a wave of new British groups such as Oasis, Blur, Supergrass, Suede and Pulp looking back to the pop groups of the 60s for inspiration

**RECENT ROCK STYLES** - include metalcore, thrash, progressive/sludge

### Clocks- Coldplay

Level 4

Coldplay

Arranger: Ido ronon

### Introduction and Piano Riff



### Melody and Chords

### Questions:

1. Which decade did the development of Rock started and name some rock subgenres.
2. What is Blues rock?
3. What is Raga rock?
4. What is Jazz rock?
5. Describe Punk rock music.
6. Describe Glam Rock music?
6. What is Alternative rock?
7. What is Indie rock?



#### Keywords:

- Pass** - Kicking ball to teammate
- Shoot** - Attempting to score a goal
- Attack** - Playing towards opponents goal
- Defence** - Protecting your goal
- Movement** - Creating space off the ball
- Heading** - Using head to shoot or pass
- Control** - Keeping ball close to body
- Penalty** - Awarded if foul committed in penalty area
- Free kick** - Awarded if foul committed outside of area
- Goal kick** - Awarded when ball goes over opposition goal line
- Throw in** - Awarded when ball goes out of play
- Corner kick** - Awarded to attackers if opposition kick ball over goal line

#### Key skills/abilities required:

- Short Passing** - Use inside of foot and place standing foot next to ball
- Long passing** - Use laces for more power if required, standing foot next to ball
- Shooting** - Head and knee over ball, use laces for power, inside of foot for control
- Heading** - Use forehead to make contact with ball
- Movement** - Move into space to receive the ball
- Teamwork** - Pass the ball to teammates to be successful against opposition
- Aerobic fitness** - Maintain personal fitness to be able to run around for a full game

#### Famous players:



Lionel Messi



Cristiano Ronaldo



Virgil Van Dijk

#### How can you improve?

##### Practice drills

- Pass with a partner** - Stand a short distance apart working on short passing, increase the distance to work on long passing
- Work on weak foot** - Stand in front of a wall kicking the ball repeatedly against the wall with your weaker foot
- Shooting practice** - Make a goal or use a goal, aim for the corners when practising. If you have a goalkeeper friend, put them in goal to add challenge
- Small sided games** - Play small sided games with your friends, 3v3, 4v4, 5v5. Focus on movement in small spaces

#### Questions:

- How many players are on each team in a game of football?
- How long does a professional football match last for?
- Which 3 skills are the most important for a footballer to become one of the best players in the world?
- How many times have England won the football world cup? Name the year(s) for a bonus point..





# St Joseph's College PE Department

## Half term 2 -Handball

Key concepts and skills required for Handball



### Keywords:

**Handling the ball**-Dribbling, catching or passing the ball.

**Passing the ball**- Throwing the ball to another player from the team.

**3 steps**- A player holding the ball is only allowed to make three steps, afterwards he has to dribble or pass the ball.

**Positions**- The seven playing positions are: goalkeeper, left wing, left back, middle back, line player, right back and right wing.

**Blocking the ball**- Basic defensive element: stopping a shot by using hands.

**Zone defence systems**- Can be 6:0 (six players on the goal area line), 5:1 (5 players on the goal area line, one player in front of them)

### Key skills/abilities required:

**Sidestepping**-A technical element of the attacker's basic movement executed by continually moving sideways mainly in width

**Overarm shot**- A shooting technique carried out with the arm moving above the shoulder level.

**Underarm shot**- A shooting technique carried out with the arm moving below shoulder level.

**Jump shot**- A shooting technique performed having the players feet off the floor.

**Bounced shot**- Shooting on goal with the ball hitting the floor on its way.

**Teamwork** - working together in attack and defence up and down the court

**Aerobic fitness** - Maintain personal fitness to be able to run around for a full game

### Famous players:



Mikkel Hansen



Nikola Karabatić



Luc Abalo

### How can you improve?

**Pass with a partner** - Stand a short distance apart working overhand short passing, increase the distance to work on long passing across the court.

**Jump shot**- take 3 steps up to the D and jump as far as you can into the D releasing the ball before touching the floor.

**Getting into position**- run from the players attacking into defensive position as quick as possible.

**Small sided games** - Play small sided games with your friends 3v3, 4v4 5v5. Focus on moving the ball and getting into space.

### Questions:

How many players are on each team in a game of Handball?

How long does a professional handball match last for?

Which 3 skills are the most important for a handball to become one of the best players in the world?

Which country did handball come from?





# St Joseph's College PE Department

## Half term 2- Rugby

### Key concepts and skills required for Rugby



#### Keywords:

**Forward pass**- A forward pass occurs when the ball fails to travel backwards in a pass

**Advantage line**- is an imaginary line drawn across the centre of the pitch when there is a breakdown in open play

**Advantage**- is the period of time after an infringement, in which the non-offending side has the opportunity to gain

**Breakdown**- The breakdown is a colloquial term for the period immediately after a tackle and the ensuing ruck.

**Tackle**- Takes place when one or more opposition players grasp onto the ball carrier and succeed in bringing him to ground

**Knock-on**- A knock-on is when a player loses possession of the ball and goes forward off the hands or arms

**Try**- It is scored when a player places the ball on the ground with downward pressure in the in-goal area.

#### Key skills/abilities required:

**Pop Passing** - Bring the hand across the body and pop the ball to a teammate

**Spin passing** - as the ball comes across the body bring the bottom hand over the top and spin the ball.

**Scoring a try**- use downward pressure on the ball and place it within the try area.

**Tackle**- stopping the opposition by taking them down to the ground.

**Side step**- passing off one foot quickly to change direction and get past the opposition

**Teamwork** - working together in attack and defence to support each other

**Aerobic fitness** - Maintain personal fitness to be able to run around for a full game

#### Famous players:



Kyle Sinckler



Manu Tuilagi



Owen Farrell

#### How can you improve?

##### Passing drills

**Pass with a partner** - Stand a short distance apart working on short passing, increase the distance to work on long passing always passing backwards

**Work on weak hand**- Stand in front of a wall which has a target on pass the kicking the ball repeatedly against the wall with your weaker hand.

**Tackling**- the partner will walk in a straight line the tackler will also walk until they meet and make a tackle

**Small sided touch games** - Play small sided games with your friends 5v5. Focus on attacking and defensive realignment

#### Questions:

How many players are on each team in a game of rugby?

How long does a professional rugby match last for?

Which 3 skills are the most important for a rugby to become one of the best players in the world?

How many times have England won the rugby world cup? Name the year(s) for a bonus point..





# St Joseph's College PE Department

## Half term 3 - Badminton

Key concepts and skills required for Badminton



### Keywords:

**Rally-** a rally is a series of exchanged shots which begin with a serve. As a rule, rallies in badminton finish when the point is won.

**Service-** The service is the initial stroke which starts play when the receiver is stationary and begins a rally

**Shuttlecock-** It refers to the projectile of a feathered (14 to 16 feathers) cork object sent back and forth over the net in competitions.

**Shot-** CLEAR, DRIVE, DROP, SMASH' are four shot terms related to badminton.

**Racket-** The large stringed area with a frame is called the head which is connected to the handle by the shaft.

**Fault-** a foul shot is when a shot hits the net or lands outside the court

### Key skills/abilities required:

**Drop shot-** a shot that just clears the net and then drops sharply

**Clear Shot-** a shot hit deep into the opponent's court

**Drive Shot-** a fast hard shot down into the court

**Smash Shot-** a powerful overhead shot

**Home position-** central position on court which is halfway between the baseline and net, and the two sidelines

**Agility-** ability to move quickly and easily around the court

**Aerobic fitness -** Maintain personal fitness to be able to run around for a full game

### Famous players:



Lin Dan



Viktor Axelsen



Kento Momota

### How can you improve?

**Rally-** Stand on the court opposite a partner and hit the shuttlecock back and forth keeping track of your score.

**Clear shot-** Set a target at the back of the court and try and hit the shuttlecock into the target.

**Home position-** place four cones around the court. Every time you touch a cone you have to return to the home position in the centre of the court.

**Games -** Play first to 5 points with your friends. Focus using a variation of shots

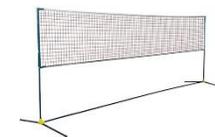
### Questions:

How many points are there in a game of badminton?

Which lines do you play if you are playing singles?

Which 3 skills are the most important for a badminton to become one of the best players in the world?

Who Invented Badminton?





#### Keywords:

- Backhand** - Shot played with back of hand facing opponent
- Backspin** - added to shot to change bounce direction
- Cross-court** Shot played diagonally across court
- Drop shot** - shot that bounces just after the net
- Footwork** - use of feet to get into correct position
- Forehand** - shot played with palm of hand facing opponent
- Game** - achieved after 1 player reaches 11 points or 2 points clear
- Racket** - used to hit ball with
- Rally** - players hitting ball back and forth consecutively
- Serve** - first shot of any point
- Smash** - Shot played to win point if ball bounces high towards you
- Topspin** - Causes ball to bounce higher and faster

#### Key skills/abilities required:

- Forehand Drive** - Ready position; Backswing to include arm and body movement; Forward movement to include the forward swing & contact; Follow through
- Backhand drive** •Crouched facing the direction you would like the ball to travel •Close to the table. Bat moves back towards the stomach with an open angle. •Produced from the elbow as bat moves forward and slightly downwards •Contact the ball underneath and early off the bounce. Follow Through.
- Backhand Serve** - Crouched with left foot slightly forward •Close to the table. ¼ rotation from the waist to the left •Arm rotates back and upwards to the chest. Arm moves forward and downwards as the body unwinds from the waist •Weight transfers from the left to the right foot •Contact in eye line. Follow through

#### Famous swimmers:



Ma Long



Xu Xin



Timo Bell

#### How can you improve?

- German service box game.** Start with ball on tennis cord and let it drop. 1 bounce only, play out point.
- Service box rally** Place hoop or piece of paper in service box. 2 points for hitting target. Make the game harder by folding the paper each time it is hit.
- Back Hand Slice** - in pairs; 1 to play simple forehand to partner, other to practice slice. Swap over roles
- Double fun game-** 2 touch tennis. Must take 2 touches before ball goes over. Highlight ball placement & outwitting opposition. ½ court rallies- place 2 hoops; 1 deep, 1 short. mix up shot selection.

#### Questions:

- How many points are there in a table tennis game?
- How many serves are you allowed in table tennis?
- Do you have to serve diagonally in table tennis?
- When was table tennis introduced as an Olympic sport?





# St Joseph's College PE Department

## Half term 3 - Basketball

Key concepts and skills required for basketball



### Keywords:

- Ball** - Implement used in game of basketball
- Dribbling** - Repeated bounce of the ball whilst moving across the court
- Shooting** - Action taken when trying to score points
- Pass** - Action taken when trying to pass opponents and move up court
- Travel** - Foul play after taking too many steps
- Court** - Area basketball is played on
- Dunk** - Type of shot taken by jumping and placing the ball in the basket
- 3-pointer** - Type of score from shot taken outside the D
- Free throw** - Shot with no pressure from opposition after shooting foul
- Foul** - Obstructing player in illegal manner/gaining an unfair advantage
- Block** - Used when trying to prevent a player from shooting or passing
- Lay-up** - Type of shot used when close to basket

### Key skills/abilities required:

- Dribbling** - Strong body position, eyes up, good on both sides, cross-over, good stance, dribble at speed.
- Passing** - Chest pass, bounce pass and overhead pass are important. Good power and speed are important.
- Shooting** - Balance and bent knees, eyes at basket, elbow at 45 degrees and other hand supporting, follow through with shooting hand and feet in strong position.
- Defence** - Strong base and stable stance. Good at reading tactical attacking play and get there first.
- Attack** - Fast and accurate with passes and shots. Knowledge of screening and tactical movement patterns. Jump height is important.
- Fitness** - Aerobic endurance, speed, power, strength, flexibility, agility and reaction time are all important.

### Famous players:



Zion Williamson



Lebron James



Steph Curry

### How can you improve?

#### 1 on 1 practice

2 players, 1 ball and a basketball. Take it in turns to attack and defend. Really good for both attacking and defending. You can practice a range of shots: lay-ups, jump shots, set shots.

#### General Fitness

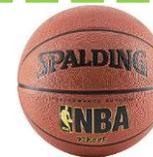
Plyometric training for power and jump height. Strength training to increase overall strength. Sprint training for overall court fitness.

#### Tactical Analysis

Watch live matches and analyse certain players, depending on how performance is to be increased. Specific game situations and body positions set are good to analyse.

### Questions:

- How many players are on each team in a game of basketball?
- How long does a professional basketball match last for? What is the NBA?
- Which 3 skills are the most important for a basketballer to become one of the best players in the world?
- How many times have USA won the Olympics? Name the year(s) for a bonus point..





# St Joseph's College PE Department

## Half term 4 - Swimming

Key concepts and skills required for Swimming



### Keywords:

- Pull, push, kick** - technique used to move when swimming
- Lie flat, streamlined** - helps to stay afloat
- Breathe** - breathing pattern key for correct technique
- Floating** - essential when swimming
- Turning** - occurs at end of pool when swimming lengths
- Sculling** - correct use of hands when swimming
- Slide entry** - a form of pool entry
- Surface diving** - entering the pool at speed into a swim
- Straddle entry** - stride into a pool

### Key skills/abilities required:

- Front Crawl**- your thumb should always enter the water first with your hand at a 45 degree angle. Your arm will twist as you pull your hand back through the water. Pull the water back all the way to your hip before the arm exits the water
- Back Crawl**-legs close together and kick from the hips. Keep ankles relaxed and knee slightly bent. Kick as hard and as fast as you feel comfortable.
- Breast Stroke arms** - The arm action should be continuous from glide to glide; arm action should not start until the legs are together. Keep hands in front of shoulders. The arm action and leg action should remain narrow; Scull with the hands.
- Breast Stroke legs**- Drive the legs backwards, speed should increase during this phase; Drive heels back first; ; Feet should 'whip' together at the end of the kick - kick hands forward; Kick like a frog; Squeeze the legs together.

### Famous swimmers:



Simone Manuel



Adam Peaty



Michael Phelps

### How can you improve?

#### Swimming Practice

- Kicking** - Front Crawl leg kick; Long legs; Kick from the hips (not the knees) ; Floppy feet Small fast kicks (white water)
- Front Crawl Arms**- Fingers enter the water, push forwards (recovery); Hands pull back to the thighs (Catch); High Elbow out of the water (not flat over the surface); Face turns to one side to breath; Unilateral breathing
- Push and Glide** - Tuck Body into a spring position with hand ready to cut the water; Feet against the wall ready to push off; Extend arms with face in, head just under the water; Push off the wall extending arm and legs keeping the body stream lined

### Questions:

- How long in metres is the school swimming pool?
- How long is a Olympic swimming pool?
- What does the word streamline mean? How can we use this in swimming??
- What procedures need to be followed before going into the pool?





# St Joseph's College PE Department

## Half term 5 - Health and Fitness

Key concepts and skills required for Health and Fitness



### Keywords:

- Aerobic** - muscles working with oxygen
- Anaerobic** - muscles working without oxygen
- Sprinting** - running at full speed
- Continuous training** - training without rest at same intensity
- Circuit training** - working at different stations
- Weights** - equipment used to increase strength
- Plyometric** - bouncy movements to improve power
- Cardiovascular fitness** - how well heart and lungs work together
- Heart Rate** - heart beats per minute
- Interval Training** - training with rest intervals
- Intensity** - how hard you work

### Key skills/abilities required:

- Interval Training** - This involves a series of high intensity workouts interspersed with rest or relief periods. This would be running or cycling at a high intensity/sprint for 30 seconds followed by 90 seconds of rest and repeated 5 times.
- Steady State Continuous Training** - running/cycling/rowing/ swimming at the same pace for at least minutes.
- Weight Training** - To improve strength and power , weights are used for resistance. By creating a stress to the muscles performed with free weights (barbell or dumbbells).

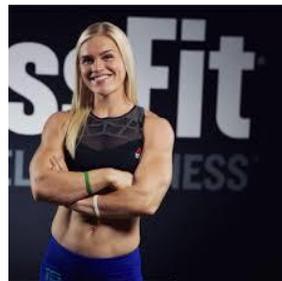
### Famous cross fit athletes:



Matt Fraser



Rich Froning Jr



Katrín Davíðsdóttir

### How can you improve?

- Frequency** - Increase the amount of times you train a week. 3-5 times a week of training is a good focus
- Intensity** - The amount of effort put into your training session. For running a long distance 70-80% is needed. For sprinting and power events, 100% effort is needed in training.
- Time** - The amount of time you train for. An effective workout should last between 30-60 minutes.
- Type** - Doing the type of exercise that improves your sporting performance.

### Questions:

- How long should I run for to improve my aerobic endurance?
- What type of training should I use to build muscle size?
- How many times a week should I train be fit, healthy and improve my performance?
- What type of training would I need to do to improve my speed?





# St Joseph's College PE Department

## Half term 5 - Athletics (Field)

Key concepts and skills required for Athletics (field)



### Keywords:

- Jump** - Action used when moving across the ground in the air
- Throw** - Action used when transferring an object through the air
- Sprint** - Covering distance as fast as possible when running
- Grip** - Hand position on an object
- Javelin** - Implement similar to a spear that is thrown to max distance
- Shot Putt** - Event when a shot is thrown to max distance
- Hammer Throw** - Event when a hammer is thrown to max distance
- Pole Vault** - Event when a pole is used to clear max certain height
- High Jump** - Event when athlete tries to jump max height
- Long Jump** - Event when athlete aims to jump max distance
- Triple Jump** - Similar to LJ but with different stride pattern
- Discus** - Implement similar to a plate that is thrown to max distance

### Key skills/abilities required:

- Running** - Athletes need to be as fast as possible in all field events. This allows to perform well in all different events.
- Jumping** - Athletes need to be as powerful as possible so they are explosive and can jump high and far. Specifically applicable to HJ, LJ, TJ and PV.
- Throwing** - Athletes need to be as powerful as possible so they are explosive when releasing objects into the air. Specifically applicable to HT, SP, D and J.
- Fitness** - Flexibility, Core Strength, Power, Speed are important to all events. Athletes have to be very disciplined in training.
- Technique** - Athletes have excellent technique to enable them to perform at the highest level. If they have poor technique this can lead to an increased risk of injury.

### Famous athletes:



Tomas Walsh



Christian Taylor



Greg Rutherford

### How can you improve?

#### Specific Event Training

Specific technical training relating to each event is important as they are all so different from each other. Lots of drills available on YT.

#### General Fitness

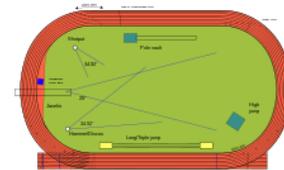
Plyometric training for power and jump height. Strength training to increase overall strength. Sprint training for overall speed fitness.

#### Tactical Analysis

Watch live events and analyse certain athletes, depending on how performance is to be increased. Specific situations and body positions are good to analyse.

### Questions:

- How many events are there in the decathlon?
- How many attempts does a shot putt thrower get in competition? What is the Diamond League?
- Which 3 skills are the most important for a long jumper to become one of the best in the world?
- How many times have Russia won the Olympics? Name the year(s) for a bonus point..





# St Joseph's College PE Department

## Half term 5 -Athletics (Track events)

Key concepts and skills required for athletics track events



### Keywords/events:

- Sprinting** - 100m/200m/400m races that require full or near to full speed running
- Middle-distance** - 800m/1500m races that require an athlete to pace themselves when running
- Long-distance** - Cross country runs longer distance runs
- Hurdles** - Races that require the jumping over of an obstacle
- Relay** - Races ran in teams of 4
- Baton** - Object passed round in relay
- Lanes** - Must stay in these when racing
- Start/Finish** - Beginning and end of a timed race

### Key skills/abilities required:

- Running** - Correct use of body, alternate knee and arm used. Knee raised to right angle, arms used to keep speed
- Sprint start** - Knee down and opposite foot in blocks, hands shoulder width apart, head down looking at ground
- Drive phase** - Pump arms and legs and stay low for first 10 metres of sprint
- Hurdle jump** - Leading leg high and as straight as possible, trailing leg in line with leading leg, try and keep body facing forward
- Aerobic fitness** - vital for middle distance and long distance running
- Speed** - Needed for sprinting and can be improved through better technique

### Famous track athletes:



Usain Bolt



Michael Johnson



Mo Farah

### How can you improve?

#### Training drills

- Sprint training** - Focus on technique, knees high, pump arms, keep body straight
- Resistance training** - Use resistance to improve technique and power. Lean against wall and work on legs
- Sprint start** - Focus on driving up from starting position
- Team relay practice** - Passing of baton between team. Correct calls and holding arm out to receive
- Hurdling** - Use lower hurdles to help with technique. Increase height of hurdles to add challenge.

### Questions:

- How many Olympic games host cities can you name?
- What is the world record time for the 100m, and who holds it?
- How many laps of an athletics track is the 1500m?
- Which organs in our body are used the most when running a long distance race?





# St Joseph's College PE Department

## Half term 6 - Cricket

Key concepts and skills required for cricket



### Keywords:

- Bat** - Implement used to protect stumps and score runs
- Ball** - Implement used to: bowl a ball/hit when batting
- Stance** - How you stand when preparing to bat
- Shot** - A type of action made when attempting to score runs
- Over** - 6 balls make up one over
- Wide** - When the ball is bowled too far away for a batsman to hit
- No-ball** - When the ball is unfairly bowled e.g. too high or too close
- Wicket** - The strip where bowling and batting both occur
- Stumps** - What the batsman is trying to protect/bowler trying to hit
- Spin** - When a ball deviates from the straight after landing
- Seam** - The stitched lines on the ball running across the circumference
- Boundary** - The outer ring of play. Defines whether a 4/6 is scored

### Key skills/abilities required:

- Bowling** - Either spin or seam bowling with the aim of trying to limit the batsman scoring runs and get them out. Accuracy, pace, consistency are all important for a successful bowler.
- Batting** - A range of front-foot and back-foot shots, patience, power and timing will allow a batsman to score lots of runs.
- Wicket-keeping** - Good at catching and fast movement behind the stumps.
- Catching** - Fast movement towards the ball, good hand position and watching the ball at all times.
- Fielding** - Fast reactions, high flexibility and speed will make a good fielder.
- Tactical Knowledge** - Good knowledge of fielding positions and overall game situation will allow a greater performance.
- Fitness** - Strength, speed, flexibility, aerobic endurance, strength and power.

### Famous players:



Ben Stokes



Virat Kohli



Jofra Archer

### How can you improve?

#### Net Practice

Involves a batter and bowler and is as realistic as can be when practicing a game situation. Can improve both skills, especially if the quality of both is good. Just simply involves a bowler bowling to a batter.

#### Fielding Practice

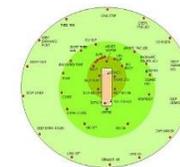
Various catching, stopping and throwing drills are available online. All are important when improving fielding.

#### Tactical Analysis

Watch live matches and analyse certain players, depending on how performance is to be increased. Specific situations and fielding positions set are good to analyse.

### Questions:

- How many players are on each team in a game of cricket?
- How long does a professional cricket match last for? What are the different formats of cricket?
- Which 3 skills are the most important for a cricketer to become one of the best players in the world?
- How many times have England won the cricket world cup? Name the year(s) for a bonus point..





# St Joseph's College PE Department

## Half term 6 - Rounders

Key concepts and skills required for rounders



**Keywords:**

- Bat** - Used to hit the ball
- Backstop** - Player behind batter to catch ball
- Ball** - Used to throw, catch and hit
- Batting square** - Area to bat from
- Bowling square** - Area to bowl from
- Fielding** - Team not batting
- Half rounder** - Scored when player makes it round without hitting
- No ball** - Illegal delivery bowled
- Out** - Caught, run out, breaks rules
- Rounder** - Batter makes it round all posts and back to team

**Key skills/abilities required:**

- Batting technique** - Sideways on, feet shoulder width apart, elbow bent, one handed
- Bowling technique** - Underarm, aim between shoulder and knee of batter, use non throwing arm for direction
- Catching** - Use 2 hands where possible, cup shape of hands, keep eye on ball, move hands away to cushion
- Throwing** - Bend elbow at right angle, create power through shoulder, step into throw with opposite foot, follow through to target
- Running** - Run at high speed to posts, drop bat before running

**Famous players:**



Mr Atkins



Mr Pavli



Mr Rimmer

**How can you improve?**

**Training drills**

- Throw and catch with a partner** - Stand a short distance apart working on throwing and catching
- Throw against wall** - Work on bowling technique by aiming at target on wall
- Batting practice** - Focus on technique and work with a partner to practice batting
- Small sided games** - Small sided possession games focusing on throwing and catching, if ball dropped possession given to other team

**Questions:**

- How many players are on each team in a game of rounders?
- How far away is the bowling square from the batting square?
- Which 3 skills are the most important for a rounders player to become one of the best players in the world?
- How many posts do you have to run around in rounders?







To explore how different religious traditions understand the nature of God

### Key words

1. Agnostic-Not being sure whether God exists.
2. Atheist- Believing that God does not exist
3. Freewill- The idea that human beings are free to make their own choices.
4. Conversion-When your life is changed by giving yourself to God.
5. MiracleSomething that breaks the laws of science and makes you think that only God could have done it.
6. Moral evil- Actions done by humans which cause suffering.
7. Natural evil- Things which cause suffering which have nothing to do with
8. NuminousThe feeling of the presence of something greater than you.
9. Omnibenevolent-The belief that God is all good
10. Omniscient- The idea that God knows everything that has happened and everything that is going to happen.
11. Omnipotent- The belief that God is all powerful.
12. Prayer-The attempt to contact God, usually through words

### Who is God in Islam?

Allah - the Arabic name of God  
 Tawhid - the Oneness and unity of God

The word 'Islam' means 'surrender', 'obedience' or 'submission'.  
 Muslims believe that they should surrender to the will of Allah.

'Say, 'He is God the One, God the eternal. He begot no one nor was He begotten. No one is comparable to Him' - Qur'an 112:1-4

One of the most important beliefs in Islam is Tawhid: the belief that there is only one God.

A Muslim's most important duty is to declare faith in the one God.  
 Muslims believe that God is an undivided entity.  
 This means that God is not made up of different persons nor has a son.  
 No one else and no other object has God's attributes or qualities.  
 Muslims do not have any images of Allah in mosques or in the home. Instead focusing on the word 'Allah' and verses from the Qur'an

**Brahma**



Brahma is the first god of the trimurti.

Brahma is the *creator*

**Vishnu**



Vishnu is the *preserver* and protector of the Universe.

He returns to Earth in troubled time and restore the balance of good and evil

**Shiva**



Shiva is the destroyer and re-creator.

He destroys the evil and turns it into good.

### What are the Hindu belief about God?

Hindus like Jews, Christians and Muslims believe there is only one God/ultimate reality Brahman.

Similar to the Trinity, Hindus believe that Brahma has 3 avatars (can be understood in 3 distinct ways), this is called the 'Trimurti'

The Trimurti consists of Brahma, Vishnu and Shiva.

Hindus tend to develop personal relationships with these deities in order to get closer to Brahman.



To explore how different religious traditions understand the nature of God

### Why do some people not believe in miracles?

1. Many sick people just get better - the body heals itself.
2. Sometimes the mind affects the body, and if the patient believes in the treatment, s/he will get better - 'The placebo effect'
3. Many miracles are fakes, or coincidences, or based on wishful thinking.
4. Religious statues weeping blood can be explained scientifically (water builds up in the porous clay of the statue and oozes out of tiny flaws in the glaze).
5. Can we really trust the person who has had a miracle?
6. Christians say miracles proves God exist, Muslims says it's proof Allah exists, Hindus etc.

### Why do some people not believe in God?

There are some people that believe that people are either religious/ not religious because of the home/ environment they were born into. As a result, our relationship with religion with religion is a matter of chance  
A famous quote by the scientist ad Atheist Richard Dawkins demonstrates this point

**'Yes, beautiful cathedrals, emotional music, powerful stories and parables help a bit. But the most important factor determining your religion is the accident of Birth'.**



### Questions:

1. What miracle does the picture on the right show?
2. Identify 2 of the most convincing reasons as to why some people do not believe in miracles?
3. Which 3 deities are in the Hindu Trimurti? Which do you think is the most important and why?
4. "Religious believers will never truly be able to understand God"- Give a P.E.E. argument for and against



Within this unit we will be exploring the presence of evil and suffering in our world. We will also assess what that tells us about the nature of God

### Keywords

1. **Suffering** - the state of undergoing pain, distress, or hardship.
2. **Evil** - very immoral and wicked (especially when attributed to a supernatural force).
3. **Moral suffering** - This is suffering that is caused by human action or inaction i.e. murder, rape, theft etc.
4. **Natural suffering** - This refers to natural disasters i.e. famines, floods, earthquakes, volcanoes etc.
5. **Sin** - Any action or thought that separates humans from God
6. **The Fall** - The story of Adam and Eve (Genesis 2 story)
7. **Original sin** - Everyone is born sinful because we are descendants of Adam and Eve
8. **Freewill** - Religious belief that people have the option to make decisions for themselves
9. **Determinism** - The belief that our thoughts and actions are being controlled by something other than yourself.

### Freewill

- Freewill- Religious belief that people have the option to make decisions for themselves
- Those who believe in freewill believe that everything in our lives both good and bad occurred because of our own decisions. Nothing has been predecided.

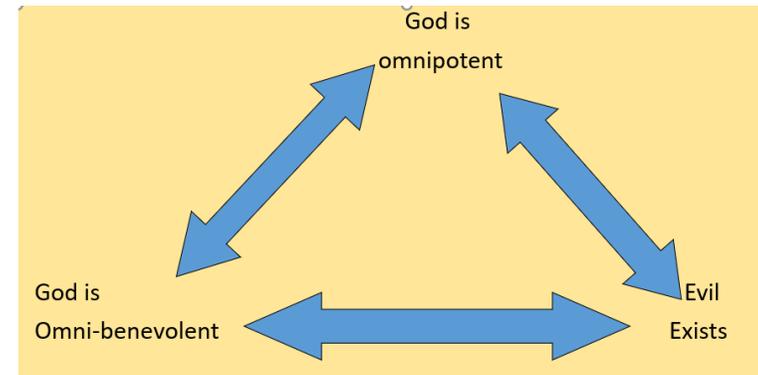
### The Problem of evil

The problem seeks to ask the question, how can God be

- Omnipotent (all-powerful)
- Omniscient (all-knowing)
- Omnibenevolent (all-loving)

And yet there is still evil and suffering in the world

The Greek philosopher Epicurus was found it difficult to believe that God was all of these things, despite their being clear examples of evil and suffering in our world. As a result, he came up with the 'Inconsistent Triad'



Epicurus argued that one of the natures of God could not exist for this to make sense.

Either

- God is all loving, but not powerful enough to stop evil and suffering
- OR
- God is powerful enough to stop evil and suffering but not powerful enough to stop it



Within this unit we will be exploring the presence of evil and suffering in our world. We will also assess what that tells us about the nature of God

### Adam and Eve

- After creating the world, God made a beautiful garden, called Garden of Eden. It was a paradise full of animals, fruits and trees. At the center of the garden, there was a tree with a special power to give the knowledge of good and evil to the person who ate its fruit.
- Adam was the first man created by God. God told Adam to look after the trees in the garden and warned him, "You may eat fruits from any tree you like, but not from the Tree of Knowledge. If you do not obey, you shall die:"
- To give company to Adam, God created a female from his ribs, and named her Eve. Both Adam and Eve lived naked in the Garden of Eden, as they had no sense.
- In the same garden, there lived a snake. It advised Eve to eat the fruit from the Tree of Knowledge, and told her that if she ate the fruit, she would become wise like God. Tempted by this, Eve ate the fruit and made Adam also eat it.
- Next day, when God came to the Garden, Adam and Eve hid themselves from Him, as now they had gained knowledge.
- God asked them, "Did you eat the fruit from the Tree of Knowledge?" The two admitted. God became angry and punished them, saying, "You did not obey me. So now, you will have to leave this Garden. You will have to live on Earth. Adam will have to work hard to grow crops and create food, and Eve will have to suffer the pain of giving birth." And one day you will die

### What is determinism?

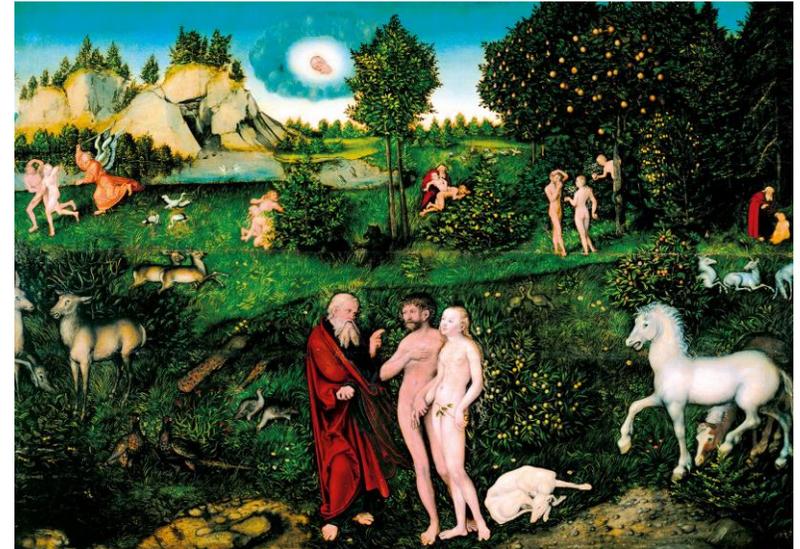
When discussing whether or not our thoughts, actions and lives as a whole are within or beyond our control. As a result, we then need to explore the nature and nurture debate

#### Nature

Our inbuilt physical and personality traits determined by our genes. They stay the same regardless of where we are born and raised. E.g. Eye colour, your height and having a shy nature

#### Nurture

Refers to your childhood, how you were brought up, your environment and your personal experiences e.g. Your accent, likes and dislikes (food, hobbies etc.) and religious beliefs





Within this unit we will be exploring the presence of evil and suffering in our world. We will also assess what that tells us about the nature of God

### What are Christian views on the devil:

The story of the origins of the Devil is not to be found in the Bible, but in other religious books, known as the Apocrypha.

Lucifer was an archangel, who refused to bow down to God. God threw Lucifer out of heaven and he fell to hell, where he became The devil.

The devil is also known as

- A demon
- Satan
- Beelzebub
- The Tempter
- The Evil One

### Is the presence of homelessness an example of evil in our world?

Since 2016 homelessness has seen an increase in 23,000 case. Government stats have also revealed that homeless in the UK is on the rise and London accounted for 27% of the total number of rough sleepers in the UK.

With statistics also revealing that the main causes of homeless are a troubled childhood, relationship breakdown, loss of job and a prison sentence it appears as though no one is immune to the potential reality of homelessness.

The presence of homeless within society is one of great debate, Some believe that it exists because of the selfishness and greed of the government/ those in power.

### Buddhist beliefs and teachings on suffering and refuge

Taking refuge - Buddhism believes that it is human nature to seek comfort in something when you are feeling in need of support or cheering up. We may turn to some/all of the following...

However, there can be problems in taking refuge in the wrong thing. It may lead to more suffering (physically and/or mentally). Individuals may become addicted to the thing they use for 'refuge'.

For Buddhists, they use the teachings of the Buddha as the thing that they turn to for refuge. The community of his followers (called 'the sangha') will help you in times of need.

Buddhists are not running away from suffering or ignoring it, but rather trying to understand 'life' and the inevitable suffering that is part of life.

One of the key teachings of The Buddha is the eightfold path

### Questions:

1. What is the difference between nature and nurture?
2. "All Christians have a duty to help the homeless"
3. Give 2 examples that demonstrate God's omnipotent nature



This unit will explore the key beliefs within Islam



### Key words:

- Allah** - Arabic word for God
- Omnipotent** - All powerful
- Omniscient** - All knowing
- Omnibenevolent** - All loving
- Prophet Muhammad** - The leader and founder of Islam
- Laylat ul-Qadr** - The Night of power
- Imamate** - The divine appointment of Imams within Shi'a Islam
- Aqiqah** - a ceremony for the birth of a new-born Muslim
- Salah** - Prayer
- Ramadan** - The month of fasting (sawm)
- Zakat** - Alms giving
- Hajj** - Pilgrimage to Mecca
- Shahadah** - Testimony of faith
- Sunni** - Muslims who believe Abu Bakhr was the first leader of the Muslim community
- Shi'a** - Muslims who believe Ali was the first leader of the community
- Shariah - Islamic Law
- Qur'an** - Holy book within Islam
- Hadith** - Collection of actions and saying of Prophet Muhammad

### The Prophet and the Imamate

Prophet Muhammad- The leader and founder of Islam  
 Muslims believe that the angel Gabriel appeared to Prophet Muhammad in a cave and recited to him the first verse within the Qur'an

Imamate- The divine appointment of Imams within Shi'a Islam  
 This also refers to the 12 Imams who are said to be the spiritual leaders and descendants

### Introduction to Muslim beliefs

1. Tawhid- Belief in one God
2. All Muslims believe that the Qur'an is the unchanging word of Allah
3. Muslims believe in all the angels that follow Allah's command (e.g. Angel Gabriel and Mikel)
4. All Muslims believe in the day of judgment
5. All Muslims believe that the Prophet that appeared in Islam, Judaism and Christianity were sent by God

### What happens at birth?

- When a Muslim baby is born
1. The first sound to reach a baby's ear should be that 'God is Great 'Allahu Akbar!'
  2. The baby's first taste should be something sweet! The baby's oldest relative may chew a date and rub the juice along the baby's gums or place a tiny piece of sugar or honey on the tongue.
  3. Seven days after the birth of the baby the Aqiqah ceremony takes place. This will often be a ceremony followed by a celebration party.
  4. According to Muslim Law a goat or sheep should be sacrificed and at least 1/3rd of the meat is given to the poor. Today in this country Muslims often donate money instead.
  5. The baby will be given its name. The name is often a family name or sometimes it is one Muhammad's names (the founder of Islam) or one of the 99 names of Allah (God).



This unit will explore the key beliefs within Islam



### What is Ramadan?

The month of fasting (sawm)

During this month

Muslims abstain from the following

- Food
- Water
- Swearing
- Sexual relations

At the end of Ramadan Muslims have a day of celebration called Eid.

### Sunni and Shia differences

Sunni- Muslims who believe Abu Bakhr was the first leader of the Muslim community  
 Shi'a- Muslims who believe Ali was the first leader of the community

Some similarities that both Muslims have are:

1. They both believe in one God (Allah)
2. They both believe Prophet Muhammad is the final prophet
3. Both pray 5 times a day

Some of the differences are

1. Shia Muslims combine 2 of their prayers (so they pray 3 separate times a day)
2. As well as following 4/5 of the 5 pillars Shia Muslims also follow the 10 obligatory acts of faith

### What is Shariah Law?

Islamic law derived from the Qur'an and Hadith (collection of sayings and actions of Prophet Muhammad)

The main sources of Shariah is the Qur'an and Sunnah. It seeks to prescribe a set of complete laws which seeks to establish maruf (good) and avoid / remove munkar (evil). The teachings are taken from the Qur'an and the Sunnah acts as the blueprint for how Muslims can best practice this:

EG/ The Qur'an states that Muslims should observe salah and the Sunnah shows us how to practice it.

Many Muslims believe that through perfect application of Shariah they will achieve success and peace in this life and in Akhirah (the hereafter)

### What is Jihad?

The word Jihad means struggle against evil; inward, personal struggle or an outward collective struggle

There are two types of Jihad within Islam:

**Greater Jihad:** the personal inward struggle of all Muslims to live in line with the teachings of their faith.

**Lesser Jihad:** the outward struggle to defend one's faith, family and country from threat.

### Questions:

1. "Greater Jihad is more important than Lesser Jihad?"
2. Identify 3 things that Muslims are not allowed to do during the hours of fasting within Ramadan.
3. When a new-born Muslim baby eats a sweet date, what does that represent?
4. Identify ONE similarity and ONE difference between Sunni and Shia Muslims



### Key words

**Just war theory-** A set of rules/ conditions that explains to countries: when a war is necessary and how countries should behave when they are at war.

**Pacifism-** The belief that war and violence are unjustifiable and that all disputes should be settled by peaceful means.

### Violent protest and terrorism

Although there are various different types of terrorism these are the main 4:

1. State-Sponsored terrorism- Any violent action carried out by an existing government to achieve their goal.
2. Rebellion terrorism- Their aim is to send a message to a political group that "the people" are unhappy and demand change. Their aim is to be non-violent, but they do sometimes result in large riots in which private property is destroyed and members of the public are injured or killed.
3. Political Terrorism- A political group tries to intimidate another. Although government leaders are the ones who are intended to receive the ultimate message, it is the members of the public who are targeted with violent attacks.
4. Religious terrorism- Such groups are extremely religiously motivated. They believe they are fighting a war of good vs evil and they strongly believe they have God on their side.

### Causes for war

**Religion**  
Different religions followed in one place can cause conflict (Kashmir is a mainly Muslim area in a mostly Hindu country). Disputes within religions (Sunni & Shia Muslims fighting for control in Iraq).  
When two religious groups claim one area as their God-given land (Israel and Palestine).

**Economics**  
World economy (financial security) can cause conflicts if one country has a resource another country needs (oil, gas). If economic problems hit hard it can lead to civil unrest causing refugees to flee and some citizens of nearby countries not wanting refugees (Zimbabwe and South Africa).

**Ideology & Politics**  
If one group holds particular strong viewpoints on certain issues (ideologies) and then tries to enforce those views on other people or neighbouring countries, this can cause national or even world wars (Nazi Germany, Communist North Korea on the Republic of South Korea).

**Nationalism & Ethnicity**  
When an ethnic or cultural group within a region or country is much larger than other groups, they can favour their own group over another, this can lead to the minority groups fighting civil wars (Kosovo). Some minority groups want to set up their own breakaway states (Tamils on Sri-Lanka).



### Religion and human rights

In American law there is something called the '1st Amendment' This law protects some of the following rights and freedoms:

- Freedom of religion
- Freedom of speech

The right to freedom of speech allows individuals to express their views without the government interfering.

The Supreme court must provide arguments to justify any interference. However, the government may silence/ censor speech which may cause the following;

- Violence
- Disrupt peace
- Encourage illegal activity

### Pacifist

The belief that war and violence are unjustifiable and that all disputes should be settled by peaceful means.

There are some religious groups and leaders who believe that violence is never the answer. They believe that there are always other solutions to problems.

Historic figures such as Martin Luther King and Gandhi both believed that violence should not be met with violence. Rather, peace, understanding and love were the best ways to approach conflict on both an individual and international level.

### Ethical conduct in war

The following conditions need to be met in order for a war to be seen as necessary

1. PROPER AUTHORITY - war should be declared by a proper authority e.g. a government or king.
2. JUST - the war must be started for a good reason - e.g. self-defense, and not because of greed, etc..
3. ESTABLISH GOOD - the war must be fought to establish good, or fight evil.
4. REASONABLE CHANCE OF SUCCESS - it should be possible to win the war.
5. LAST RESORT - it must be a last resort, when everything else has been tried, e.g. meetings and negotiations.
6. SUFFICIENT FORCE - the amount of force used must be only enough to win the war - No more than that.
7. CIVILIANS - no civilians should be involved, and no deliberate unnecessary cruelty.

**RULES of War**

You have been made the chief commander or the British army. You must write a speech to the British public telling them how you can your soldiers will act during the war

You need to consider:

- Hospitals?
- Civilians (normal everyday people )
- What happens to enemies you capture?
- Captured prisoners
- Weapons used?
- Which areas are considered a battlefield?

### Questions:

1. Do you believe religious groups should be able to say whatever they want, even if it is offensive to others? Explain why.
2. "Pacifism is a sign of weakness"- Provide one P.E.E argument for and against and a conclusion.
3. Identify 3 of the ethical rules of war do you think is the most important? Next to each, explain why.
4. Which type of terrorism do you believe society should be more concerned about? Explain why.



To understand the importance of marriage and why some marriages fail.

### Key words

1. **Self esteem** - confidence in one's own worth or abilities; self-respect.
2. **Body image** - A person's understanding their physical appearance. It involves how they compare themselves to that of the standards of beauty set within society.
3. **Marriage** - The legal union between two people (in some countries this now includes couples of the same sex)
4. **Divorce** - The legal end of a marriage stating that the marriage
5. **Adultery** - Sex between two people where one or both of them is married to someone else; adultery; having an affair
6. **Annulment** - Where the marriage is stated never to have happened
7. **Sacraments** - A visible sign of God's invisible grace (love). Sacraments are can also be understood as commitments to God. They help to build up the body of Christ (Christianity), and finally, to give worship to God.
8. **Contraception** - Various methods used to avoid unwanted pregnancy

### Greek Love

**Agape**  
Christian love  
e.g. charity, tolerance  
and respect towards  
all people.

**Eros**  
Sexual affection,  
passion or  
desire

**Storge**  
A warm affection  
or liking

**Philos**  
Love of  
friends  
and family

### The sacrament of marriage:

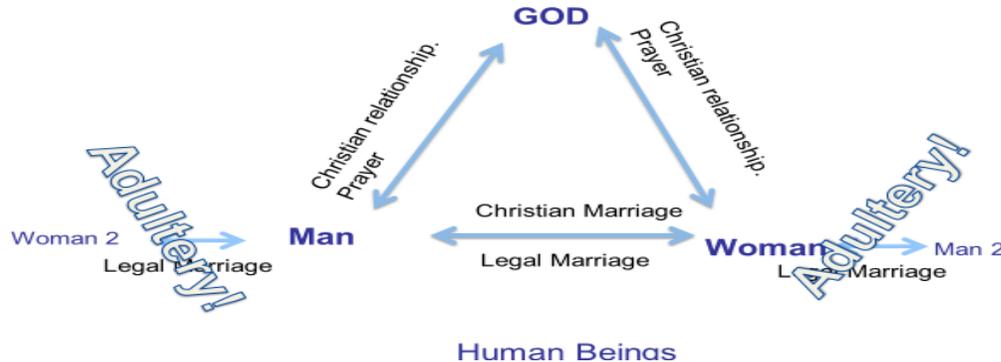
Marriage can be understood as encompassing (including) all of these important things:

1. Monogamous (between one man and one woman)- Traditional Church teaching
2. Exclusive (you are only in a relationship with your husband/ wife- no one else)
3. Legally binding
4. Publicly Acknowledged (in front of at least 2 witnesses)
5. Consummated in sexual union (officially married after the couple have had sex)
6. Life-giving/ Life-sharing (should produce children)
7. Life-long (you remain married until either partner dies- 'till death do us part')





### Catholic Teaching on Marriage and Divorce.



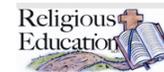
### Adultery and divorce

Below are a list of reasons as to why some marriages end in divorce

1. Adultery
2. One/ both partners are no longer in love
3. Disability
4. False expectations
5. Constant arguing
6. Physical/emotion abuse
7. Money issues (debt, gambling, loss of job etc)
8. Addiction (drug/ alcohol)

### Contraception

1. Natural Family Planning - ...are various methods of estimating a woman's likelihood of fertility, based on a record of the length of previous menstrual cycles.
2. Withdrawal - Known as 'interrupted intercourse'. What happens is that the man pulls his penis out of the vagina before ejaculation.
3. The Pill - When taken by mouth every day, these pills inhibit female fertility.
4. The Morning After Pill - An emergency abortive contraceptive, if taken after sexual intercourse, may prevent pregnancy. It destroys an already fertilised egg.
5. Barrier Methods - Prevents pregnancy by physically preventing sperm from entering the uterus.
6. The Coil - ...is a small, T-shaped contraceptive device made from plastic and copper that fits inside the womb (uterus).
7. Abstinence - A practice of refraining from some or all aspects of sexual activity.



### What's the solution then?

- Seek help from family and friends, a marriage counsellor, priest or Catholic marriage-support organisations.



marriage care



- Look to the Bible, prayer and the sacraments, especially the **Eucharist** and **Reconciliation**.

### Questions:

1. Which of the forms of contraception do you believe is the most effective? Explain why
2. "Sometimes, divorce should be allowed?"
3. Give 2 examples for each of the four different types of Christian love. E.g. An example of storge is that Mr Arthur loves chocolate



To understand the origins of philosophical thought in the ancient world.

### Ancient Greece



Greece's position next to the sea meant the Ancient Greeks were a 'seafaring' people. Trade between the islands led to the creation of 'city-states' (polis). Each city-state was ruled by a powerful city, led by a ruler or government. Because of its location in the Mediterranean, Greece is a warm country with lots of vegetation.

### What is a legend?

A legend is usually based on a true event in the past. Legends usually have a real hero at the centre of the story and they are often set in fantastic places.

The story will have been passed on from person to person, sometimes over a very long period of time.

The fact that so many people have taken the trouble to keep the story alive, usually tells you that it has some very important meaning for the culture or region in which the story was first told.

### Greek Alphabet and Symbols

Α α Alpha	Β β Beta	Γ γ Gamma	Δ δ Delta	Ε ε Epsilon	Ζ ζ Zeta
Η η Eta	Θ θ Theta	Ι ι Iota	Κ κ Kappa	Λ λ Lambda	Μ μ Mu
Ν ν Nu	Ξ ξ Xi	Ο ο Omicron	Π π Pi	Ρ ρ Rho	Σ σ, ς Sigma
Τ τ Tau	Υ υ Upsilon	Φ φ Phi	Χ χ Chi	Ψ ψ Psi	Ω ω Omega

### Significant People

Socrates	Born around 470 BC, he was a famous philosopher who taught people to question things. This led to his downfall as he questioned the Gods and was arrested for influencing the young
Plato	Born around 428 BC, he was a philosopher and student of Socrates. After Socrates' death, Plato founded the first ever university, called the 'Academy'. Plato believed it was a philosopher's job to seek truth.
Aristotle	Born around 384 BC, he was a philosopher and a scientist. At age 17 he travelled to Athens to study at Plato's university, where he began to dissect animals to learn more about their anatomy.
Alexander the Great	Born sometime between 356-323 BC, he gained a strong and united Greece when he became king. He used his military genius to win lots of battles, conquering Eastern Europe and Egypt.



### Key Terms

- **Acropolis** — fortified citadel within a larger city, usually located on the top of a hill and at the centre of the city.
- **Archaic Period** — from 800 BC to 480 BC. During this time, the city states of Athens and Sparta began to form.
- **Athens** — One of the most powerful Greek city-states and current capital of Greece—the birthplace of democracy.
- **Classical Period** — 480 BC to 323 BC. During this time, Athens was ruled by a democracy. Athens and Sparta fought the Peloponnesian War. It ended with the rise of Alexander the Great.
- **Democracy** — a form of government where citizens have a say in how they are ruled, including choosing their leaders.
- **Hellenistic Period** — 323 BC to 146 BC when Alexander the Great came to power. Ended when Rome conquered Greece.
- **Oligarchy** — A type of government where the power is held by only a few people.
- **Sparta** — A power Greek city-state and rival to Athens. Sparta's culture was based around warfare and battle.
- **Titans** — the first of the Greek Gods. Overthrown by their children, the Olympians.

### Questions:

1. What two geographic features played an important role in developing Greece?
2. Choose two philosophers and explain their causes, course, and consequences.
3. Describe and rise of Alexander the Great, the vastness of his empire and the spread of Greek culture.
4. "Greek philosophy is important for the modern world." Do you agree?

### Timeline of Key Events

#### Archaic Period (800 BC—480 BC)

- **776 BC** - The first Olympic Games takes place. The games would take place every 4 years in honor of the Greek god Zeus.
- **757 BC** - First Messenian War begins. This is a war between Sparta and Messenia that will last many years.
- **650 BC** - The Greek Tyrants come into power. Cypselus is the first Tyrant of Corinth.
- **621 BC** - A lawyer named Draco introduces strict new laws in Athens that are punishable by death. These are called Draconian laws.
- **600 BC** - The first Greek coins are introduced.
- **570 BC** - Pythagoras is born. He will make major advances in science, math, and philosophy. We still use the Pythagorean Theorem today to help with geometry.
- **508 BC** - Democracy is introduced in Athens by Cleisthenes. He establishes a constitution and is often called the "Father of Athenian Democracy". This is one of the great accomplishments of the Greek culture.

#### Classical Period (480 BC—323 BC)

- **490 BC** - The Greeks fight the Persians in the Greek/Persian Wars. Two famous battles are the Battle of Marathon in 490 BC and the Battle of Salamis in 480 BC. The Greeks win and the Persians retreat.
- **432 BC** - The temple to Athena, the Parthenon, is completed in Athens on the Acropolis. Today this is the most famous surviving building of Ancient Greece.
- **431 BC** - The wars between Sparta and Athens begin. They are called the Peloponnesian Wars. The wars will last 27 years with Sparta eventually conquering Athens in 404 BC.
- **386 BC** - Greek philosopher and student of Socrates, Plato, founds the first institution of higher learning in the western world. It's called the Academy.
- **342 BC** - The great philosopher, scientist, and mathematician, Aristotle, begins to tutor Alexander (later to be called Alexander the Great).
- **336 BC** - Alexander the Great becomes king when his father, Philip of Macedon is assassinated.
- **333 BC** - Alexander begins his conquests and defeats the Persians.

#### Hellenistic Period (323 BC—146 BC)

- **323 BC** - The Hellenistic period begins when Alexander the Great dies. The Ancient Greek civilization begins its decline and the Ancient Romans start to gain power.
- **300 BC** - Euclid, a Greek mathematician, writes Elements. This famous writing will have an impact on mathematics for years to come.
- **146 BC** - Rome conquers Greece making it part of the Roman Empire



In this Space topic you will cover the life cycle of a star and explore how forces behave in the universe.



### Keywords:

**Planet:** A large mass that orbits the Sun.

**Solar system:** A collection of planets and natural satellites that orbit a star/group of stars.

**Galaxy:** A collection of gas, dust and Billions of stars with their solar systems held together by gravitational attraction.

**Moon:** A natural satellite.

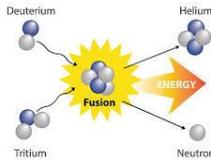
**Supernova:** Very large star having fusion reactions which cause an explosion.

**Black hole:** The collapse of a star into a microscopic that even light cannot escape from, a dense concentration of matter.

**Terminal velocity:** constant velocity reached when an object has balanced forces acting on it.

### Fusion: This is a process that happens inside stars!

Two small daughter nuclei join together to form a larger more stable nuclei during this process energy is released with a few neutrons.



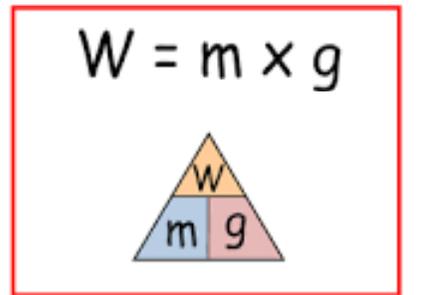
### Weight:

$$\text{Weight (N)} = \text{Mass (kg)} \times \text{Gravitational Field strength (N/kg)}$$

**Mass:** A measure of how much matter the object is made up of (kg)

**Weight:** Is the force mass exerts on the earth (N)

(Gravitational Field strength will be given in calculations, on Earth it is 9.8N/kg)



### Questions:

**State** the equation for Weight with all units (2marks)

**Describe** fusion (3 marks)

**Describe** the live cycle of a star with a mass close to that of the sun (6 marks)

### Formation of a star:

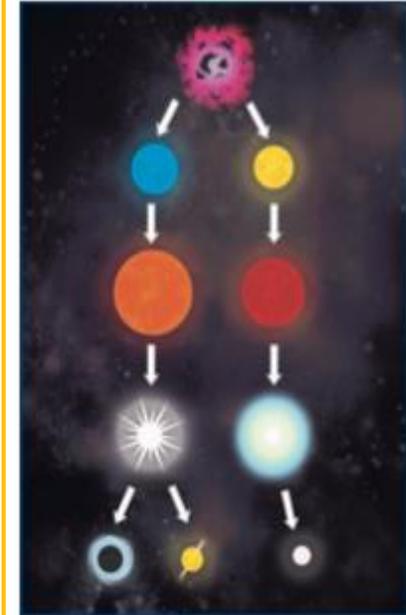
1. **Nebula:** Stars are made from a cloud of dust and gas - a nebula. Gravity pulls the dust and gas together, forming a protostar.

2. **Fusion:** The more dense the star, the hotter it becomes. Fusion of the hydrogen nuclei starts, emitting a lot of energy.

3. **Main sequence:** The next stage is the main sequence star. This stage will last for a few billion years. This is a stable phase as the force of gravity and fusion of hydrogen are balanced. Hydrogen is fused and forms helium; as this happens, energy is released.

4. **Red Giant:** Hydrogen begins to run out, turning the star into a red giant (like the Sun) or a red super giant, depending on the size of the star. Then ...

### Flow chart of the life cycle of a star



5. **Stars with a larger mass than the Sun:** Black Hole: Red super giants will initially glow brightly. Then, they will explode into a supernova. The supernova will get rid of its outer layer of dust and gas and will form a black hole.

5. **Stars around same mass as the Sun:** A red giant will become a white dwarf by getting rid of the outer layers of dust and gas. It will then cool down and become a black dwarf.



Develop an understanding of infection and response.



### Keywords:

**Communicable Disease:** Disease caused by a pathogen, that can be transferred from one organism to another.

**Non-Communicable Disease:** Disease that is not transferred between organisms and not caused by a pathogen.

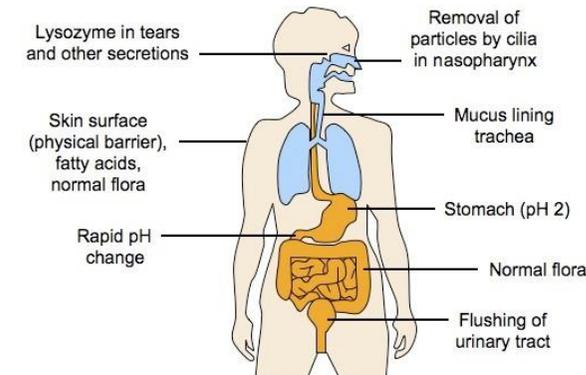
**Pathogen:** Microorganisms that cause infectious disease.

**Phagocyte:** A type of white blood cell that engulfs and digests pathogens.

**Lymphocyte:** A type of white blood cell that produces antibodies.

Type of Pathogen	Description	Disease Examples
Bacteria	A single celled organism without a nucleus.	TB, Cholera
Virus	A non living particle that reproduces within a living cell.	HIV, Common Cold
Protist	A single celled organism with a nucleus.	Malaria, Sleeping Sickness
Fungi	Simple organisms including mushrooms and yeast.	Athlete's foot, Ringworm.

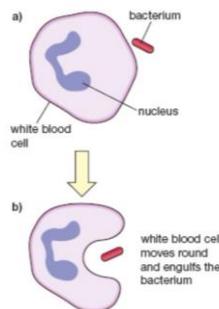
### The Human Body's Defences:



### White blood cells:

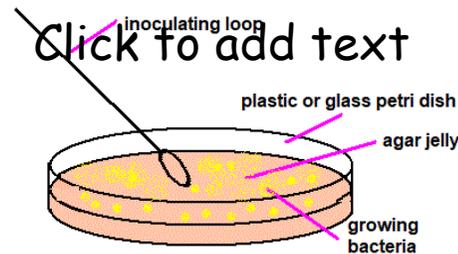
White blood cells detect pathogens. There are 2 key types of white blood cell; phagocytes and lymphocytes.

Diagram of phagocytosis →



### Growing Bacteria

Petri dish setup for culturing microorganisms



**Independent Variable:** The factor that you are changing when growing the bacteria.

**Dependent Variable:** The number of bacteria colonies.

**Control Variable:** Any external factor other than the independent variable that will affect the bacteria growth.

### Questions:

1. **Define** a pathogen, and state 3 types of pathogen. (2 marks)
2. **Compare** giving examples communicable and non-communicable diseases. (3 marks)
3. **Explain** how the body defends itself against pathogens. (6 marks)

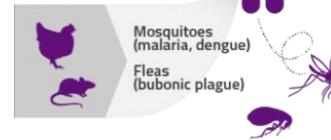
### Disease Transmission:

#### A. General transmission

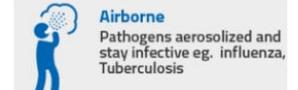
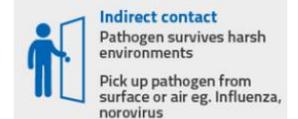
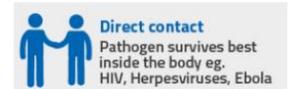
#### Abiotic environmental factors



#### Animal vectors



#### B. Human to human transmission





In this topic you will develop understanding of how mass is conserved in chemical reactions, giving examples of common reactions and observations that are made.

### Keywords:

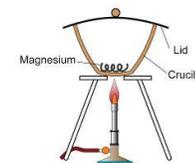
- Element:** a substance which contains the same type of atom
- Compound:** a substance which has different types of atoms chemically bonded together
- Mixtures:** two or more elements and/or compounds not chemically combined together
- Chemical reaction:** the formation of one or more new substances, often involving an energy change
- Reactivity:** the likelihood of a substance changing in a reaction
- Acid:** a substance which releases hydrogen ions ( $H^+_{(aq)}$ )
- Alkali:** a substance which releases hydroxide ions ( $OH^-_{(aq)}$ )
- Soluble salt:** a salt which dissolves in water
- Reversible reaction:** a reaction that can happen in both directions

### Conservation in Reactions:

In a chemical reaction: mass of reactants = mass of the products  
 When writing a chemical equation, all atoms must be accounted for on both sides.  
 Word equations show the names of the elements and compounds involved:

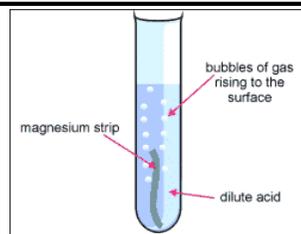
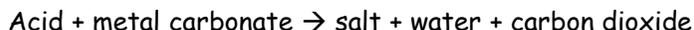
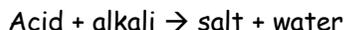
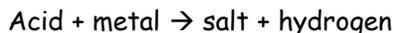


Symbol equations show the formula of the chemicals and must be balanced to account for all atoms:



When a gas is added to a reaction or produced from a reaction, mass can seem to change because we can't measure the mass of the gas.  
 (When reacting Mg, measured mass increases because  $O_2$  is added)

### Reactions of Acids:



### Observations:

- where a gas is given off there will be bubbles
- for reactions without a gas, an indicator can be used to show a change
- measuring the temperature change shows an increase in temperature

### Making a soluble salt:

1. React an acid with an excess of metal, metal oxide, hydroxide or carbonate until no more reacts.
2. Filter the mixture to get a solution of the salt with the excess solid left behind
3. Heat the solution to start evaporating the water from the solution.
4. Turn off the heat and leave until all of the water has evaporated, leaving the solid salt behind.

### Questions:

1. **Write** a word equation to show the chemical reaction when hydrochloric acid and sodium hydroxide are mixed (1 mark)
2. **Explain** why heating copper carbonate shows a change in mass, although mass is actually conserved (3 marks)
3. **Describe** the steps taken to produce copper sulfate crystals from copper oxide and the appropriate acid (6 marks)



In this topic you will learn about how energy is transferred, how to build a circuit and how plugs work

### Keywords:

**Gravitational potential energy:** the energy an object has due to its height/position

**Kinetic energy:** movement energy

**Chemical energy:** a store of energy found in batteries, food, fuel

**Thermal conductor:** a material that lets heat travel through it easily

**Insulator:** a material that does not let heat travel through it easily

**Current:** the flow of charge

**Ammeter:** used to measure current

**Voltmeter:** used to measure potential difference

**Fuse:** safety component in a plug which melts if there is too much current

### Energy and energy transfer:

Energy cannot be created or destroyed but it can be transferred.

A candle transfers chemical energy into light and heat.



An electric car will transfer electrical energy to kinetic energy.



A rollercoaster transfers gravitational potential energy to kinetic energy.



Energy is not always usefully transferred.

Some may be wasted as thermal (heat) energy or sound.

### Thermal energy transfer:

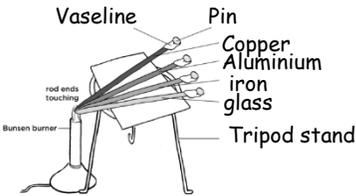
#### What is the best conductor?

Set equipment up as in the diagram on the left.

Independent variable: material rod  
Dependent variable: time taken for the pin to drop

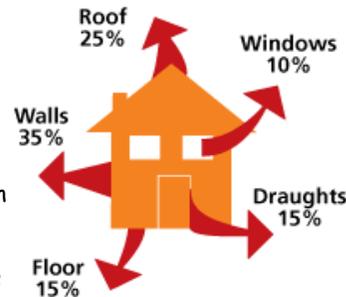
Control variables: length of the rod and amount of Vaseline

The best thermal conductor will drop its pin first.

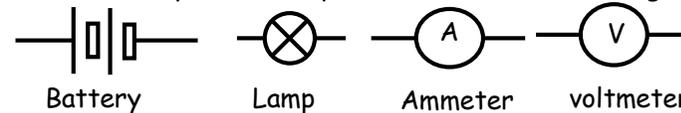


Homes lose heat in lots of ways but mainly through the roof, walls floor, windows:

- Insulators can be used to reduce heat transfer from the home.
- Loft insulation has trapped air so reduces heat transfer through the roof.
- Cavity wall insulation also traps air between two layers of bricks.
- Double glazing is better than single glazing as a vacuum exists between the two sheets of glass



### Simple circuit symbols to use when drawing a circuit

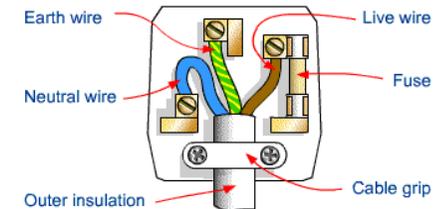


Current is the flow of charge.

An ammeter measures current in **amps**

Voltage or potential difference is measured using a voltmeter the unit it is measured in is called **volts**

Electricity is made in power stations. It reaches our homes via the national grid and we connect to it using a plug. A fuse is a safety component in the plug which blows (melts) if too much current for the device enters the circuit.



### Questions

1. **State** what energy store is found at the top of a rollercoaster (1 mark)
2. **Describe** how you measure current and potential difference in a circuit (3marks)
3. **Explain** how you could investigate which material is the best thermal conductor (6 marks)



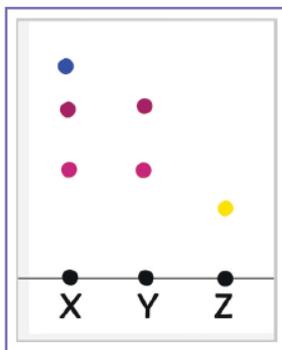
Understanding how to test substances to determine what is in them, including using indicators, ion tests, chromatography and gas tests.

### Keywords:

- Pure substance:** contains one type of element or one type of compound
- Element:** substances made up of one type of atom
- Compound:** two or more elements chemically joined together
- Mixture:** two or more elements or compounds that are not chemically joined together
- Ion:** a charged particle
- Soluble:** a substance that dissolves in a solvent
- Solvent:** a liquid a solute will dissolve in
- Precipitate:** an insoluble solid that can identify an ion in the solution
- Indicator:** a substance that changes colour in the presence of acids and alkalis

### Chromatography:

There are two phases: The **mobile phase** (the solvent) moves through the paper carrying different substances with it. The **stationary phase** is the paper. How soluble a substance is determines how far it will travel.



Chromatography helps us identify pure substances. Pure substances will have one spot. Impure substances will produce two or more spots. So Z is pure, X and Y are impure.

### Testing for metal ions:

Some metal ions will burn with a coloured flame when put in a Bunsen burner:

Ion	Colour of the Flame
Li <sup>+</sup>	 crimson
Na <sup>+</sup>	 yellow
K <sup>+</sup>	 lilac
Ca <sup>2+</sup>	 orange-red
Cu <sup>2+</sup>	 green

Mixtures can cause the results of these tests to be masked.

Some metal ions will form a precipitate when Sodium hydroxide (NaOH) is added:

Ion	Colour of the Precipitate Produced
Al <sup>3+</sup>	 white
Ca <sup>2+</sup>	 white
Mg <sup>2+</sup>	 white

Ion	Colour of the Precipitate Produced
Cu <sup>2+</sup>	 blue <small>colourless sodium sulfate solution solid copper hydroxide</small>
Fe <sup>2+</sup>	 green
Fe <sup>3+</sup>	 brown

### Testing for non-metal ions:

#### Sulfate ions -

- Add barium chloride and hydrochloric acid
- A white precipitate appears

#### Carbonate ions -

- Add hydrochloric acid
- Bubbles of carbon dioxide gas will appear
- Test for carbon dioxide with limewater

#### Group 7/Halide ions

- Add nitric acid and silver nitrate
- Cl<sup>-</sup> gives white precipitate
- Br<sup>-</sup> gives cream precipitate
- I<sup>-</sup> gives yellow precipitate

### Testing common gases:

#### Testing for H<sub>2</sub>:

- Insert lit splint
- Will make a squeaky pop sound



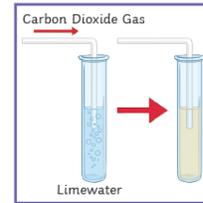
#### Testing for O<sub>2</sub>:

- Insert a glowing splint
- Splint will relight



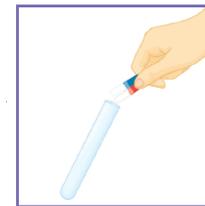
#### Testing for CO<sub>2</sub>:

- Bubble through limewater
- Limewater turns cloudy



#### Testing for Cl<sub>2</sub>:

- Use damp litmus paper
- Litmus paper bleaches/turns white





In this topic you explore the theory of evolution and the evidence supporting it.

### Keywords:

**Extinction:** When there are no remaining individuals of a species alive.

**Endangered:** Species is at risk of becoming extinct.

**Evolution:** The process by which living things can gradually change over time.

**Species:** A group of living things with very similar characteristics. They can breed together to make more living things of the same type.

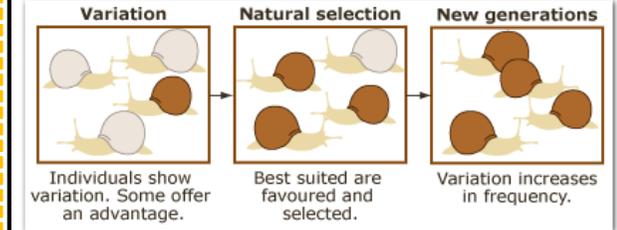
**Variation:** The differences between living things in a species.

**Biodiversity:** A measure of how many different species live in an ecosystem.

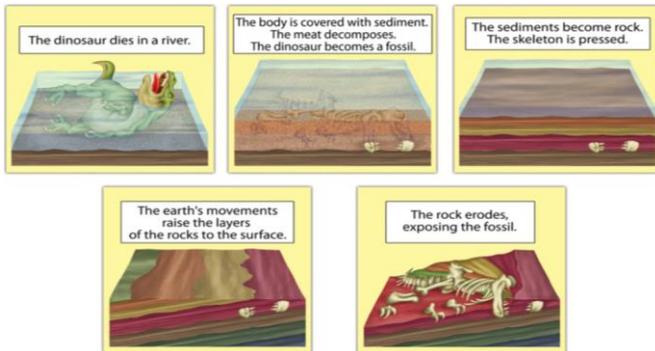
**Adaptation:** How living things are specialised to suit their environment.

**Inheritance:** The process of passing on features from parents to offspring.

### Natural Selection:



### Fossil Formation:

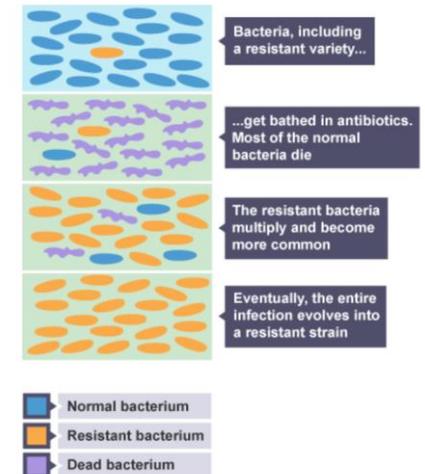


### Antibiotic Resistance:

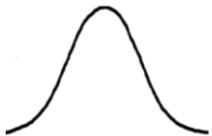
The main steps in the development of antibiotic resistance in bacteria are:

1. A random mutation occurs in the DNA of individual bacterial cells.
2. The mutation protects the bacterial cell from the effects of the antibiotic - it becomes antibiotic resistant.
3. Bacteria without the mutation die when the antibiotic is present
4. Antibiotic resistant bacteria survive and can reproduce with less competition from non-resistant bacterial strains.
5. The genes for antibiotic resistance are passed to the offspring.
6. Over time the whole population of bacteria becomes antibiotic resistant because the antibiotic resistant bacteria are best suited to their environment.

### Development of antibiotic resistance



### Types of Variation:



#### Continuous Variation:

- No distinct categories
- Controlled by lots of genes
- Influenced by the environment

#### Discontinuous Variation:

- Distinct categories
- Controlled by a few genes
- Not affected by the environment

### Questions:

1. **Define** adaptation. (1 mark)
2. **Explain** why there are gaps in the fossil records (3 marks)
3. Doctors are now prescribing fewer antibiotics to reduce the evolution of antibiotic resistant bacteria. **Describe** the process of evolution of antibiotic bacteria. (6 marks)



In this topic you will learn about the behaviour of particles and learn to find the density of objects

### Keywords:

**Density:** A measure of how much mass is in a given Volume

**Internal energy:** the sum of kinetic and potential energies in a closed system.

**Specific latent heat:** Energy needed to change 1kg of a substance's state at a constant temperature.

**Specific latent heat of fusion:** Energy needed to change 1kg of solid into 1 kg of liquid at the same temperature

**Specific latent heat of vaporisation:** Energy needed to change 1kg of liquid into 1 kg of gas at the same temperature

### Equations:

$$\text{Density} = \frac{\text{mass}}{\text{volume}} \quad P = m \div V$$

$\frac{\text{kg/m}^3}{\text{kg}} \quad \frac{\text{m}^3}{\text{m}^3}$

$$\text{Energy needed} = \frac{\text{mass}}{\text{kg}} \times \text{specific latent heat} \quad \Delta E = m \times L$$

$\text{J} \quad \text{J/kg}$

### Particle motion and Pressure:

Gas particles can move around freely and will collide with other particles and the walls of the container. This is the pressure of the gas. If the temperature of the gas increases then the pressure will also increase. The hotter the temperature the more kinetic energy the gas particles have. They move faster colliding with the sides of the container

State	Particle arrangement	Properties
Solid	<i>Packed in a regular structure. Strong forces hold in place so cannot move.</i>	Difficult to change shape.
Liquid	<i>Close together, forces keep contact but can move about.</i>	Can change shape but difficult to compress.
Gas	<i>Separated by large distances. Weak forces so constantly randomly moving.</i>	Can expand to fill a space, easy to compress.

### Required Practical:

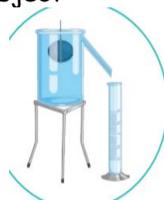
#### Finding the density of a regular object:

1. Measure the mass using a balance
2. Measure length, width height using a ruler and calculate volume
3. Use Density = mass ÷ volume



#### Finding the density of an irregular object:

1. Measure mass using a balance
2. Fill Eureka can with water
3. Place object in water
4. The water displaced into the measuring cylinder is the volume of the object
5. Use Density = mass ÷ volume



#### Density useful fact

A more dense material will have more particles in the same volume when compared to a less dense material

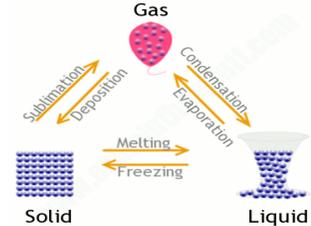
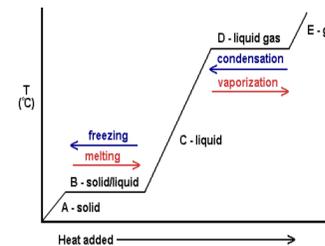
**Internal energy:** Particles within a system have kinetic energy when they vibrate or move around. The particles also have a potential energy store. The total internal energy of a system is the sum of kinetic and potential energy stores. If the system is heated the particles will gain more kinetic energy, so increasing the internal energy.

#### Latent heat and changes of state:

Energy is being put in during melting and boiling. This increases the amount of internal energy. The energy is being used to break bonds so the temperature does not increase. This is shown by the parts of the graph that are flat. The energy needed to change the state of a substance is called the **latent heat**.

Solid  $\xrightarrow{\hspace{2cm}}$  Liquid **Specific latent heat of fusion**  
Liquid  $\xrightarrow{\hspace{2cm}}$  Gas **Specific latent heat of vaporisation**

Latent heat is the amount of energy needed /released when a substance changes state  
**Energy needed = mass X specific latent heat**





Understand the process of respiration and the factors involved.

### Keywords:

**Aerobic:** With Oxygen

**Anaerobic:** Without Oxygen

**Respiration:** The chemical breakdown of nutrient molecules to release energy for the body

**Alveoli:** Tiny air sacs at the end of bronchioles where gas exchange takes place

**De-oxygenated:** Blood which contains a low level of oxygen

**Oxygenated:** Blood which contains a high level of oxygen

**Cardiovascular System:** A system which comprises of the heart and blood vessels

**Oxygen Debt:** The amount of oxygen needed to at the end of anaerobic exercise to break down the lactic acid produced

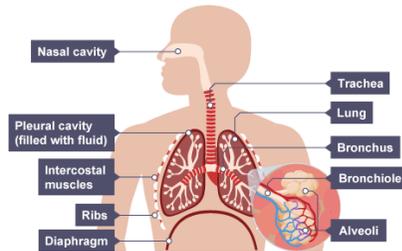
### Metabolism:

Energy released during respiration is used during metabolic process to synthesis new molecules;

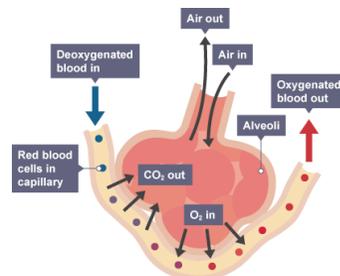
- Glucose is converted to starch, glycogen and cellulose
- Glycerol and 3 fatty acid molecules join to form a lipid
- Glucose and nitrate ions are joined to make amino acids
- Amino acids bond to form proteins
- Excess proteins are broken down and released as urea during excretion

Respiration itself is also a metabolic process.

### Gas Exchange System:

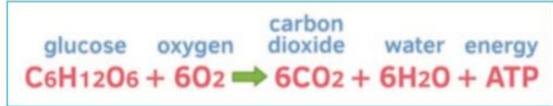


### Alveoli:



### Respiration Equations:

#### Aerobic Respiration:



#### Anaerobic Respiration: (In Animals)



#### Anaerobic Respiration: (In Plants and Yeast)



### Effect of Exercise:

When a person exercises their body, specifically their muscles need much more energy. To release more energy, the amount of respiration reactions occurring has to increase.

The heart pumps faster and their breathing rate increases to supply more oxygen to the muscles via the bloodstream.

If the muscles are not receiving enough oxygen to keep up the demand needed by the respiration reactions, then anaerobic respiration begins to occur. This produces lactic acid which can build up in the muscles and results in oxygen debt.

After long periods of exercise the muscles can become fatigued and stop contracting, commonly called a stitch.



Using the energy change of a reaction to define it as exothermic or endothermic, explaining how to measure this energy change accurately.

### Keywords:

**Exothermic reactions:** involve transfer of energy from the reaction to the surroundings, so temperature increases

**Endothermic reactions:** involve transfer of energy from the surroundings to the reaction, so temperature decreases

**Energy level diagram:** shows the energy change occurring in a reaction

**Activation energy:** the minimum amount of energy required for a chemical reaction to take place

**Catalyst:** a substance that speeds up a chemical reaction by offering an alternative pathway with a lower activation energy, it is not used up

### Exothermic Reactions:

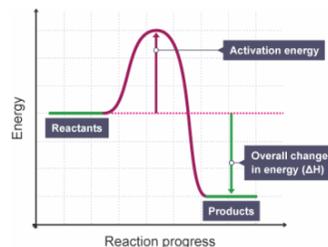
Energy is transferred from the reacting chemicals to the surroundings, Temperature increases as the reaction takes place.

Examples:

- Combustion
- Neutralisation
- Respiration
- Oxidation

Uses:

- Hand warmers
- Self heating cans



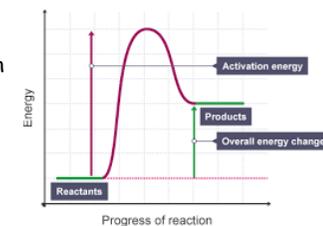
### Endothermic Reactions:

Energy is transferred from the surroundings to the reacting chemicals Temperature decreases as the reaction takes place.

Example:

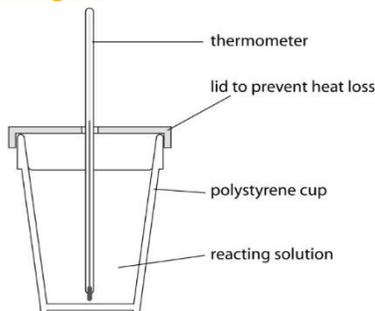
- Thermal decomposition
- Use:
- Instant ice packs

The direction of arrows on energy profile diagrams is really important!



### RP Measuring Energy Changes:

**Aim:** to investigate variables that affect temperature changes in reacting solutions e.g. reactions of acids, neutralisation, displacement reactions of metals



### Improving accuracy:

- Use a polystyrene cup as this is an insulator and prevents heat loss
- Use a lid to prevent heat loss
- Stir the solution to make sure energy is distributed evenly in the solution
- Repeat 3 times, remove anomalous result and calculate the mean

### Bond making and breaking:

Breaking a bond is an endothermic process - it requires energy to be put in so the value is positive.

Making a bond is an exothermic process - it releases energy so the value is negative.

Whether a reaction is exothermic or endothermic depends on the bonds that need to be made and the bonds that need to be broken.

The energy change can be shown as  $\Delta H$

### Calculations using bond energies:

Bond energies are used to calculate the change in energy of a chemical reaction.

**Step 1: Write a balanced symbol equation for the reaction**



**Step 2: Work out the bonds being broken and the bonds being made**



**Step 3: Calculate energy for bonds being broken**

$$4 \times 464 + 2 \times 146 = 2148$$

**Step 4: Calculate energy for bonds being made**

$$2 \times 464 + 498 = 2354$$

**Step 5: Energy change = bonds broken - bond made**

$$2148 - 2354 = -206 \text{ kJ/mol} \quad (\text{because } \Delta H \text{ is negative, reaction is exothermic})$$

*HT only*

Bond	Bond Energy kJ/mol
H-O	464
O-O	146
O=O	498



Describe how the Periodic Table has been developed over time and explain how it can be used to give information about elements.

### Keywords:

**Periodic table:** a list of all the elements that have been discovered

**Group:** vertical columns on the Periodic table, elements in these have the same number of electrons on their outer shell and similar physical properties

**Period:** horizontal rows on the Periodic table, elements have the same number of energy levels

**Atomic number:** number of protons an element has

**Atomic mass:** the relative mass of an atom (number of protons and neutrons together)

**Alkali metals:** highly reactive metals found in Group 1

**Halogens:** elements found in group 7

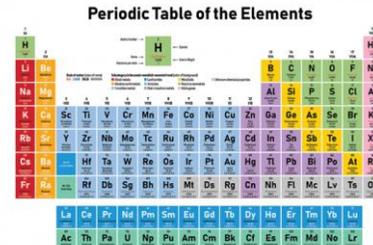
**Noble gases:** very unreactive elements found in Group 0

### Development of the Periodic table:

Initially elements were classified by arranging them in order of **atomic mass**. The Periodic table was incomplete and some elements were in the wrong group when comparing properties.



Mendeleev put the elements in order of **atomic mass** but left gaps as he believed there were some undiscovered elements. Elements with the properties Mendeleev predicted were found and filled the gaps.



The discovery of isotopes made it possible to explain why ordering by atomic mass was not always correct. We now order by **atomic number**.

### Metals vs. Non-metals: Metals

Found on the left of the Periodic table, form positive ions. Strong, malleable, good conductors of heat and electricity.

### Non-metals

Found on the right of the Periodic table, form negative ions. Dull, brittle, generally not solids at room temperature

### Alkali metals (Group 1):

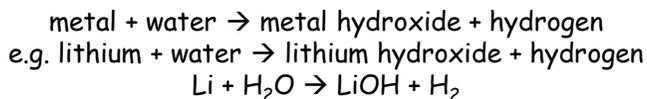
Soft, very reactive metals.

All have 1 electron on their outer energy level.

React with chlorine to form metal chlorides.

As you go down the group they get more reactive - because the atoms are bigger and so it's easier to lose the outer electron as its further from the nucleus.

React with water producing hydrogen and oxygen to make metal oxides.



### Halogens (Group 7):

Non-metal molecules with 2 atoms (diatomic molecules).

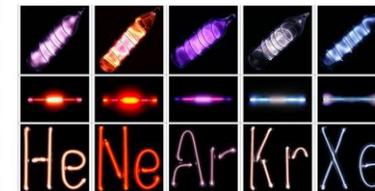
All have 7 electrons in their outer energy level. Reactivity decreases as you go down the group and it is harder for atoms to attract an electron when the outer energy level is so far from the nucleus.

Halide	Halogen added		
	Chlorine	Bromine	Iodine
lithium chloride	not done	no reaction	no reaction
sodium bromide	orange solution	not done	no reaction
potassium iodide	brown solution	brown solution	not done

More reactive halogens will displace less reactive halogens from an aqueous solution of its salt (a colour change is seen). Boiling points increase as you go down the group because the molecules get larger.

### Nobel Gases (Group 0):

Elements in Group 0 have stable electron arrangements (due to full outer energy levels). Helium has 2 electrons on its outer shell, the rest have 8. They are unreactive and do not easily form molecules. Boiling points increase as you go down the group because the atoms get larger.





**Objective:** To be able to talk about your holidays in the past.

Expression	Translation
Yesterday	Ayer
Last week	El año pasado
Last month	El mes pasado
Two days ago	Hace dos días
Two weeks ago	Hace dos semanas
Two months ago	Hace dos meses
In September	En septiembre
On Monday	El lunes

### The preterite tense

Singular	Nadar = To swim	Plural	Nadar = To swim
Yo	nadé	Nosotros	nadamos
Tú	nadaste	Vosotros	nadasteis
Él Ella Usted	nadó	Ellos Ellas Ustedes	nadaron

Singular	Comer = To eat	Plural	Comer = To eat
Yo	comí	Nosotros	comimos
Tú	comiste	Vosotros	comisteis
Él Ella Usted	comió	Ellos Ellas Ustedes	comieron

Singular	Salir = to go out	Plural	Salir = to go out
Yo	salí	Nosotros	salimos
Tú	saliste	Vosotros	salisteis
Él Ella Usted	salió	Ellos Ellas Ustedes	salieron

Nadar en el mar	To swim in the sea
Nadar en la piscina	To swim in the swimming pool
Pasear por la playa	To stroll along the beach
Visitar monumentos	To visit monuments
Visitar el museo arqueológico	To visit the archaeological museum
Sacar selfis	To take selfies
Montar en globo	To go up in a hot air balloon
Montar en moto acuática	To ride a jet-ski
Comprar recuerdos	To buy souvenirs
Bailar en una discoteca	To dance in a night club
Probar la gastronomía local	To try the local cuisine

Comer en restaurantes típicos	To eat in typical restaurants
Ver un partido	To watch a match

Subir a la montaña	To climb a mountain
Salir con los amigos	To go out with friends

**Question:** ¿Qué hiciste durante tus vacaciones?

**Answers:** El año pasado nadé en el mar, visité los monumentos históricos, monté en globo, y compré recuerdos.

**Question:** ¿Qué hiciste durante tus vacaciones?

**Answers:** El mes pasado, comí en restaurantes típicos y ví un partido de fútbol.

Hace dos días, subí a la montaña y salí con los amigos.





## The preterite tense - Irregular verb

Singular	Ir = to go	Plural	Ir = to go
Yo	fui	Nosotros	fuimos
Tú	fuiste	Vosotros	fuisteis
Él Ella Usted	fue	Ellos Ellas Ustedes	fueron

## The preterite tense - Irregular verb

Singular	Hacer = to do	Plural	Hacer = to do
Yo	hice	Nosotros	hicimos
Tú	hiciste	Vosotros	hicisteis
Él Ella Usted	hizo	Ellos Ellas Ustedes	hicieron

**Question:** ¿A dónde fuiste de vacaciones?

**Answers:** Fui de vacaciones a Alemania.

**Question:** ¿Cuándo fuiste de vacaciones?

**Answers:** Fui de vacaciones la semana pasada.

**Question:** ¿Con quién fuiste de vacaciones?

**Answers:** Fui de visita a ver a mis abuelos con mis padres. Fui de compras y fui a la playa. ¡Fue muy guay y fue relajante!

Ir de vacaciones	To go on holidays
Ir de visita	To pay a visit
Ir de compras a mercados	To go shopping in markets
Ir a la playa	To go to the beach
Ir en barco	To go by boat
Ir a Alemania	To go to Germany

Una escapada a la ciudad	City break
Un viaje cultural	Cultural trip
Un picnic	Picnic
Senderismo	Hiking
Ciclismo	Cycling
Visita guiada	Guided tour
Un crucero	A cruise

¡Fue arriesgado!	It was risky
¡Fue educativo!	It was educational
¡Fue estimulante!	It was stimulating
¡Fue peligroso!	It was dangerous
¡Fue relajante!	It was relaxing

## Fiesta del Yamor (Ecuador)

In late August and early September of each year the Yamor Festival is an example of the union of Christian and indigenous traditions. This festival originated in the middle of the last century, when the celebration of the Virgin of Montserrat, Patron Saint of Otavalo and the harvest or fertility festival came together.



## La Virgen de Montserrat (Spain)



Our Lady of Montserrat or the **Virgin of Montserrat** is a Marian title associated with a statue of the [Madonna and Child](#) venerated at the [Santa Maria de Montserrat](#) monastery on the [Montserrat](#) Mountain in [Catalonia, Spain](#). She is the [Patron Saint](#) of Catalonia, an honour she shares with [Saint George](#) ([Sant Jordi](#) in Catalan).

## La Virgen de Montserrat (Chile)



The cult of the Virgin of Montserrat is closely associated with crime and drug trafficking.



# St Joseph's College Spanish Department

Autumn Term 1: Redes sociales, tele y cine Year 9 Half Term 2



**Objective:** To be able to talk about the Internet, social media, TV & films.

## Ser and estar

These two verbs both mean "to be" but are used differently.

Ser is used for general descriptions, permanent conditions and the time.

Estar is used for positions, temporary conditions and emotions.

### Ser

**DEFINITIONS**  
La paella **es** un plato de arroz

**CUPATION**  
Soy profesora de español

**HARACTERISTICS**  
El niño **es** simpático

**IME**  
Son las once en punto

**RIGIN**  
La profesora **es** española

**RELATIONSHIPS**  
Ella **es** mi hermana

### vs Estar

**POSITION**  
La niña **está** sentada

**LOCATION**  
Córdoba **está** en el sur de España

**CTIONS**  
El perro **está** comiendo

**ONDITIONS**  
Ana **está** enferma

**MOTIONS**  
Estoy bien

El concurso	The game show
El documental	The documentary
La película	The film
El programa de deportes	The sports programme
El programa de humor	The comedy
El programa musical	The music programme
La serie	The series
El telediario	The news
La telenovela	The soap opera
El artista	The artist

El canal	The channel
El capítulo	The episode, chapter
El dispositivo	The device
La aplicación	The app
La tableta	The tablet
El actor	The actor
El bloguero	The Blogger
El fotógrafo	The photographer
El jefe	The boss
El piloto	The pilot

es

está

Cómica	Funny
De aventuras	Adventure
De ciencia ficción	Science fiction
De dibujos animados	Cartoons
De miedo	Horror
De misterio	A mystery
Del oeste	Western
Un musical	A musical
Romántica	Romantic
Compleja	Complex
Decepcionante	Disappointing
Entretenida	Entertaining
Profunda	Deep
Sangrienta	Gory
Agradable	Pleasant
Exigente	Demanding

Triste	Sad
Alegre	Happy
Descargando música	Downloading music
Comentando las fotos	Commenting on photos
De moda	In fashion - trending
Bien informado	Well informed
Obsesionado	Obsessed



# St Joseph's College Spanish Department

Autumn Term 1: Redes sociales, tele y cine Year 9 Half Term 2



## More frequency words

todos los días..... *every day*  
 cada día..... *every day*  
 todos los fines de semana..... *every weekend*  
 cada semana..... *every week*  
 de vez en cuando..... *sometimes*  
 no mucho..... *not a lot*  
 a menudo..... *often*  
 siempre..... *always*  
 nunca..... *never*  
 jamás..... *never*  
 ¡nunca jamás!..... *never ever!*

**Question:** ¿Qué prefieres hacer los fines de semana?

**Answers:** Los fines de semana prefiero descargar música. Acabo de comprar música por internet.

**Question:** ¿Usas Internet todos los días?

**Answers:** No, prefiero tocar la guitarra. Acabo de hacer un video en directo.

**Question:** ¿Ves películas en el cine o en casa?

**Answers:** No, prefiero ver videos de Youtube en mi teléfono o jugar a los videojuegos. Ya no veo películas en el cine.

**Question:** ¿Te gusta Instagram?

**Answers:** Sí, prefiero sacar fotos. Acabo de subir selfis a Instagram. Nadie usa Facebook.

## Gramática

### Comparisons with *preferir...* a...

The verb *preferir* (to prefer) is radical-changing in the present tense.

<i>prefiero</i>	I prefer
<i>prefieres</i>	you (singular) prefer
<i>prefiere</i>	he/she prefers
<i>preferimos</i>	we prefer
<i>preferís</i>	you (plural) prefer
<i>prefieren</i>	they prefer

This verb, followed by the preposition *a*, can be used in comparisons when you want to state that one thing is preferable to another.

- Prefiero ver una película a tocar la guitarra.*  
I'd rather watch a film than play the guitar.
- Preferimos F.C. Barcelona a F.C. Real Madrid.*  
We prefer Barcelona F.C. to Real Madrid F.C.

Descargar música	To download music
Comprar por Internet	To shopping online
Jugar a los videojuegos	To play video games
Llamar por videollamada	To make a video call
Sacar fotos	To take photos
Subir fotos	To upload photos
Ver videos	To watch videos
Tocar la guitarra	To play the guitar
Hacer un video en directo	To make a live video
Poner efectos	To add effects
Poner filtros	To add filters
Subir selfis	To upload selfies

### Acabar de

When used alone, the verb *acabar* means 'to finish', but when used in the present tense with the preposition *de* and an infinitive, it means 'to have just'.

<i>acabo</i>	} + <i>de</i> + infinitive	I have just
<i>acabas</i>		you (sing.) have just
<i>acaba</i>		he/she/it has just
<i>acabamos</i>		we have just
<i>acabáis</i>		you (pl.) have just
<i>acaban</i>		they have just

- Acabo de terminar mis deberes.*  
I have just finished my homework.
- Mónica acaba de ver su serie favorita.*  
Mónica has just watched her favourite series.

## Gramática

### Negative expressions (II)

Use these in addition to the negative words and expressions you have already come across.

<i>nadie</i>	no one
<i>ya no</i>	no longer/not anymore
<i>tampoco</i>	neither/nor/not... either

- En mi casa, nadie descarga música.*  
In my house, no one downloads music.
- Ya no subo fotos a Facebook.*  
I no longer upload photos to Facebook.
- No me gusta ver la tele, tampoco me gusta escuchar la radio.*  
I don't like watching TV, nor listening to the radio.



Respect for FAITH

Respect for LEARNING

Respect for OTHERS

Respect for COMMUNITY

Respect for SELF



**Objective:** Learn about clothes and outfits, fashion trends and describing clothes and shops.

### The preterite tense

Singular	Llevar = to wear	Plural	Llevar = to wear
Yo	llevé	Nosotros	llevamos
Tú	llevaste	Vosotros	llevasteis
Él Ella	llevó	Ellos Ellas	llevaron

### The present tense

Singular	Llevar = to wear	Plural	Llevar = to wear
Yo	llevo	Nosotros	llevamos
Tú	llevas	Vosotros	lleváis
Él Ella	lleva	Ellos Ellas	llevan

### The future tense

Singular	Llevar = to wear	Plural	Llevar = to wear
Yo	llevaré	Nosotros	llevaremos
Tú	llevarás	Vosotros	llevaréis
Ella Ella	llevará	Ellos Ellas	llevarán

### Demonstrative adjectives

this	este/esta
these	estos/estas
that	ese/esa
those	esos/esas
that (over there)	aquel/aquella
those (over there)	aquellos/aquellas



### The present continuous tense

Singular	Llevar = to wear	Plural	Llevar = to wear
Yo	estoy llevando	Nosotros	estamos llevando
Tú	estás llevando	Vosotros	estáis llevando
Él Ella	está llevando	Ellos Ellas	están llevando

**Question:** ¿Qué ropa llevaste ayer?

**Answers:** Ayer llevé unos pantalones y una camisa.

**Question:** ¿Llevas jeans al colegio?

**Answers:** No, llevo pantalones.

**Question:** ¿Llevarás mañana esta camisa a la fiesta?

**Answers:** No, prefiero llevar una camiseta ancha, unos pantalones largos y aquella chaqueta gruesa.

### Aa Gramática

#### Cardinal and ordinal numbers

Cardinal numbers are generally for counting (1, 2, 3...) and ordinal numbers are adjectives (first, second, third...).

Cardinal numbers	Ordinal numbers
one uno	first primero
two dos	second segundo
three tres	third tercero
four cuatro	fourth cuarto
five cinco	fifth quinto

Spanish ordinal numbers agree with the nouns they are describing in both gender and number. They are also usually placed before the noun.

• **La primera semana** de mis vacaciones fue aburrida.

### ¿Qué ropa llevas?



### ANTÓNIMOS





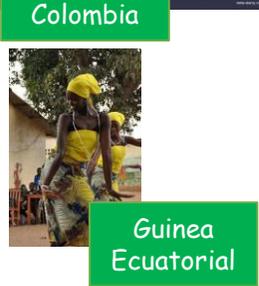
# St Joseph's College Spanish Department

Spring Term 2: La moda Year 9 Half Term 3



**El Corte Inglés S.A.** ([Spanish](#) for "the English cut") is the biggest department store group in Europe and ranks third worldwide. El Corte Inglés is Spain's only remaining [department store](#) chain.

## Traditional Hispanic outfits



## Departments

### LAS TIENDAS

- Segundo sótano**
  - Electrodomésticos
  - Supermercado
- Primer sótano**
  - Cuberterías
  - Cristalerías
- Planta baja**
  - Perfumería
  - Librería
  - Papelería
  - Discos
  - Bolsos

- Second basement**
  - Home appliances
  - Supermarket
- Second basement**
  - Cutlery
  - Glassware
- Ground floor**
  - Drugstore
  - Bookshop
  - Stationery
  - Music
  - Handbags

- First floor**
  - Ladies
  - Shoes
  - Hair salon

- Primera planta**
  - Señoras
  - Zapatería
  - Peluquería

- Segunda planta**
  - Caballeros
  - Agencia de viajes
  - Informática

- Second floor**
  - Gentlemen
  - Travel agency
  - Technology

- Tercera**
  - Niños
  - Juguetes
  - Mercería
- Cuarta planta**
  - Juventud
  - Tienda vaquera
  - Deportes
- Quinta planta**
  - Cafetería
  - Muebles
  - Ropa de casa

- Third floor**
  - Children
  - Toys
  - Haberdashery

- Fourth floor**
  - Teens
  - Denim
  - Sports

- Fifth floor**
  - Coffee shop
  - Furniture
  - Home Furnishings

Hola, tengo un problema. Esta camiseta tiene un agujero.

¿En serio? ¡Lo siento mucho!

Quiero cambiarla.

¿Tiene el tique?

Pues... ¡no lo tengo!

Entonces, no es posible.

Vale, gracias.



### Gramática

#### Indefinite adjectives

The following adjectives are placed before the noun they describe. They must also agree with the noun. Note that *varios/as* (several) only exists in the plural form.

English	Masculine	Feminine
some	algún/alguno(s)	alguna(s)
a lot of	mucho(s)	mucha(s)
certain	cierto(s)	cierta(s)
other	otro(s)	otra(s)
few	poco(s)	poca(s)
all	todo(s)	toda(s)
several	varios	varias

- Hay **muchos** restaurantes en Madrid.
- ¿Tienes esta camisa en **otros** colores?
- Todas** las series en Netflix son interesantes.



# St Joseph's College Spanish Department

Spring Term 2: Mi rutina y mi mundo Year 9 Half Term 4

**Objective:** Learn daily routines and talk about a better world.

**Reflexive verbs:** A reflexive verb is used when someone does an action for themselves.



	lavarse	peinarse
me	lavo	peino
te	lavas	peinas
se	lava	peina
nos	lavamos	peinamos
os	laváis	peináis
se	lavan	peinan

	peinarse
me	peino
te	peinas
se	peina
nos	peinamos
os	peináis
se	peinan



### Other reflexive verbs:

Cambiarse de ropa	To get changed
Relajarse	To relax
Llevarse mal	To get on badly with
Llevarse bien	To get on well with
Pelearse	To fight/argue
Enfadarse	To get angry



La rutina	Routine
A menudo	Often
A veces	Sometimes
Antes	First, before
Después	After, afterwards
Luego	Then, later
Mientras	While
Nunca	Never
Raras veces	Rarely
Siempre	Always
Cuando llego a casa	When I arrive home
Cuando me apetece	When I feel like it
A todas horas	All the time

ducharse	to have a shower
me ducho	I have a shower
te duchas	you (singular) have a shower
se ducha	he/she has a shower
nos duchamos	we have a shower
os ducháis	you (plural) have a shower
se duchan	they have a shower

**Question:** ¿Cómo es tu rutina por las mañanas? - What is your routine in the mornings?

**Answers:** Siempre me ducho, luego me visto y me peino. Después me lavo los dientes. A veces desayuno y, luego voy al instituto en autobús. - I always take a shower, then I get dressed and comb my hair. Afterwards I brush my teeth. Sometimes, I have breakfast and, then I go to school by bus.

**Question:** ¿y qué haces por la tarde? ¿A qué hora te acuestas? - And what do you do in the afternoon? At what time do you go to bed?

**Answers:** Cuando llego a casa, meriendo, hago los deberes y paseo al perro. Al final del día, a las siete me acuesto. - When I get home, I have a snack, I do my homework and I walk the dog. At the end of the day, at seven I go to bed.



# St Joseph's College Spanish Department

Spring Term 2: Mi rutina y mi mundo Year 9 Half Term 4

**Gramática**

**Verbs with prepositions**

Many verbs in Spanish are followed by a preposition such as *a, de, en* or *con*, but in some cases these prepositions are not the same as in English:

<i>comenzar/empezar</i>	
<i>a + infinitive</i>	to start doing
<i>dejar de + infinitive</i>	to stop doing
<i>depender de</i>	to depend on
<i>hablar con</i>	to talk to
<i>hablar sobre</i>	to talk about
<i>pensar en</i>	to think about
<i>soñar con</i>	to dream about
<i>volver a + infinitive</i>	to do something again

Some verbs need a preposition in English, but not in Spanish:

<i>buscar</i>	to look for	<i>mirar</i>	to look at
<i>decidir</i>	to decide to	<i>pagar</i>	to pay for
<i>intentar</i>	to try to	<i>pedir</i>	to ask for

**CONDITIONAL: something that you "would" or "should" do, an action that may happen but it's not happening for sure.**  
**I would recycle/I would protect/I would live**

## CONDICIONAL

<b>reciclar</b>	<b>-ía</b>
<b>proteger</b>	<b>-ías</b>
<b>vivir</b>	<b>-ía</b>
	<b>-íamos</b>
	<b>-íais</b>
	<b>-ían</b>

## Las fallas (España)

The **Fallas** is a traditional celebration held in commemoration of **Saint Joseph**. Each neighbourhood of the city has an organised group of people, the *Casal faller*, that works all year long holding fundraising parties and dinners, usually featuring the noted dish **paella**, a speciality of the region. Each *casal faller* produces a construction known as a *falla* which is eventually burned.



**The irregular verbs in the future are also irregular in the conditional:**  
**Tendría (I would have),**  
**Podrías (you could),**  
**Haría (he/she would do)**

Irregular verbs in the future and conditional

Many of the most frequently used verbs in these tenses are irregular, so it is vital to learn them.

	Future		Conditional	
<i>hacer</i>	<b>haré</b>	I will do	<b>haría</b>	I would do
<i>tener</i>	<b>tendré</b>	I will have	<b>tendría</b>	I would have
<i>poder</i>	<b>podré</b>	I will be able to	<b>podría</b>	I would be able to / I could
<i>decir</i>	<b>diré</b>	I will say	<b>diría</b>	I would say
	<b>habrá</b>	there will be	<b>habría</b>	there would be

**Question:** ¿Cómo **harías** un mundo mejor?  
**Answers:** **Reciclaría** el desperdicio de plástico, **protegería** los hábitats naturales. Me preocupa el medioambiente. Sueño con un futuro mejor.



La basura	Rubbish
La contaminación	Contamination, pollution
Contaminante	Contaminating, polluting
El crecimiento	The growth
El desperdicio de plástico	Plastic waste
La destrucción	Destruction
La extinción	Extinction
Los hábitats naturales	Natural habitats
Las inundaciones	Floods
Las lluvias torrenciales	Torrential rains
Los mares	The seas
Medioambiental	Environmental
La sequía	Drought
La tala de árboles	Tree felling
Reciclar	To recycle
Recoger	To collect
Proteger	To protect

**Direct object pronouns:** replaces an object in a sentence and it is placed before the verb.



Lo he comprado para ti, porque te quiero mucho.

## Direct Object Pronouns

<b>ME</b> (me)	<b>NOS</b> (us)
<b>TE</b> (you: singular and informal)	<b>OS</b> (you: plural and informal)
<b>LO</b> (him, it, you: formal masculine and singular)	<b>LOS</b> (them and you: masculine, formal and plural)
<b>LA</b> (her, it, you: formal feminine and singular)	<b>LAS</b> (them and you: feminine, formal and plural)

<b>Me enfurece</b>	I'm furious about
<b>Nos da miedo</b>	We are scared of
<b>Me da pena</b>	I'm saddened by
<b>Me da rabia</b>	I'm angry about
<b>Me parece injusto</b>	I feel it is unfair
<b>Nos preocupa</b>	We are worried about
<b>Nos permite</b>	He/she allows me



**Objective:** Learn about Spanish speaking countries, Latin dance, music, festivals and customs.

### 4.1 G La vida en familia

- A media mañana - at mid-morning
- Acostarse - to go to bed
- El bollo - bun
- La cena - evening meal, dinner
- Coger - to catch
- La comida - food, meal
- El desayuno - breakfast
- La dieta - diet
- La leche - milk
- Levantarse - to get up
- Ligero/a - light, not heavy
- Participar - to participate
- Probar - to try, to try out
- El recreo - break/recess
- Saludable - healthy
- La sobremesa - sitting chatting at the table after a meal
- El trabajador - worker
- La tradición - tradition
- Traer - to bring
- Tranquilamente - calmly
- El vaso - glass

### 4.1 F Algunas costumbres regionales

- La actuación - performance
- Agradable - pleasant
- El ambiente - atmosphere
- Antiguo/a - old
- La batalla - battle
- El caballo - horse
- La camisa - shirt
- El concurso - competition
- Conmemorar - to commemorate
- Correr - to run
- La costumbre - custom
- Demasiado - too much, to many
- El desfile - parade, procession
- El diablo - devil
- Divertirse - to enjoy oneself
- Emocionante - exciting
- El encierro - bull run
- Encontrar - to find
- Enorme - enormous
- Entender - to understand
- Entrenarse - to train
- El espectáculo - show, display

### 4.1 F Algunas costumbres regionales

- Extraño/a - strange
- Fatal - awful
- Formar - to form
- Histórico - historic
- Humano - human
- Impresionante - impressive
- Incómodo/a - uncomfortable
- Llevar - to wear, to carry
- El mediterráneo - Mediterranean
- El/la moro/a - Moor (a person from North Africa)
- Nadie - no one
- Natural - natural
- El origen - origin
- Pasarlo bien - to have a good time
- El peligro - danger
- Peligroso/a - dangerous
- Por encima de - over
- Precioso/a - beautiful
- El producto - product
- Saltar - to jump
- La seguridad - security
- La suerte - luck
- El toro - bull
- La torre - tower
- El traje - suit
- Único/a - only, unique
- Varios/as - various, several
- Vestirse (de) - to dress (in)

### 4.1 H ¿Cambian las costumbres?

- Acostarse - to go to bed
- Cerrarse - to close
- Coger - to catch
- Corto/a - short
- Empezar - to start
- Hace calor - it is hot
- Levantarse - to get up
- El marido - husband
- La mayoría - majority
- El ordenador - computer
- La pareja - couple, partner
- El paseo - the walk, the stroll
- La plaza - square
- Probar - to try, to taste

### 4.1 H ¿Cambian las costumbres?

- La plaza - square
- Probar - to try, to taste
- Quedarse - to stay
- Quitar la mesa - to clear the table
- El rato - while, short time
- Relajarse - to relax
- Reunirse - to get together, to meet
- La sobremesa - sitting chatting at the table after a meal
- Traer - to bring

### 4.2 G Fiestas de España: Tomatina

- Al final - at the end
- Americano/a - American
- Australiano/a - Australian
- Británico/a - British
- Japonés/esa - Japanese
- El camión - lorry
- La camiseta - t-shirt
- El carnaval - carnival
- Divertirse - to have fun
- Duchar - to shower
- Empezar - to begin
- La entrada - (entry) ticket
- La foto - photo
- La gente - people
- Hace (+ tiempo) - (time) ago
- Limitar - to limit
- Limpiar - to clean
- Llegar - to arrive
- La manguera - hose, hosepipe
- Mojado/a - wet
- El montón - heap, pile
- La plaza mayor - main square
- Primero, primera - first
- Pronto - soon
- Rojo/a - red
- Sucio/a - dirty
- Típico/a - typical
- Tirar - to throw
- Todo el mundo - everybody
- El tomate - tomato
- El turismo - tourism
- Varios/as - various, several
- El/la visitante - visitor
- El/la voluntario/a - volunteer

### 4.2 G Fiestas de España: Tomatina

- Volver - to return, come back

### 4.2 F Fiestas del mundo hispano

- Los antepasados - ancestors
- Aparecer - to appear
- El azúcar - sugar
- La calavera - skull
- Celebrarse - to be held
- El cementerio - cemetery
- Cerca de - close to, near
- La ciudad - city, town
- Comenzar - to begin
- Completamente - completely
- El desfile - parade
- El diablo - devil
- Disfrazado - dressed up, disguised
- Encendido/a - lit
- El esqueleto - skeleton
- El estaño - tin (metal)
- Los familiares - family members
- La flor - flower
- Hispanico - Hispanic (of the Spanish speaking world)
- La mina - mine
- El minero, la minera - miner
- El mole - 'mole' sauce / Mexican chocolate sauce
- La montaña - mountain
- El muerto, la muerta - dead
- La normalidad - normality
- El número - number
- La plata - silver
- Proteger - to protect
- El pueblo - town, village
- El regalo - gift, present
- Triste - sad
- La tumba - grave
- La vela - candle
- Vender - to sell
- Viejo/a - old

### 4.2 H Fiestas de España: Las Fallas

- Aparte de - apart from
- Asistir (a) - to attend
- El barrio - neighbourhood, area
- La basura - litter, rubbish

### 4.2 H Fiestas de España: Las Fallas

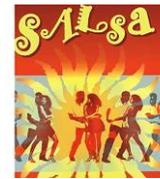
- El/La bombero/a - firefighter
- Bonito/a - pretty
- La cantidad - quantity
- El/La carpintero/a - carpenter
- La cera - wax
- Construir - to build
- Contratar - to employ
- El desorden - mess
- Despertar - to wake up
- El que, la que - the one that
- En seguida - right away
- El espectáculo - show, display
- Estupendo/a - stupendous, wonderful
- Fenomenal - awesome
- La feria - fair
- Los festejos - festivities
- Los fuegos artificiales - fireworks
- Ganar - to win, to earn
- Gastar - to spend
- La gente - people
- Grecia - Greece
- Guardar - to keep
- La hoguera - bonfire
- El idioma - language
- Limpiar - to clean
- Lleno/a - full
- La madera - wood
- Mirar - to watch, to look at
- Molestar - to bother, to annoy
- El museo - museum
- El nombre - name
- Oír - to hear
- El papel - paper
- Peor - worse, worst
- El petardo - firecracker
- El premio - prize, award
- Prender fuego - to set on fire
- La primavera - spring
- El principio - principle; beginning
- Quemar - to burn
- El recuerdo - souvenir
- Los restos - remains
- El ruido - noise
- Sin embargo - however
- Subir - to go up
- El taller - workshop
- El tema - theme
- La tendencia - trend
- La tienda - the shop
- Tirar - to throw
- Último - last



**Radical-changing verbs** in the present tense use the same endings as regular verbs, but have a vowel change in the middle.

### The present tense

Singular	<b>Empezar = to start</b>	Singular	<b>Pensar = to think</b>	Singular	<b>Preferir = to prefer</b>
Yo	emp <b>ie</b> zo	Yo	pi <b>e</b> nso	Yo	pref <b>ie</b> ro
Singular	<b>Poder = to be able to</b>	Singular	<b>Dormir = to sleep</b>	Singular	<b>Encontrar = to find</b>
Yo	pu <b>ue</b> do	Yo	du <b>ue</b> rmo	Yo	enc <b>ue</b> ntro



The future ("will") and the conditional ("would") are both formed by adding specific endings to the infinitive

### The future tense

Visitar = to visit	Visitar = to visit
Visitar <b>é</b>	Visitar <b>emos</b>
Visitar <b>ás</b>	Visitar <b>éis</b>
Visitar <b>á</b>	Visitar <b>án</b>

### The conditional tense

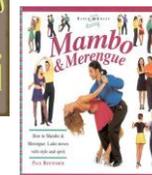
Visitar = to visit	Visitar = to visit
Visitar <b>ía</b>	Visitar <b>íamos</b>
Visitar <b>ías</b>	Visitar <b>iais</b>
Visitar <b>ía</b>	Visitar <b>ían</b>

Irregular verb  
Hacer = to do

Future	Haré	I will do
Conditional	Haría	I would do



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### Spanish speaking countries

## EL MES DE LA HERENCIA HISPANA

PERÚ 28 DE JUNIO DE 1951

ECUADOR 24 DE ABRIL DE 1960

ARGENTINA 9 DE MAYO DE 1916

GUATEMALA 15 DE SEPTIEMBRE DE 1921

PARAGUAY 14 DE MAYO DE 1811

HONDURAS 15 DE SEPTIEMBRE DE 1924

¡CELEBRAMOS NUESTRA INDEPENDENCIA!

DESDE EL 15 DE SEPTIEMBRE HASTA EL 15 DE OCTUBRE

MÉXICO 16 DE SEPTIEMBRE DE 1810

BOLIVIA 6 DE AGOSTO DE 1825

COSTA RICA 11 DE SEPTIEMBRE DE 1821

CUBA 20 DE ABRIL DE 1902

GUINEA ECUATORIAL 12 DE OCTUBRE DE 1968

VENEZUELA 5 DE AGOSTO DE 1811

URUGUAY 25 DE AGOSTO DE 1818

EL SALVADOR 15 DE SEPTIEMBRE DE 1821

PANAMA 10 DE AGOSTO DE 1903

CHILE 18 DE FEBRERO DE 1818

NICARAGUA 15 DE AGOSTO DE 1821

PUERTO RICO 25 DE SEPTIEMBRE DE 1916

COLOMBIA 20 DE JULIO DE 1810

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# St Joseph's College Spanish Department

Summer Term 3: Cine, tradiciones y costumbres Year 9 Half Term 6



## Fiesta de San Juan



**Saint John's Eve**, starting at sunset on 23 June, is the eve of celebration before the [Feast Day of Saint John the Baptist](#). The Feast of Saint John closely coincides with the June [solstice](#), also referred to as [Midsummer](#) in the Northern Hemisphere. The Christian [holy day](#) is fixed at 24 June; but in most countries festivities are mostly held the night before, on Saint John's Eve.

## Fiesta de la Tirana (Chile)

**Fiesta de la Tirana** is an annual festival held in the locality of [La Tirana](#) in the [Tarapacá Region](#) of northern [Chile](#). The celebration takes place on July 16 in honour of the [Virgen del Carmen](#). Dancing is a big part of the celebrations of Fiesta de La Tirana, and dance groups and pilgrims dance before the virgin.



## Fiesta de agua (Spain)



**Fiesta da Auga** (The Water Festival in Spanish) is a popular festival celebrated on August 16 in Vilagarcía de Arousa, a Spanish city in the province of Pontevedra, in which after moving the figure of San Roque, Patron Saint of the city, from the parish church of "Santa Eulalia de Arealonga" to the chapel of San Roque, the pilgrims ask the inhabitants of Vilagarcía de Arousa for water to cool off and they throw water from the balconies and wet the pilgrims.

## La Mercè (Spain)



**La Mercè** is the annual festival of the city of [Barcelona](#) in [Catalonia](#), [Spain](#). It has been an official city holiday since 1871. Some of the most important features of the festival were introduced in the year 1902, when parades included [papier maché](#) "giants" known as [gegants i capgrossos](#) and a popular dance from [Empordà](#) that was becoming popular throughout Catalonia: the [Sardana](#).

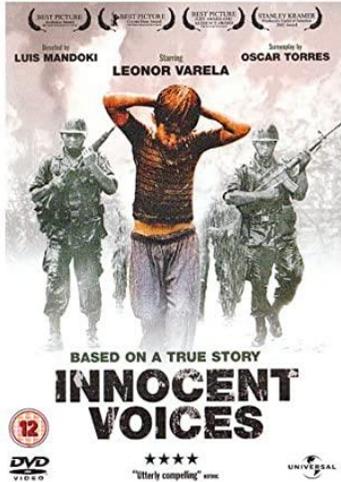
## El Camino de Santiago



**El Camino de Santiago** is a large network of ancient pilgrim routes stretching across Europe and coming together at the tomb of St. James (Santiago in Spanish) in [Santiago de Compostela](#) in north-west Spain.



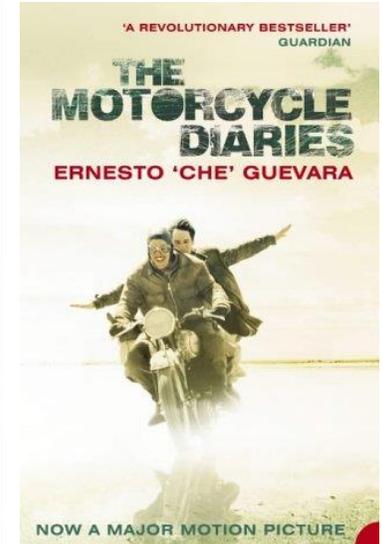
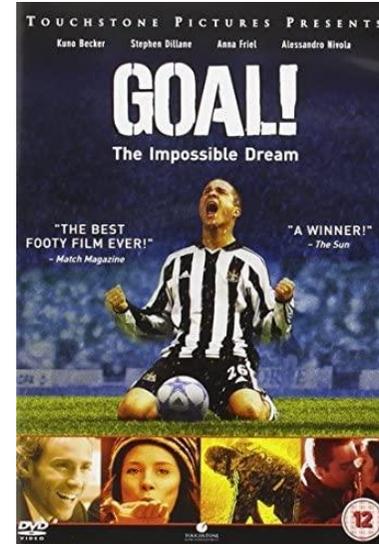
### CREDITS



**Director:** Dirección: Luis Mandoki.  
**Country:** País: México.  
**Year:** Año: 2004  
**Duration:** Duración: 120 minutos  
**Genre: Screenplay:** Género: Drama.  
**Production: Music:** Guion: Oscar Orlando Torres y Luis Mandoki.  
**Photography:** Producción: Luis Mandoki, Alejandro Soberón y Lawrence Bender.  
**Música:** André Abujamra.  
**Fotografía:** Juan Ruiz-Anchía.

### SINOPSIS

The film tells the story of Chava, a ten-year-old boy who grows up to the rhythm of bullets; a child who, like any other, wants to play, but the situation of war in which he lives does not allow it. Chava has to face a premature loss of innocence, becoming the support of her family. Faced with this situation, the child must make a decision that could drastically change his life: stay with his family in fear of being recruited, belong to the guerrilla or escape to try to survive.





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PASADO		PRESENTE		FUTURO	
ayer	yesterday	hoy	today	mañana	tomorrow
anteayer	the day before yesterday	normalmente	usually	más tarde	later
la semana pasada	last week	a veces	sometimes	la semana que viene	next week
el fin de semana pasado	last weekend	una vez a la semana	once a week	el próximo mes	next month
el lunes pasado	last Monday	dos veces a la semana	Two times a week	el año que viene	next year
el mes pasado	last month	muchas veces	many times	el próximo fin de semana	next weekend
anoche	last night	siempre	always	el próximo lunes	next Monday
el otro día	the other day	nunca	never	esta tarde	this afternoon
el año pasado	last year	varias veces	several times	esta noche	tonight
entonces	then	a menudo	often	mañana por la mañana	tomorrow morning
hace dos días	two days ago	todos los días	every day	mañana por la tarde	tomorrow afternoon
hace dos años	two years ago	de vez en cuando	from time to time	mañana por la noche	tomorrow night
ayer por la mañana	yesterday morning	casi nunca	almost never	dentro de dos años	in two years
		los lunes	on Mondays		

**QUESTION WORDS**

- ¿Qué ... ? - What/Which?
- ¿Cuándo ... ? - When?
- ¿Dónde ... ? - Where?
- ¿Cómo ... ? - How?
- ¿Por qué ... ? - Why?
- ¿Cuánto/a ... ? - How much?
- ¿Cuántos/cuántas ... ? - How many?
- ¿Para qué ... ? - What for ... ?
- ¿Para quién ... ? - Who for ... ?
- ¿Con quién ... ? - Who with ... ?

**OPINIONS**

- Pienso que - I think that
- Creo que - I believe that
- En mi opinión - in my opinion
- Opino que/A mi modo de ver - I am of the opinion that
- Me parece que - It seems to me that...
- Me gusta (mucho) - I like (a lot)
- No me gusta (nada) - I don't like (at all)
- Me encanta - I love
- Me chifla - I am crazy about
- Me mola - I like
- Odio - I hate
- Detesto - I detest

**CONNECTIVES**

- Y/e - and
- Sin embargo - however
- O/u - or
- Ya que/porque - because
- Por eso - therefore
- Por un lado - on the one hand
- Por otro lado - on the other hand
- Pero - but
- También - also, too
- Además - besides
- Cuando - when





VERB TENSES

PASADO	PRESENTE	FUTURO																																					
<p>1 <b>PRETERITE</b>: actions and events that are finished. I SPOKE / I ATE / I LIVED</p> <table border="1"> <tr> <td>HABLAR habl -é -aste -ó -amos -asteis -aron</td> <td>COMER com -í -iste -ió -imos -isteis -ieron</td> <td>VIVIR viv -í -iste -ió -imos -isteis -ieron</td> </tr> </table> <p>2 <b>IMPERFECT</b>: actions and events that "used to happen" (repeated actions, such "I used to go to school") or "were happening" during a period of time or when you are describing an event in the past. I used to speak or I was talking /I used to eat or I was eating/I used to live or I was living.</p> <table border="1"> <tr> <td>HABLAR habl -aba -abas -aba -ábamos -abáis -aban</td> <td>COMER com -ía -ías -ía -íamos -íais -ían</td> <td>VIVIR viv -ía -ías -ía -íamos -íais -ían</td> </tr> </table> <p>3 <b>PRESENT PERFECT</b>: (present of "haber" + past participle). Actions or events in the past that are somehow related to the present, either because they are not over yet or because the effect of the action is still visible in the present. I have spoken / I have eaten / I have lived.</p> <table border="1"> <tr> <td>He Has Ha Hemos Habéis Han</td> <td>+</td> <td> <table border="1"> <tr> <td>HABLAR hablado</td> </tr> <tr> <td>COMER comido</td> </tr> <tr> <td>VIVIR vivido</td> </tr> </table> </td> </tr> </table>	HABLAR habl -é -aste -ó -amos -asteis -aron	COMER com -í -iste -ió -imos -isteis -ieron	VIVIR viv -í -iste -ió -imos -isteis -ieron	HABLAR habl -aba -abas -aba -ábamos -abáis -aban	COMER com -ía -ías -ía -íamos -íais -ían	VIVIR viv -ía -ías -ía -íamos -íais -ían	He Has Ha Hemos Habéis Han	+	<table border="1"> <tr> <td>HABLAR hablado</td> </tr> <tr> <td>COMER comido</td> </tr> <tr> <td>VIVIR vivido</td> </tr> </table>	HABLAR hablado	COMER comido	VIVIR vivido	<p>1 <b>PRESENT SIMPLE</b>: Used to describe what you usually do or to talk about universal facts. I SPEAK/I EAT/I LIVE</p> <table border="1"> <tr> <td>HABLAR habl -o -as -a -amos -áis -an</td> <td>COMER com -o -es -e -emos -éis -en</td> <td>VIVIR viv -o -es -e -imos -ís -en</td> </tr> </table> <p>2 <b>PRESENT CONTINUOUS</b>: To talk about what you are doing at the moment, EVENTS that are happening RIGHT NOW. I am speaking/I am eating/I am living</p> <table border="1"> <tr> <td>Estoy Estás Está Estamos Estáis Están</td> <td>+</td> <td> <table border="1"> <tr> <td>HABLAR habl -ando</td> </tr> <tr> <td>COMER com -iendo</td> </tr> <tr> <td>VIVIR viv -iendo</td> </tr> </table> </td> </tr> </table> <p><b>CONDICIONAL</b></p> <p><b>CONDICIONAL</b>: something that you "would" or "should" do, an action that may happen but it's not happening for sure. I would talk/I would eat/I would live</p> <table border="1"> <tr> <td>hablar comer vivir</td> <td>+</td> <td> <table border="1"> <tr> <td>-ía -ías -ía -íamos -íais -ían</td> </tr> </table> </td> </tr> </table>	HABLAR habl -o -as -a -amos -áis -an	COMER com -o -es -e -emos -éis -en	VIVIR viv -o -es -e -imos -ís -en	Estoy Estás Está Estamos Estáis Están	+	<table border="1"> <tr> <td>HABLAR habl -ando</td> </tr> <tr> <td>COMER com -iendo</td> </tr> <tr> <td>VIVIR viv -iendo</td> </tr> </table>	HABLAR habl -ando	COMER com -iendo	VIVIR viv -iendo	hablar comer vivir	+	<table border="1"> <tr> <td>-ía -ías -ía -íamos -íais -ían</td> </tr> </table>	-ía -ías -ía -íamos -íais -ían	<p>1 <b>IMMEDIATE FUTURE</b>: (present of verb "ir" + a + infinitive of the action verb). To talk about actions or events that have been planned or are going to happen for sure or are close to the present. I am going to speak/I am going to eat/I am going to live.</p> <table border="1"> <tr> <td>Voy Vas Va Vamos Váis Van</td> <td>+</td> <td>a</td> <td>+</td> <td> <table border="1"> <tr> <td>HABLAR habl -ar</td> </tr> <tr> <td>COMER com -er</td> </tr> <tr> <td>VIVIR viv -ir</td> </tr> </table> </td> </tr> </table> <p>2 <b>SIMPLE FUTURE</b>: To talk about what you WILL do in the future but it's not an arranged plan yet. I will speak/I will eat/I will live</p> <table border="1"> <tr> <td>hablar comer vivir</td> <td>+</td> <td> <table border="1"> <tr> <td>-é -ás -á -emos -éis -án</td> </tr> </table> </td> </tr> </table>	Voy Vas Va Vamos Váis Van	+	a	+	<table border="1"> <tr> <td>HABLAR habl -ar</td> </tr> <tr> <td>COMER com -er</td> </tr> <tr> <td>VIVIR viv -ir</td> </tr> </table>	HABLAR habl -ar	COMER com -er	VIVIR viv -ir	hablar comer vivir	+	<table border="1"> <tr> <td>-é -ás -á -emos -éis -án</td> </tr> </table>	-é -ás -á -emos -éis -án
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Describing an image:

En la foto	In the photo
En la imagen	In the image
En primer plano	In the foreground
En segundo plano	In the background
A la izquierda	On the left
A la derecha	On the right
Se puede ver	You can see
Veo	I see
Hay	There is / there are





# The Periodic Table of Elements

1	2											3	4	5	6	7	0		
		<b>Key</b> relative atomic mass <b>atomic symbol</b> name atomic (proton) number										1 <b>H</b> hydrogen 1							4 <b>He</b> helium 2
7 <b>Li</b> lithium 3	9 <b>Be</b> beryllium 4											11 <b>B</b> boron 5	12 <b>C</b> carbon 6	14 <b>N</b> nitrogen 7	16 <b>O</b> oxygen 8	19 <b>F</b> fluorine 9	20 <b>Ne</b> neon 10		
23 <b>Na</b> sodium 11	24 <b>Mg</b> magnesium 12											27 <b>Al</b> aluminium 13	28 <b>Si</b> silicon 14	31 <b>P</b> phosphorus 15	32 <b>S</b> sulfur 16	35.5 <b>Cl</b> chlorine 17	40 <b>Ar</b> argon 18		
39 <b>K</b> potassium 19	40 <b>Ca</b> calcium 20	45 <b>Sc</b> scandium 21	48 <b>Ti</b> titanium 22	51 <b>V</b> vanadium 23	52 <b>Cr</b> chromium 24	55 <b>Mn</b> manganese 25	56 <b>Fe</b> iron 26	59 <b>Co</b> cobalt 27	59 <b>Ni</b> nickel 28	63.5 <b>Cu</b> copper 29	65 <b>Zn</b> zinc 30	70 <b>Ga</b> gallium 31	73 <b>Ge</b> germanium 32	75 <b>As</b> arsenic 33	79 <b>Se</b> selenium 34	80 <b>Br</b> bromine 35	84 <b>Kr</b> krypton 36		
85 <b>Rb</b> rubidium 37	88 <b>Sr</b> strontium 38	89 <b>Y</b> yttrium 39	91 <b>Zr</b> zirconium 40	93 <b>Nb</b> niobium 41	96 <b>Mo</b> molybdenum 42	[98] <b>Tc</b> technetium 43	101 <b>Ru</b> ruthenium 44	103 <b>Rh</b> rhodium 45	106 <b>Pd</b> palladium 46	108 <b>Ag</b> silver 47	112 <b>Cd</b> cadmium 48	115 <b>In</b> indium 49	119 <b>Sn</b> tin 50	122 <b>Sb</b> antimony 51	128 <b>Te</b> tellurium 52	127 <b>I</b> iodine 53	131 <b>Xe</b> xenon 54		
133 <b>Cs</b> caesium 55	137 <b>Ba</b> barium 56	139 <b>La*</b> lanthanum 57	178 <b>Hf</b> hafnium 72	181 <b>Ta</b> tantalum 73	184 <b>W</b> tungsten 74	186 <b>Re</b> rhenium 75	190 <b>Os</b> osmium 76	192 <b>Ir</b> iridium 77	195 <b>Pt</b> platinum 78	197 <b>Au</b> gold 79	201 <b>Hg</b> mercury 80	204 <b>Tl</b> thallium 81	207 <b>Pb</b> lead 82	209 <b>Bi</b> bismuth 83	[209] <b>Po</b> polonium 84	[210] <b>At</b> astatine 85	[222] <b>Rn</b> radon 86		
[223] <b>Fr</b> francium 87	[226] <b>Ra</b> radium 88	[227] <b>Ac*</b> actinium 89	[261] <b>Rf</b> rutherfordium 104	[262] <b>Db</b> dubnium 105	[266] <b>Sg</b> seaborgium 106	[264] <b>Bh</b> bohrium 107	[277] <b>Hs</b> hassium 108	[268] <b>Mt</b> meitnerium 109	[271] <b>Ds</b> darmstadtium 110	[272] <b>Rg</b> roentgenium 111	[285] <b>Cn</b> copernicium 112	[286] <b>Nh</b> nihonium 113	[289] <b>Fl</b> flerovium 114	[289] <b>Mc</b> moscovium 115	[293] <b>Lv</b> livermorium 116	[294] <b>Ts</b> tennessine 117	[294] <b>Og</b> oganesson 118		

\* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted.

Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.



# Multiplication Grid & Formulae



## My Multiplication Chart 1-12

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

### Areas

Rectangle =  $l \times w$

Parallelogram =  $b \times h$

Triangle =  $\frac{1}{2} b \times h$

Trapezium =  $\frac{1}{2}(a+b)h$

### Circles

Circumference =  $\pi \times \text{diameter}$ ,  $C = \pi d$

Circumference =  $2 \times \pi \times \text{radius}$ ,  $C = 2\pi r$

Area of a circle =  $\pi \times \text{radius squared}$ ,  $A = \pi r^2$

### Pythagoras

Pythagoras' Theorem  
For a right-angled triangle,  
 $a^2 + b^2 = c^2$

Trigonometric ratios (new to F)  
 $\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$ ,  $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$ ,  $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$

### Quadratic equations

The Quadratic Equation  
The solutions of  $ax^2 + bx + c = 0$ , \_\_\_\_\_  
where  $a \neq 0$ , are given by  $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$

### Volumes

Cuboid =  $l \times w \times h$

Prism = area of cross section  $\times$  length

Cylinder =  $\pi r^2 h$

Volume of pyramid =  $\frac{1}{3} \times \text{area of base} \times h$

### Compound measures

Speed  
 $\text{speed} = \frac{\text{distance}}{\text{time}}$

Density  
 $\text{density} = \frac{\text{mass}}{\text{volume}}$

Pressure  
The formula for pressure does not need to be learnt, and will be given within the relevant examination questions.

### Trigonometric formulae

Sine Rule  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule  $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle =  $\frac{1}{2} ab \sin C$

Foundation tier formulae

Higher tier formulae



At St Joseph's College we...



tandard English



ause



laborate



rticulate



ey words

Like a(n)...

Scientist  
Mathematician  
Sports Scientist  
Engineer  
Artist  
Historian  
Linguist  
Inventor  
Geographer  
Theologian  
Manager  
Philologist  
Musician  
Scholar





# At St Joseph's College we...

S

1

**Standard English** means formal English. No Slang. Speak like a scholar.

"I believe.../ I'd like to add.../ Please can I have help.../ Am I right in thinking...? / I disagree with...."

P

3

**Pause.** Think before you speak – is what you are about to say relevant?

Does this link to the question?

Does this develop your understanding of the subject?

E

1

**Elaborate.** Can you expand your answer? Consider using a connective, e.g. however, besides, therefore, consequently. Do you agree or disagree with a previous comment?

Can you link this to another topic or lesson? Can you give an example or evidence?

A

1

**Articulate.** Have you read through your work silently? Have you checked how to pronounce more complex words? What volume will you read this at? Are you confident in articulating yourself verbally?

K

5

**Key words.** Check your Knowledge Organiser – are there any relevant words that would help? Could you use a thesaurus to be more ambitious? Is the word you are using related to the topic you are discussing?



# Equipment

This shows the expected list of daily equipment needed in school.

**Please ensure that you have the appropriate equipment from the start of the Autumn Term, in September.**

Items can be purchased on Parent Pay, if necessary.

**Pencil case – preferably clear**

Black/blue pens

**Green pens**

Pencils and sharpener

**Ruler**

Rubber

**Glue stick**

Highlighters

**Math set**

Calculator



## SJC: The Basics Every lesson! Every day!



ESSENTIALS



IDEAL



- Essentials
- Pencil case
- Blue/Black pens
- Green pens
- Pencils
- Sharpener
- Rubber
- Ruler
- Calculator
- Compass
- Protractor
- Exercise Books
- Textbooks
- Coloured pencils
- Highlighters

- Ideal
- Document wallet
- Glue stick
- Scissors



# 2021-22 Homework Timetable Year 9









# 2021-22 Assessment Calendar Year 9







## Be Safe

If you're concerned about anything at all

No worry is too big or too small

Our wish is that you're safe and well

So if you're worried, then please do tell

We're here to offer help to you

Be sure to send an email through

**[besafe@sjc.ac](mailto:besafe@sjc.ac)**



## Respect for Faith

We believe that we are a school community rooted in the Catholic Christian faith with respect for all faiths, religions and views. All students and staff have the right to express their faith in God and be treated with dignity.

## Respect for Self

We believe we are all children of God and encourage each other to see this within themselves. We believe that our social, emotional and spiritual development, being healthy and happy are central to our wellbeing. We believe that we must protect these rights for all.

## Respect for Others

We believe that everyone deserves respect and we will treat others as we would like to be treated.

## Respect for Learning

We believe that students and staff must be prepared in order to make the best of every learning opportunity. We believe that everyone can improve, make progress and achieve success. We believe that developing independence and determination is key to life's journey.

## Respect for the College and Wider Community

We seek to care for our College and serve our local community. We believe that the college environment should be respected and safe.

## STUDENTS WILL:

1. Be proud of their faith and treat all faiths with respect.
2. Show respect, and courtesy to all, treating all members of the school and visitors as they would like to be treated themselves. They will make sure the school is a safe place for all to express their views and opinions.
3. Value the whole school treating every area with respect making sure that every part of the school is clean, tidy and litter free.
4. Move around the school calmly, sensibly and safely.
5. Have a 'positive can do' attitude to learning, take pride in their appearance by wearing a smart uniform, arriving on time to lessons with the right equipment.
6. Work to the best of their ability. They will not give up even when work is difficult and challenging. They will take responsibility for their actions and for achieving their potential.
7. Participate in at least one extra-curricular activity to support their social and emotional development.
8. Respect all school expectations and follow the rewards/sanctions procedures.

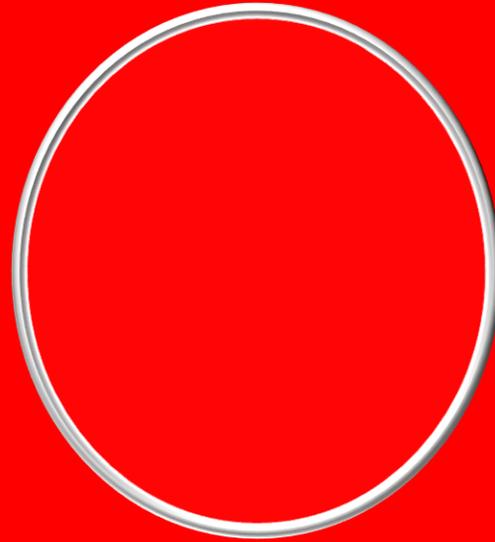
## STAFF WILL:

1. Respect the views and opinions of all students, parents and colleagues. They will act as role models to students by demonstrating patience, respect and fairness.
2. Demonstrate their belief in a growth mindset: that all learners can improve, progress and achieve success.
3. Dress smartly for lessons, arrive on time, greet students at the door and ensure that learning can begin immediately.
4. Prepare for learning by knowing their students, having excellent subject knowledge and ensuring every student is challenged and stretched.
5. Create a positive and engaging learning environment and ensure that class displays are supportive, relevant, encourage resilience and are presentable.
6. Assess learning regularly, create different opportunities for students to access learning content and help students achieve their personal goals.
7. Promote the health, happiness and well-being of all students.
8. Apply the school expectations fairly to all students.





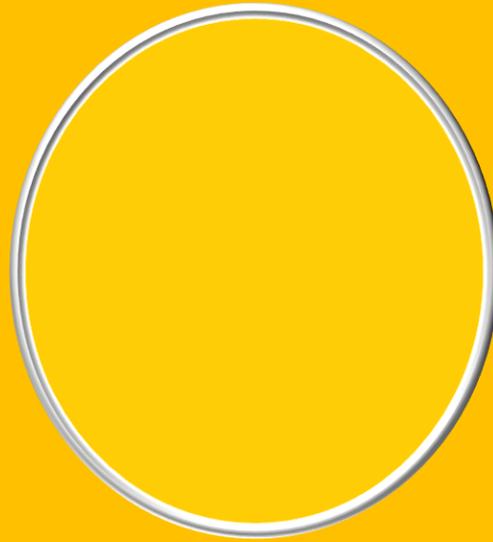
**Traffic light:**



**Red**



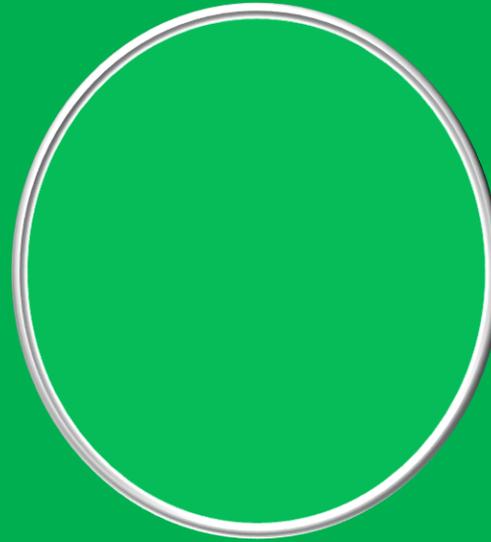
**Traffic light:**



**Amber**



**Traffic light:**



**Green**



# A, B, C, D Cards

A



# A, B, C, D Cards

**B**



# A, B, C, D Cards

C



# A, B, C, D Cards

D