



# KS4 Knowledge Organiser

## Subject: Business and Enterprise

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### **Knowledge Organiser instructions:**

You will be set three pieces of homework per week and you should use the information from each topic to make a poster or a mind map. You will need to bring your work in to school and will be quizzed on each topic in class.

At the back of the knowledge organiser there are some suggested extra tasks that could be completed on top of the homework you will be set.



**For further support,  
follow this link to the  
school website.**

### Homework Schedule for the Term

<b>Week</b>	<b>Subject and section</b>	<b>Revision technique</b>
<b>2 (B)</b>	English, Maths and Science: Topic 1	Create a mind map for the information in Topic 1
<b>3 (A)</b>	Options: Topic 1	Create a mind map for the information in Topic 1
<b>4 (B)</b>	English, Maths and Science: Topic 2	Create a poster using the information in Topic 2
<b>5 (A)</b>	Options: Topic 2	Create a poster using the information in Topic 2
<b>6 (B)</b>	English, Maths and Science: Topic 3	Create a mind map for the information in Topic 3
<b>7 (A)</b>	Options: Topic 3	Create a mind map for the information in Topic 3

### Optional Extra Tasks

If you would like to spend more time working independently to develop excellence in your subjects. Here is a suggested timetable for you to follow. If you have forgotten your usernames and passwords for these apps, speak to your form tutor and they will be able to support you.

<b>Monday</b>	Spend 30mins on Pixl Lit completing a revision Quiz on Macbeth/AIC/Frankenstein
<b>Tuesday</b>	Spend 30 minutes on Pixl Maths completing a revision quiz on a topic you are finding challenging.
<b>Wednesday</b>	Spend 30 minutes on GCSE Pod revising one of your option subjects e.g. History/Geography
<b>Thursday</b>	Spend 30 minutes on Tassomai
<b>Friday</b>	Create a glossary of 10 new terms that you need to know from your Knowledge Organiser.





Business and Enterprise

Entrepreneurship

### Topic: The Marketing Mix

The Marketing Mix

The Marketing Mix refers to the “4 Ps”: product, price, place, and promotion. When launching a new service or a new product, the 4 Ps should be considered to provide a detailed evaluation of the viability of a product or service.

Product - What is the product? What are its use and purpose? What packaging and features are involved? Are there any customisable options?

Price - What costs are involved in making the product or providing the service? What are packaging and shipping costs? Are any discounts or offers applicable?

Place - Where will the product or service be sold? Will the product or service be sold in store, online, or over the phone?

Promotion - How can you promote the product or service? Consider the target market and the most appropriate method to promote to that target market. What message would you communicate during your promotion to entice and encourage the customer to purchase your product or service?



## Topic: Factors of production

There are four factors of production: land, labour, capital, and enterprise.

Land - It refers to anything that comes from the land, as well as the land itself. This includes natural gas, water, and lumber that are found on the land.

Labour - It is the physical and mental human effort, for example, the work done by the employees in return for wages.

Capital - It refers to the assets used to produce the goods, for example, the machinery, tools, computers, and buildings.

Enterprise - It refers to the ideas and enterprise of the entrepreneur. An entrepreneur uses land, labour, and capital as well as their new ideas and innovative methods to produce goods or services. Remember from lesson one that an entrepreneur is an individual who set up their own business, aiming to achieve a profit and accepting the risks involved.

Tomasz is an entrepreneur who wants to open a pizza restaurant that offers eat-in meals as well as takeaways.

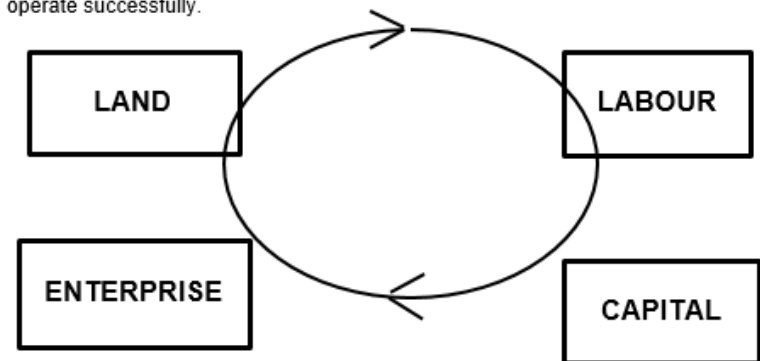
What factors of production are relevant to Tomasz?

Think about all the resources that he will need to open and run his business, organising the resources into land, labour, capital, and enterprise categories.

### Tip



Try to remember the following diagram when revising "factors of production." It shows you how a business needs all four factors of production so that they can operate successfully.



## **Topic: Motivators of entrepreneurs**

### **Problem-solving**

Some entrepreneurs are also inventors who have seen a problem or a gap in a product or a service and who have then created a way to address that problem. Perhaps an entrepreneur has spotted a way to create a sustainable and environmentally friendly solution?

### **Creativity**

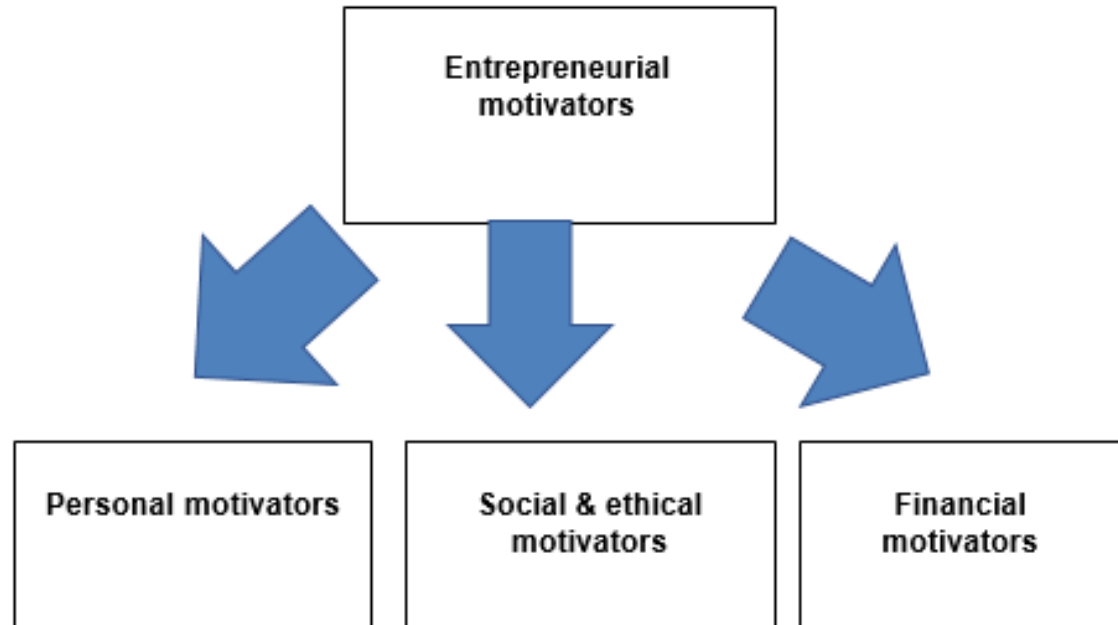
Some entrepreneurs can take an existing product or service and add their creativity to create something new and improved, for example a unique curry recipe.

### **Job satisfaction**

Starting a business requires that the entrepreneur enjoys what they do and that they have a passion for the product or the service that they are offering to customers. If an entrepreneur enjoys what they do, they will put more time and more energy into the business and increase its chance of success.

### **Financial independence**

A strong motivator, and measure of success, is to make money from a business. A business that does not make money usually looks as though it is failing. Financial independence may motivate the entrepreneur.



## **Topic: Skills of an entrepreneur**

### Communication Skills

- communicate effectively with a wide range of people.

### Financial Skills

- money management skills
- Records of all money flowing into and out of the business must be maintained for accounting purposes.
- Purchases should be sought that offer the business value for money.

### Sales Skills

- entrepreneurs must promote why their product or service is special and why a customer should purchase it.
- initially the entrepreneur may have to sell the product or service themselves.

### Management Skills

- skills include being able to manage, plan, and control their business and every aspect of being an entrepreneur.
- being able to lead and manage employees successfully.

### IT Skills

- includes maintaining records through spreadsheets or through a dedicated platform
- communicating effectively through email or virtual meetings.

### Timekeeping Skills

- Maintaining deadlines and being dependable.

## **SMART Objectives**

**S – Specific**

**M – Measurable**

**A – Agreed**

**R – Realistic**

**T – Time-bound**

Vocabulary	Wider Research	Apply
Sustainable products Social enterprise Entrepreneur Entrepreneurship Target market Gap in the market Business opportunity Marketing mix Product Price Place Promotion Factors of production Land Labour Capital Enterprise Finance Aims Objectives Business structure Sole trader Partnership Public company Private company Cooperative Franchise	The Marketing Mix <a href="https://www.youtube.com/watch?v=Mco8vBAwOmA">https://www.youtube.com/watch?v=Mco8vBAwOmA</a>  Characteristics of entrepreneurs <a href="https://www.youtube.com/watch?v=tcSAK648NWI">https://www.youtube.com/watch?v=tcSAK648NWI</a>  Factors of production <a href="https://www.youtube.com/watch?v=BBDIgl0agiE">https://www.youtube.com/watch?v=BBDIgl0agiE</a>  Sole traders <a href="https://www.youtube.com/watch?v=kc-W2LWib_0">https://www.youtube.com/watch?v=kc-W2LWib_0</a>  Partnerships <a href="https://www.youtube.com/watch?v=u4K-TGnvamg">https://www.youtube.com/watch?v=u4K-TGnvamg</a>  Private limited companies <a href="https://www.youtube.com/watch?v=UPgqMR28YLc">https://www.youtube.com/watch?v=UPgqMR28YLc</a>  Public limited companies <a href="https://www.youtube.com/watch?v=P_INDmtkJPg">https://www.youtube.com/watch?v=P_INDmtkJPg</a>	Create a key word glossary  Choose 1 product and create the 4Ps of the marketing mix for it.  Choose a product/service and write the factors of production for it.  Design the packaging for a new environmentally friendly drink bottle.  Watch an episode of 'The Apprentice'  Create a poster that helps to explain the process of using SMART when creating goals/objectives.





# KS4 Knowledge Organiser

## Subject: Year 10 CBE & DBE

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Also, please remember, you should spend 20 minutes on the following apps and websites:

- GCSE Pod
- PIXL Lit
- PIXL Maths App
- Tassomai
- BBC Bitesize
- Onmaths
- Corbett Maths
- English Instagram @greenacreenglish
- Quizlit

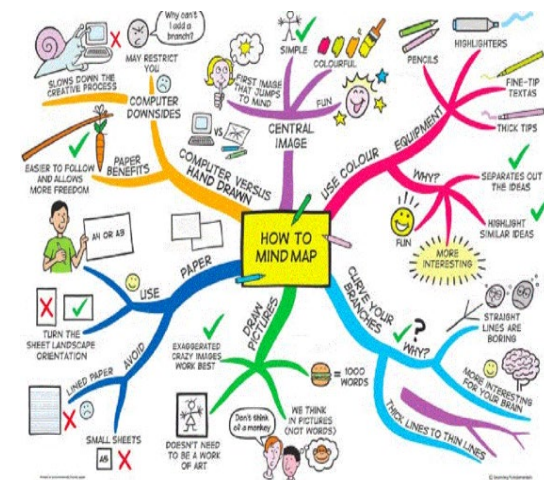
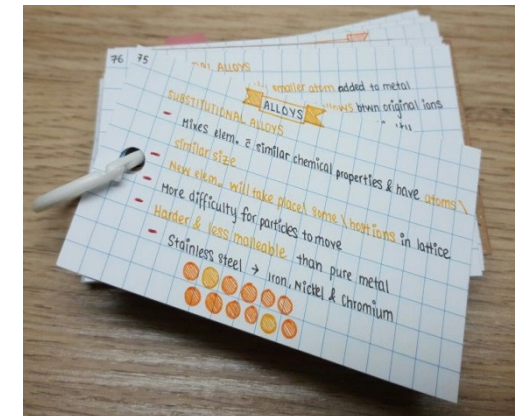
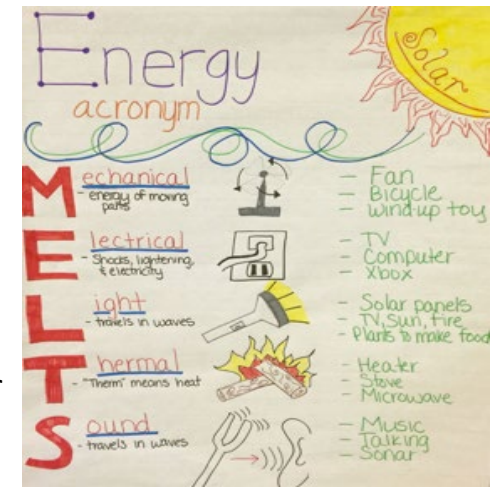
If you would like support with any of the apps, please email ....

## How to use the Knowledge Organiser:

- Your teacher will direct you to what topics to revise for each week
- You will be expected to revise for at least 30 minutes each evening
- Ask someone to quiz you on the key information
- Remember to APPLY the information using the tasks included in each Knowledge Organiser

## Revision techniques and strategies

1. Turn your huge amount of revision notes into small and easy to handle
2. Put a question on the front of your flash cards and write the answer on the reverse – then ask someone to quiz you
3. Mind map – what is the topic and what are the key points you need to remember? You could use different colours for different ideas/characters
4. A question a day – complete an exam question, under timed conditions, each day
5. Record yourself reading your notes and listen back to yourself
6. BUG the question – write out exam questions, examine the key words and plan an answer
7. Use of post-it notes – place post-it notes in key places so you are constantly reading key information
8. Make lists of important facts and figures
9. Draw diagrams to help you visually remember your notes
10. 'Look, cover, say, write, check' – use this method to make sure that you are remembering key information



## Revision tips

- Make sure you get some sleep – cognition (acquiring and understanding information) and ability to recall learned facts is limited when you are sleep deprived.
- Eat a healthy, balanced diet - lots of fruit and veg, meats for protein, limit sugary fatty foods.
- Switch off social media/distractions - ignore your phone for a few hours! It will help you keep focused. Social networking, while it's fun, is a big distraction from your revision.
- Give yourself a nice space to work in - have a nice, organised study space with lots of stationary to help you make quality notes/highlight.
- Make a plan - schedule dedicated study time into your daily schedule. Be organised with your time. Stick to your plan. Sacrifice some of your social time for study time. No pain, no gain!
- Start your revision early - start now, if you have not already done so, not days before your exam.
- Do small chunks of revision. Your brain is not capable of mass storing information in a short space of time. Digesting small chunks of information, over a longer period of time, means you are more likely to remember it

Click on the QR code below which will take you to the revision support page on our website:





## Constructing the Built Environment

### Unit 3 revision

#### Job roles in construction

**What are the responsibilities in each of these job roles?**

# Qualified Professions



There are several job professions that are linked to the design and construction of a project, they are:

- Designer/Architect
- Civil/Structural Engineer
- Contracts manager
- Site manager
- Surveyor
- Quantity Surveyor

**Flash Card Example**

## Carpenter

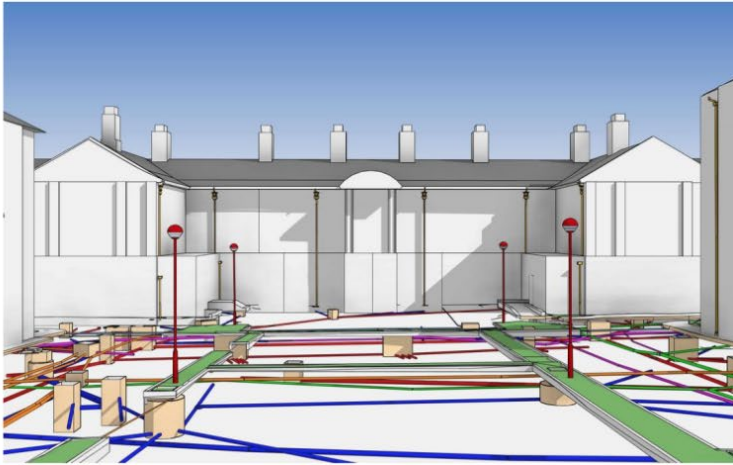
**What they do:** Carry out all first and second fix carpentry work using timber.

**What they produce:** Install and build with timber – which includes doors, skirting boards, architrave, windows, roof structures door ironmongery and kitchens

**Responsibilities:** To follow instructions as directed by senior staff responsible for all Carpentry work, to work to drawings and specifications, to work safely as part of a team they must wear appropriate PPE including safety footwear, safety helmet and hi vis vest at all times, they will take appropriate precautions when using power tools including checking equipment for faults



## Facilities and Systems









Utility systems are buried underground due to the nature of their function, as well as convenience and aesthetics. Excavators are required to check and locate these lines before any digging takes place. Before any excavation work can begin, they are liable to contact the concerned companies and organisations to notify them about the proposed excavation activity so that the existing underground utilities can be determined and marked.

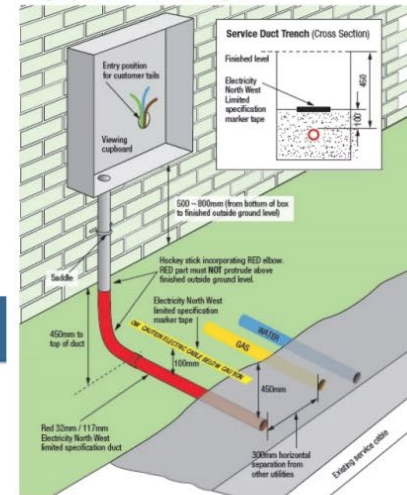
Underground utility colour codes are used to differentiate and identify underground utilities to protect it from potential damage during excavation.

There are different types of utilities and in order to tell them apart, either coloured lines or flags, or sometimes both are used. These lines/flags help mark the location and indicate the type of utility that is buried underground.

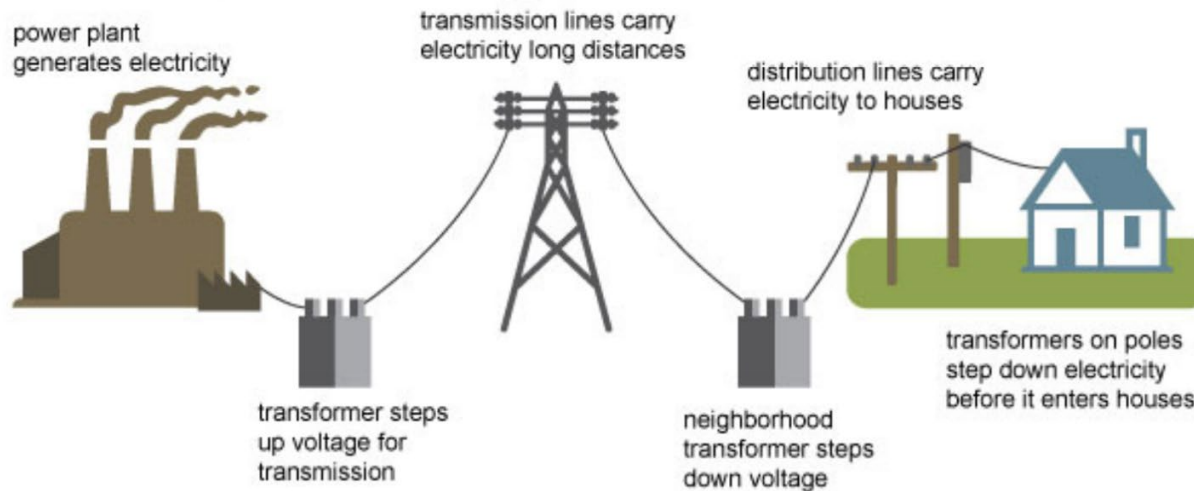
### Underground Utility Colour Codes

	Electric Power Lines, Conduit and cables.		Sewage and Drain Lines.
	Telecommunication, alarm or signal lines.		Drinking Water.
	Gas, Oil, Steam, Petroleum, or other flammable material.		Reclaimed Water, Irrigation, and slurry lines.

### Single phase service arrangement



## Electricity generation, transmission, and distribution



### The National Grid

Electricity is generated in power stations and transported across the UK via the **National Grid**. To move power around the National Grid:

- before electrical power leaves a power station – it is transferred at high voltages by using 'step-up' transformers to increase the voltage to around 275,000 V

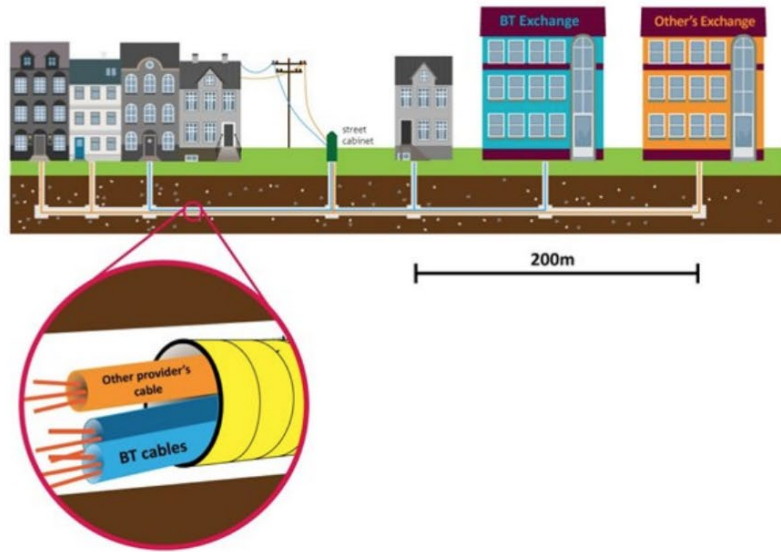
- before electrical power enters homes and factories – the voltages are decreased by 'step-down' transformers to 230 V

The transfer of electrical energy via the grid is very efficient. When currents in a cable are higher, more energy is **dissipated** to the surroundings through heating. As high currents waste more energy than low currents, electrical power is transported around the grid at a high voltage and a low current.

## Telecommunications and distribution



Telecommunications are data and phone lines. Some of these may be on overhead telegraph poles with a link to each property. The modern installation uses a cable duct from a relay unit. The duct is normally coloured green and set at a depth of 450 mm below the pavement level.



Telegraph Poles



### **Ducts**

Underground cables are usually run through ducts – pipes typically varying between 2.5 and 9 centimetres in diameter.<sup>2</sup> Today, ducts are generally made of plastic, but older ducts made of clay or other materials are still in use. The presence of ducts can make it easier and cheaper to replace damaged cables or to lay new ones, without needing to excavate a channel. A manhole cover can be lifted up to provide access to a duct and a new cable can be laid by pulling it through the duct, or (in the case of lightweight fibre optic cables) using an air stream to push the cable through.

Not every cable on the network has been laid in a duct. Sometimes cables have been buried directly in the ground. This is particularly the case where cables run from the road into premises.



### **Poles**

It is usually cheaper and quicker to install new cables by running them above the ground (supported on telephone poles), compared to running them underground. However, cables held on poles are more likely to be damaged and may be considered unattractive by some residents.

**Vocabulary**

**Wider Research**

**Apply**

Architect  
Civil Engineer  
Quantity surveyor  
Site manager  
Designer  
Structural Engineer  
Contracts Manager  
Surveyor  
Transformer  
Utilities  
Telecommunications  
Ducts  
Telegraph Poles  
Excavation  
Infrastructure

Roles and responsibilities in construction

<https://cadvantage-knowledge.co.uk/product/news-articles/articles/construction-project-team-roles-and-responsibilities/>

Use the following gov website to help you as well:

<https://findajob.dwp.gov.uk/>

1. Look up the job roles in the Qualified Professions in topic 1 and create a flash card of each job explaining their responsibilities. Use the example provided as a guide. These should be detailed.
2. Create a word bank and describe in your own words what the vocabulary words mean.
3. Without looking – write the six steps on how electricity is generated, transmitted, and distributed to people’s homes.
4. Telecommunications and electrical grids are part of the nation's infrastructure. Create a colourful mind map with the main topic being ‘Infrastructure’ and research other facilities or systems that are also a part of this.
5. Use the links on the left to find out more job professions that are part of construction, research information and watch videos, and make notes on any that interest you.
6. Copy the image provided for telecommunications and draw your own version (including key terminology) to assist you for revision purposes.



# KS4 Knowledge Organiser

## Computer Science

Mrs Bennett

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**For further support, follow this link to the school website.**

## IDLE Editor has some **useful tools**

The Editor window within IDLE contains the following features:

- Auto-indentation — lines that end in a colon require the next line to be indented. The Editor will do this for you.
- Code completion tips — whilst typing, options for completing recognisable functions will appear as guidance.
- Visual customisation — you can change the way the Editor looks, including text and background colours and whether line numbers are included.
- Adding extensions — these allow extra functionality to be added to IDLE, from new visual options to line-by-line testing.
- Check Module — this automatically checks your code for syntax errors (see next page) when you press 'Run Module' and will also prompt you to save the file if it hasn't been saved.

Many new programmers type lines of code and try to save their work, only to find they have typed it all into the Shell window. Sigh. Don't forget to double check which window you're typing into — if you see >>> you're in the Shell window.



# Computer Science

## Programming – Syntax Errors

### Syntax errors happen when you break the rules

- 1) The syntax of every programming language is a set of rules.
- 2) Syntax errors break these rules and so cannot be understood by the computer.



The most common syntax errors are spelling mistakes and incorrectly formatted code. Here are some examples of syntax errors to look out for:

Remember, the \* is used to show multiplication.

Functions are case-sensitive — e.g. the print function won't work if written in capitals.

```
PRINT("Error-free coding")
```

```
NameError: name 'PRINT'  
is not defined
```

Using incorrect characters will cause an error — e.g. mixing bracket types.

```
print("Python can do lots more  
than display messages"]
```

```
SyntaxError: closing  
parenthesis ']' does not match  
opening parenthesis '('
```

Simple mistakes such as using an x instead of an \* in a calculation.

```
minutesHour = 60  
hoursDay = 24  
print("The number of  
minutes in one day is",  
minutesHour x hoursDay)
```

```
Syntax Error: invalid syntax
```

### Errors can stop your program

- 1) A computer program will stop for two reasons, it's either been programmed to stop, or there's an error that causes it to stop.
- 2) Until you run it, IDLE has no idea if the code you've written is perfect or full of mistakes, it will simply follow the instructions given.
- 3) There are two types of program error you need to be aware of — syntax errors and logic errors.



# Computer Science

## Programming – Print Function

### print() is used to **output** information on the user's **screen**

- 1) As you might have noticed from examples in Section One, print() is used to [instruct](#) the computer to [output](#) a message onto the [screen](#). Here's [how](#) to use it:

- In the [Shell](#) or [Editor](#), write the word print and follow it with an [opening bracket](#).
- Next, write a message to be [outputted](#) within quote marks — one " at the start of the message, one " at the end.
- Finish the line of code with a [closing bracket](#).

```
print("Hello World!")
```

```
Hello World!
```

- 2) The line of code won't do anything until you [execute](#) it. In programming, [execute](#) means to carry out the given instruction. Executing code is also called [running](#) code.
- 3) To execute the line, press the [Return key](#) (↵) if you are in the Shell, or save it and '[Run Module](#)' if you are in the Editor (see pg.5 for a [step-by-step guide](#) on this).

In this example, Hello World! is being output to the user. As you're testing your own code, you're the user (for now).

All the text you see on a computer screen originated from a humble command like print().



### The **colours** act as a **guide**

- 1) In the example above, print is in [purple](#) and Hello World! is in [green](#).
- 2) These colours [aren't a part of Python](#) itself — it's just the way the [IDE displays them](#). There's [no need to learn](#) these colours or worry if you're seeing different ones.
- 3) A [benefit](#) of this colouring system — called [syntax highlighting](#) — is that [syntax errors](#) become easier to spot as the [colours are a bit off](#).

In this book, you'll see the default colouring from IDLE.

```
Print("Hello World!")  
print(Hello World!)  
print"(Hello World!)"
```

# Computer Science

## Programming - Selection

### Selection

**Basic selection statement:** This has a single **condition** and a single possible output, depending if that condition has been met. If the condition has not been met there is no output and the program will continue to the next event.

In a selection structure, a question is asked and depending on the answer the program takes one of two courses of action, after which the program moves on to the next event. These are commonly known as **if statements**.

**Nested selection:** If statements can also be nested together and there are several variations of selection structures in place to allow this to happen.

```
1 num=int(input("Enter a number"))
2 if num > 100:
3     print("This is too high")
```

**Task** Write a program which will ask the user to enter a number. If that number is equal to 7 display the message "Thank you"

```
1 num=int(input("Enter a number"))
2 if num > 100:
3     print("This is too high")
4 else:
5     print("This is too low")
```

**Task:** Write Python code

- ask the user to enter two numbers.
- If the first number is larger than the second number display the first number, otherwise display the second number

```
1 num=int(input("Enter a number"))
2 if num > 100:
3     print("This is too high")
4 elif num > 5:
5     print("This is too low")
6 else:
7     print("Thank You")
```

**Task:** Use the space below to write a program which will ask the user to enter a colour. If they enter "red" display the message "Thank you", if they enter "blue" display "Well done" for anything else display "Incorrect"



# Computer Science

## Programming techniques: Nested Ifs

Nested selection: If statements can also be nested together and there are several variations of selection structures in place to allow this to happen.

```
1 num=int(input("Enter a number"))
2 if num > 100:
3     print("This is too high")
4 elif num > 5:
5     print("This is too low")
6 else:
7     print("Thank You")
```

**Task:** Use the space below to write a program which will ask the user to enter a colour. If they enter "red" display the message "Thank you", if they enter "blue" display "Well done" for anything else display "Incorrect"

# Computer Science

## Input and Data Types

# Data types

Data types refers to the forms in which data can be stored.

### The most common forms include:

- Integer: Used for whole numbers.
- Real: Stores numbers that contain decimal places.
- String: Usually written as a sequence of characters enclosed in single or double quotation marks, i.e. 'hello' or "hello".

Addition	+	<code>print(2 + 2)</code>
Subtraction	-	<code>print(45 - 10)</code>
Division	/	<code>print(123 / 3)</code>
Multiplication	*	<code>print(11 * 12)</code>

Definitions	
Concatenation	The joining of two or more strings.
<code>input()</code>	Allows the user to enter data in response to a question.

```
1 name = input("What is your name?")
2 age = input("How old are you?")
3 print(name)
4 print(age)
```

```
1 name = input("What is your name?")
2 age = int(input("How old are you?"))
3 print("Hello", name)
4 print("Your will be", age+20, "in 20 years time")
```

## Vocabulary

- Print
- Assignment
- Variables
- Comments
- Declare
- String
- Integer
- Algorithm
- Program
- Compiler
- Interpreter
- Console/Shell
- Script mode
- Interactive mode
- Constant
- Sequence
- Arithmetic Operator
- Output
- Input
- Syntax
- Concatenation

## Apply

Title: Basic Python Skills

- **General Knowledge**
- In Python, comments begin with ?
- To display a command, what function is used?
- What is an interpreter?
- What is a compiler?
- What symbol is used to assign a value to a variable
- What is a variable used for?
- What is the process of initialisation?
- Name 1 rule of thumb when naming a variable?
- What symbols are used to determine a string?
  
- What does the **input()** function do?
- What is a string?
- What is an integer?

## Wider research



Csnewbs - <https://www.csnewbs.com/python-1a-printing>

<https://www.csnewbs.com/python-2a-inputting-strings>

Seneca - <https://senecalearning.com/en-GB/blog/gcse-computer-science-revision/>

Craig n Dave - Youtube





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- PIXL Maths App
- Tassomai
- BBC Bitesize
- Onmaths
- Corbett Maths
- English Instagram @greenacreenglish
- Quizlit

If you would like support with any of the apps, please email ....

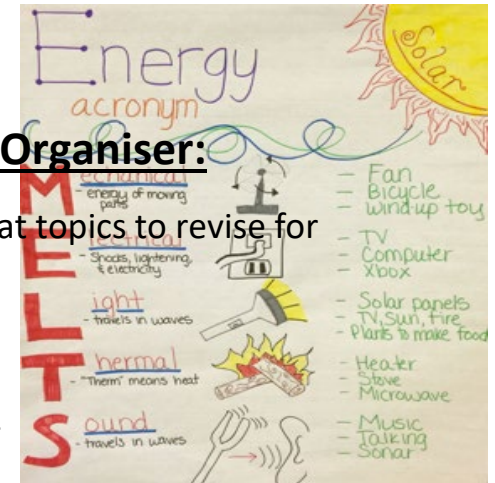
each week

- You will be expected to revise for at least 30 minutes each evening
- Ask someone to quiz you on the key information
- Remember to APPLY the information using the tasks included in each Knowledge Organiser

## Revision techniques and strategies

### How to use the Knowledge Organiser:

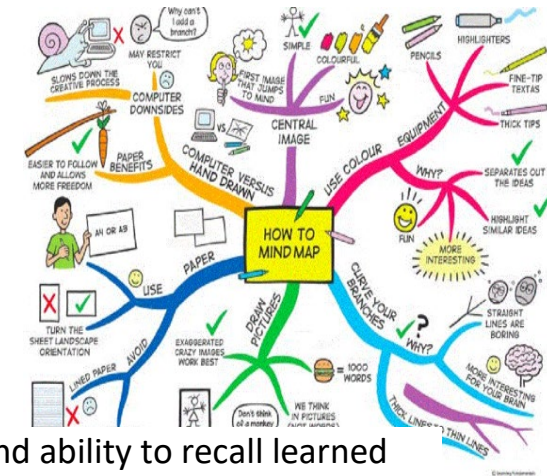
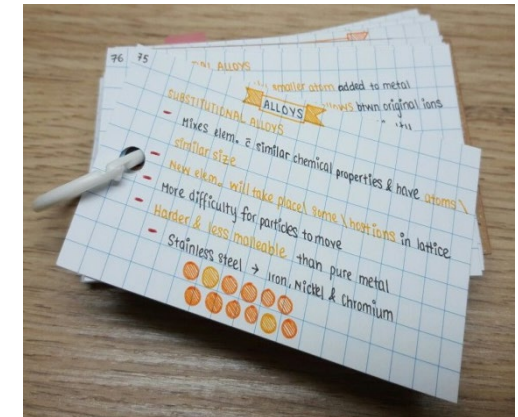
- Your teacher will direct you to what topics to revise for



1. Turn your huge amount of revision notes into small and easy to handle
2. Put a question on the front of your flash cards and write the answer on the reverse – then ask someone to quiz you
3. Mind map – what is the topic and what are the key points you need to remember? You could use different colours for different ideas/characters
4. A question a day – complete an exam question, under timed conditions, each day
5. Record yourself reading your notes and listen back to yourself
6. BUG the question – write out exam questions, examine the key words and plan an answer
7. Use of post-it notes – place post-it notes in key places so you are constantly reading key information
8. Make lists of important facts and figures
9. Draw diagrams to help you visually remember your notes
10. 'Look, cover, say, write, check' – use this method to make sure that you are remembering key information

## **Revision tips**

- Make sure you get some sleep – cognition (acquiring and understanding information) and ability to recall learned facts is limited when you are sleep deprived.
- Eat a healthy, balanced diet - lots of fruit and veg, meats for protein, limit sugary fatty foods.
- Switch off social media/distractions - ignore your phone for a few hours! It will help you keep focused. Social networking, while it's fun, is a big distraction from your revision.
- Give yourself a nice space to work in - have a nice, organised study space with lots of stationary to help you make quality notes/highlight.



- Make a plan - schedule dedicated study time into your daily schedule. Be organised with your time. Stick to your plan. Sacrifice some of your social time for study time. No pain, no gain!
- Start your revision early - start now, if you have not already done so, not days before your exam.
- Do small chunks of revision. Your brain is not capable of mass storing information in a short space of time. Digesting small chunks of information, over a longer period of time, means you are more likely to remember it

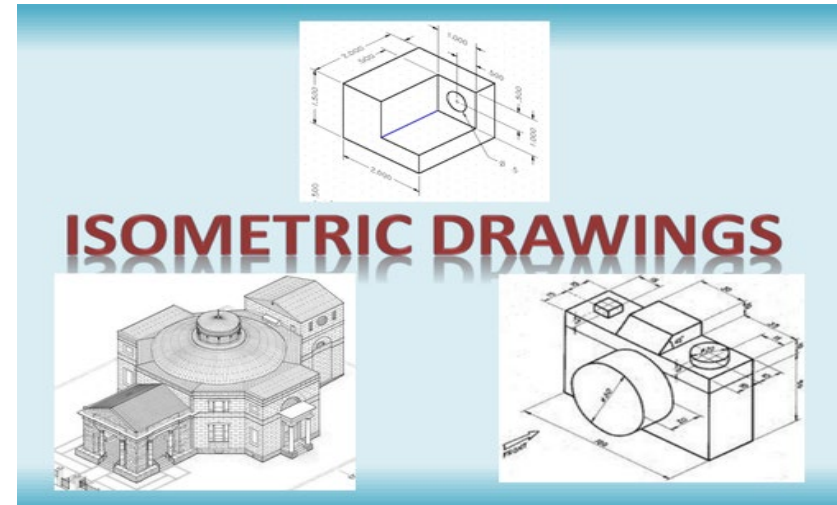
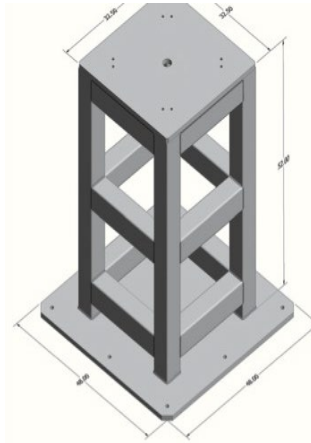
Click on the QR code below which will take you to the revision support page on our website:



## Topic 1: Isometric Drawing

### Isometric drawing

Isometric drawing is a British Standard method of drawing; it is recognised in many different places of work. For example, Engineers who make products will need to look at Isometric drawings produced by the designer so that they are able to make the product.



Isometric drawings are a good method of presenting your design ideas in 3D. In Engineering, you will need to show ideas for your assignments and in your exam. You have been drawing 3D design ideas for your speaker box.

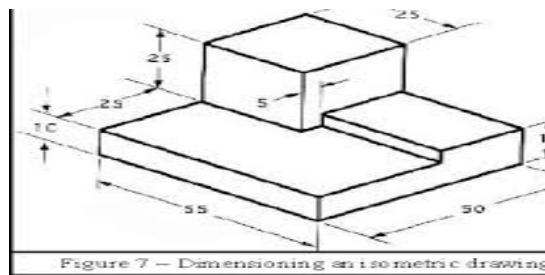


Figure 7 – Dimensioning an isometric drawing

Isometric drawings allow people at work such as Engineers, Kitchen fitters, Builders, Interior designs, Carpenters and many other professions to see what the finished product / project will look like.

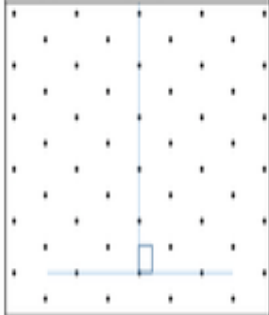


Isometric drawings keep all vertical lines at 90 degrees. Horizontal lines are drawn at 30 degrees to the vertical line.

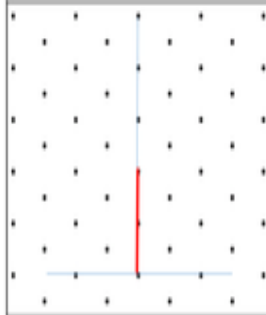
### Isometric Projection

Key words: parallel right angle vertical horizontal diagonal equal isometric edge

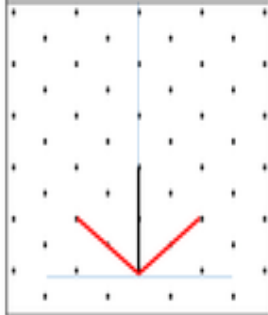
1. Draw a guide line vertical down the page centre of the page and horizontal across the page to form a right angle.



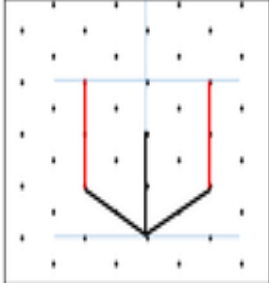
2. Draw the first vertical line of the cube on the centre guide to the length required.



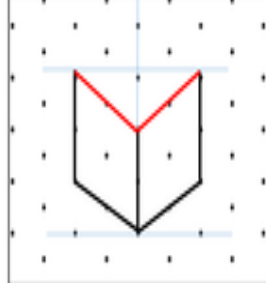
3. Add in the base lines of the cube at 30° angles to the horizontal guide line.



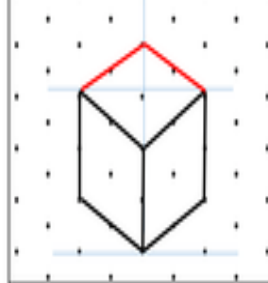
4. Create the side of the cube by drawing two vertical lines the same length as your centre line and parallel to the centre guide line.  
5. Add in a new guide line across the top of the two new lines



6. To make the top front of the cube, draw two lines parallel to the two base line at 30° by connecting the centre line to the two sides.



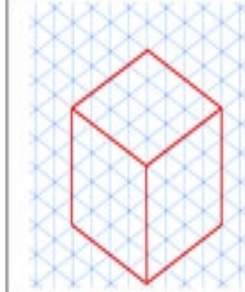
7. Add in the top back edges of the cube at 30° angles to the horizontal guide line.



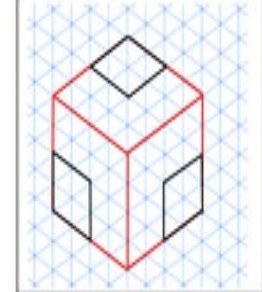
### Isometric crofting

Key words: depth height width vertical horizontal diagonal equal isometric

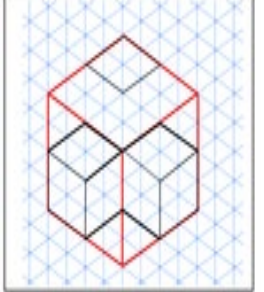
1. Draw a crate to fit the width, depth and height of the object you want to draw.



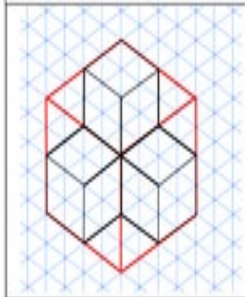
2. Draw the ends of your shape, using the grid as a guide.



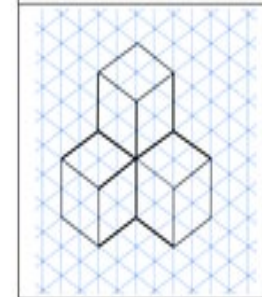
3. Add in the base lines of the cube at 30° angles.



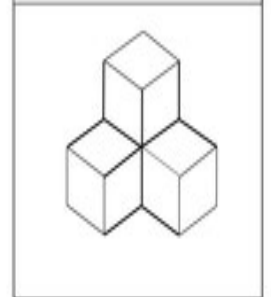
4. Create the sides of the cube by drawing the vertical lines.



5. The crate can be removed to leave the final shape.



6. Show form by rendering the shape.



## **Topic 2: Third Angle Orthographic Projection**

Orthographic drawings are British Standard drawings (ISO, BSI) that contain all the relevant details and information needed for a part / product to be made by a third party. For example a designer will design a car engine and produce Orthographic drawings of the different parts for the Engineers in the factory to use to make the parts to the correct sizes, from the correct materials etc.

Many products are designed by Designers and Engineers in the UK. The drawings can then be sent to manufacturing companies in countries such as China who have the factories and equipment to manufacture the product.

These drawings therefore need to be very accurate with all the necessary details communicated clearly and effectively. Any errors in the drawing would lead to a product that would be faulty.

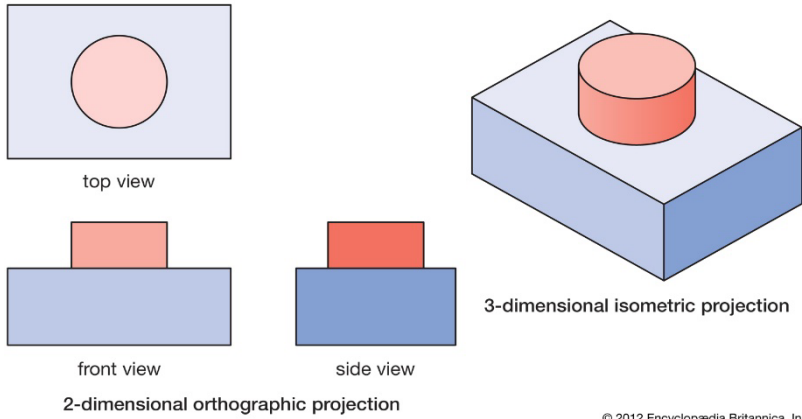
This is why orthographic drawings are standardised using the same format and symbols. Anyone should be able to read and understand the drawing as they must conform to **ISO and BSI**.

Orthographic drawings can be referred to as Technical Drawings, Working Drawings or Engineering Drawings.

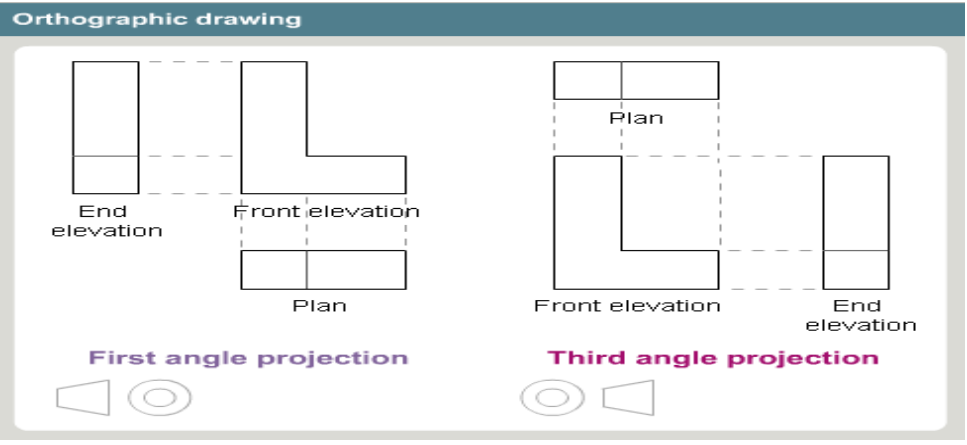
The following conventions must be shown on the drawing so that the person making the product knows what they are doing when making it. For example, all sizes and dimensions would be shown as would the material to be used.

- **Different views**
- **Dimensions**
- **Scale**
- **Materials**
- **Hidden detail**
- **Centre lines**
- **Finishes**
- **Section views**
- **Date the drawing was produced**
- **Engineers/Designers name**
- **Angle Symbol**
- **Title**
- **Parts List**
- **Manufacturing processes**

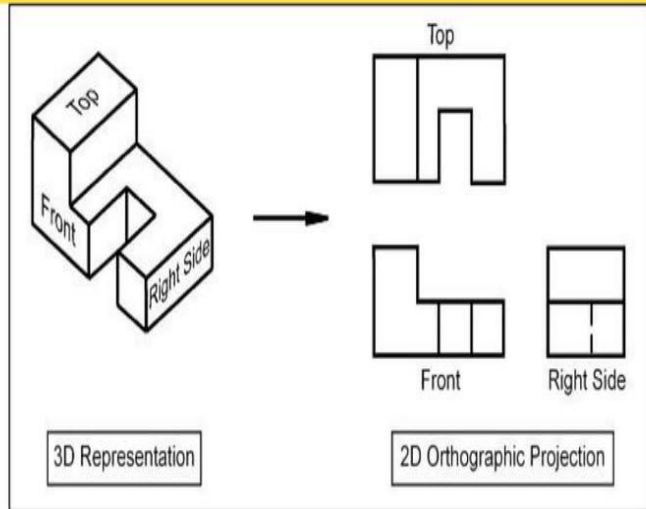
**Orthographic and isometric projections of an object**



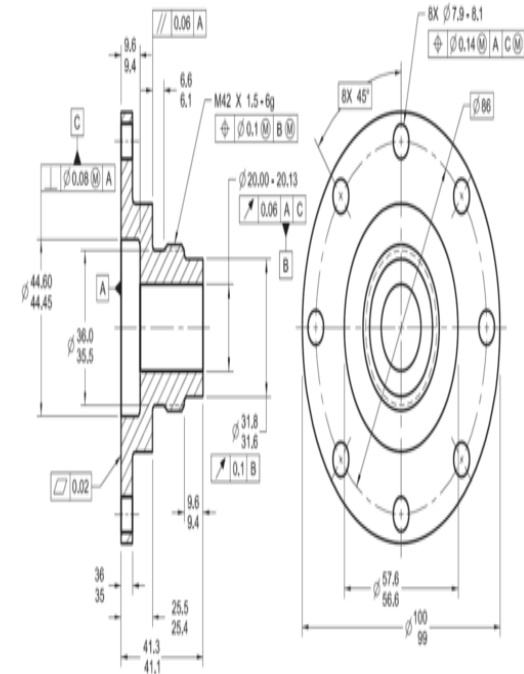
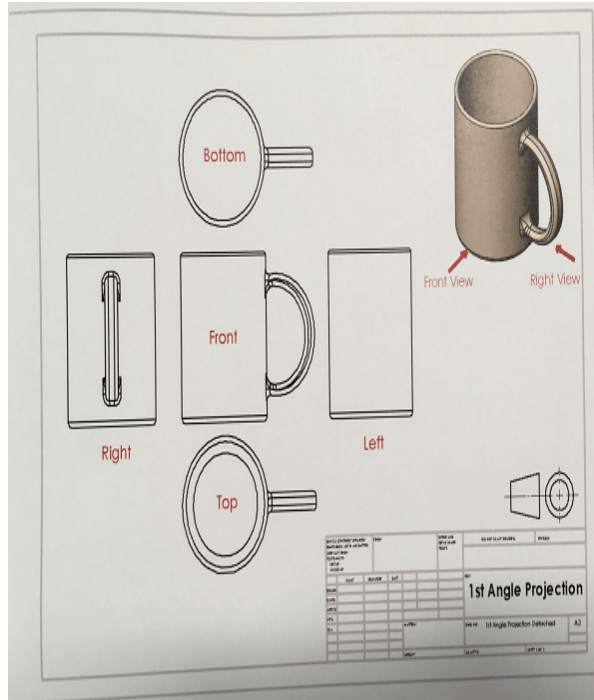
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# ORTHOGRAPHIC PROJECTION.





x



### Topic 3: Engineering Drawing Dimensions / Line type

Engineering drawings have certain standard conventions, so that any worker that is using the drawing to make something can read it.

First angle and Third angle drawing should have a symbol on the drawing to show you which of the two types of Orthographic drawing has been used in the drawing.

Projection	Symbol
First angle	
Third angle	

Dimension lines on an Orthographic drawing are very important as the person making or building the product uses the dimensions when cutting material to size or positioning features on the product they are making.

All dimensions should be kept to a minimum, so that the page is not covered in too many dimensions that will confuse the person reading it

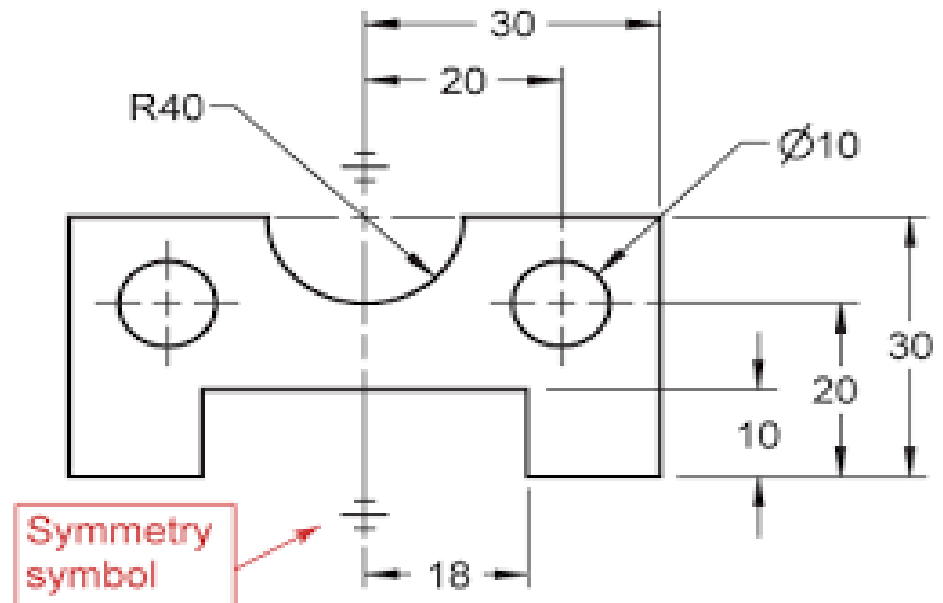
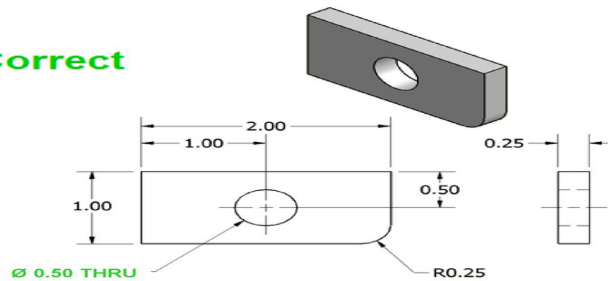
All horizontal dimensions should be show be on the left or right.

Dimension should be above or below the dimension line.

Arrowheads must be a solid block.

11. Avoid crossing dimension or extension lines with leader lines.

Correct



## Different types of line used in Engineering drawings

There are many are many different types of line that are used in Engineering drawings.

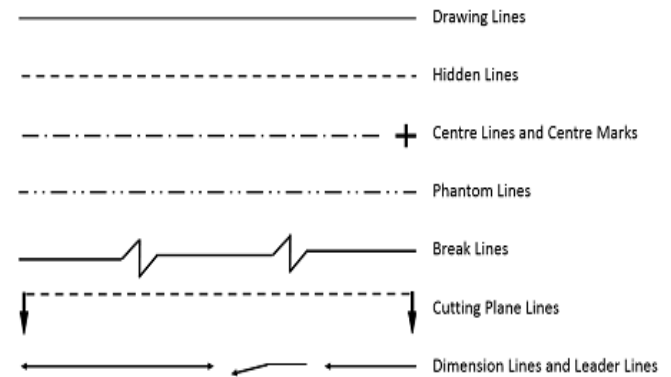
Specific lines are used to show specific things in Engineering drawings.

Due to the sheer amount and variety of lines used.

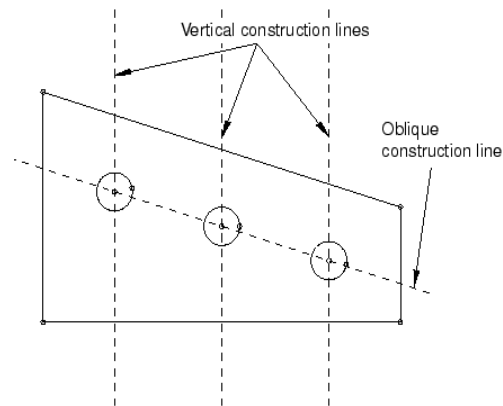
Specific lines have been created to show specific things or have a specific job.

To the right are some lines that conform to BSI 8888:2017

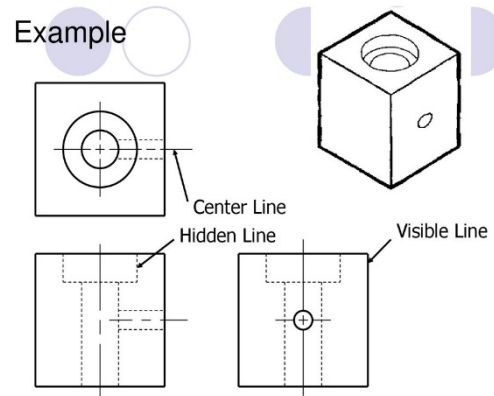
### Types of Line



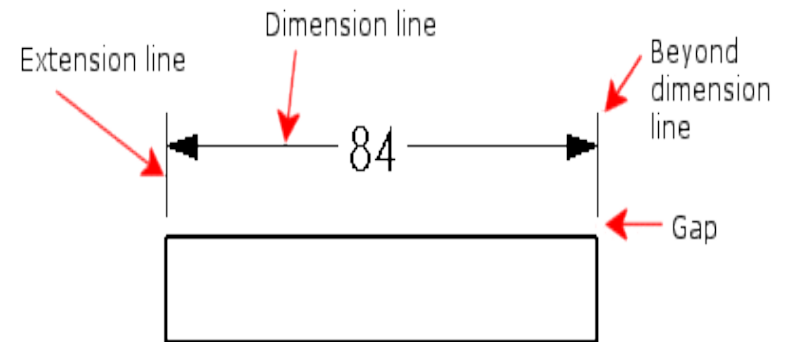
#### Construction Line Example



#### Hidden Detail Line Example



#### Extension Dimension lines



Vocabulary	Wider Research	Apply
<ol style="list-style-type: none"> <li>1. Isometric drawing</li> <li>2. Three dimensional</li> <li>3. British standards</li> <li>4. International standards</li> <li>5. Formal drawing</li> <li>6. 30 degrees</li> <li>7. Horizontal line</li> <li>8. Vertical line</li> <li>9. Isometric grid paper</li> <li>10. Orthographic drawing</li> <li>11. Third angle drawing</li> <li>12. First angle drawing</li> <li>13. Front view</li> <li>14. Plan view</li> <li>15. Side view</li> <li>16. End view</li> <li>17. 3<sup>rd</sup> angle symbol</li> <li>18. 1<sup>st</sup> angle symbol</li> <li>19. Dimension</li> <li>20. Dimension line</li> <li>21. Radius</li> <li>22. Diameter</li> <li>23. Engineering drawing</li> <li>24. Construction line</li> <li>25. Weighted line</li> <li>26. Centre line</li> <li>27. Hidden detail line</li> <li>28. Section line</li> <li>29. Extension line</li> </ol>	<p data-bbox="566 276 1171 339"><a href="https://www.technologystudent.com/despro_fish/graphics_iso1.html">https://www.technologystudent.com/despro_fish/graphics_iso1.html</a></p> <p data-bbox="566 387 1171 451"><a href="https://www.technologystudent.com/despro_fish/graphics_ortho1.html">https://www.technologystudent.com/despro_fish/graphics_ortho1.html</a></p> <p data-bbox="566 499 1171 563"><a href="https://www.technologystudent.com/despro_fish/graphics_main2.html">https://www.technologystudent.com/despro_fish/graphics_main2.html</a></p> <p data-bbox="566 611 1171 675"><a href="http://www.design-technology.info/IndProd/drawings/">http://www.design-technology.info/IndProd/drawings/</a></p> <p data-bbox="566 722 1171 786"><a href="http://hop.bsigroup.com/products/technical-product-documentation-and-specification-3/standard">hop.bsigroup.com/products/technical-product-documentation-and-specification-3/standard</a></p> <p data-bbox="566 834 1171 898"><a href="https://www.iso.org/ics/01.100.20/x/">https://www.iso.org/ics/01.100.20/x/</a></p>	<ol style="list-style-type: none"> <li>1. Draw a cube using the Isometric drawing method make sure that your horizontal lines are at 30 degrees.</li> <li>2. Draw and every day product such as a television or an item of furniture using the Isometric drawing method.</li> <li>3. Draw your mobile phone in 3<sup>rd</sup> Angle Orthographic Projection.</li> <li>4. Drawing your phone in 1<sup>st</sup> Angle Orthographic Projection.</li> <li>5. Draw the symbol for First angle projection.</li> <li>6. Draw the symbol for Third angle projection.</li> <li>7. Using the ISO standards add dimension lines to the drawing of your phone.</li> <li>8. Draw a Centre line. On your mobile phone drawings.</li> <li>9. Draw an Orthographic front view of your school bag.</li> <li>10. Add hidden detail lines to show what is inside your school bag.</li> </ol>





# KS4 Knowledge Organiser

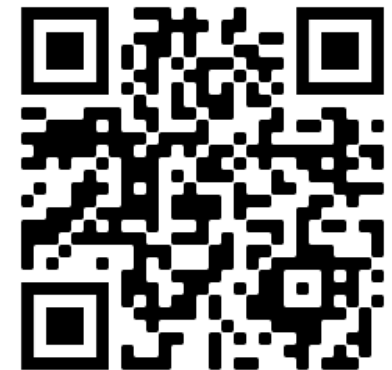
## Subject:

<i>Mrs Bennett Raising Standards Leader for KS4</i>	<i>bailc197@sflt.org.uk</i>
<i>Mrs Adsett Head of Year 10</i>	<i>adsea001@sflt.org.uk</i>
<i>Miss Epsly Head of Department</i>	<i>Epslm001@sflt.org.uk</i>

### **Knowledge Organiser instructions:**

You will be set three pieces of homework per week and you should use the information from each topic to make a poster or a mind map. You will need to bring your work in to school and will be quizzed on each topic in class.

At the back of the knowledge organiser there are some suggested extra tasks that could be completed on top of the homework you will be set.



**For further support,  
follow this link to the  
school website.**



### **Homework Schedule for the Term**

<b>Week</b>	<b>Subject and section</b>	<b>Revision technique</b>
<b>1</b>	English, Maths and Science Topic 1	Create a mind map for the information in Topic 1
<b>2</b>	Options: Topic 1	Create a mind map for the information in Topic 1
<b>3</b>	English, Maths and Science: Topic 2	Create a poster using the information in Topic 2
<b>4</b>	Options Topic 2	Create a poster using the information in Topic 2
<b>5</b>	English, Maths and Science: Topic 3	Create a mind map for the information in Topic 3
<b>6</b>	Options: Topic 3	Create a mind map for the information in Topic 3

### **Optional Extra Tasks**

If you would like to spend more time working independently to develop excellence in your subjects. Here is a suggested timetable for you to follow. If you have forgotten your usernames and passwords for these apps, speak to your form tutor and they will be able to support you.

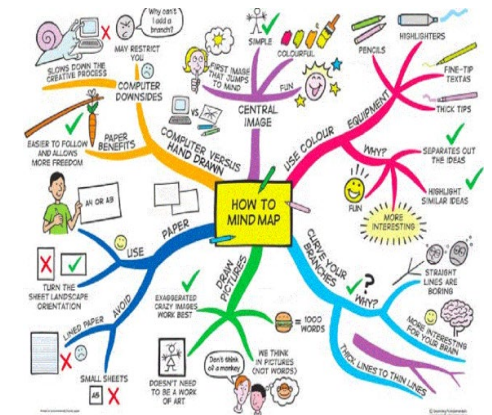
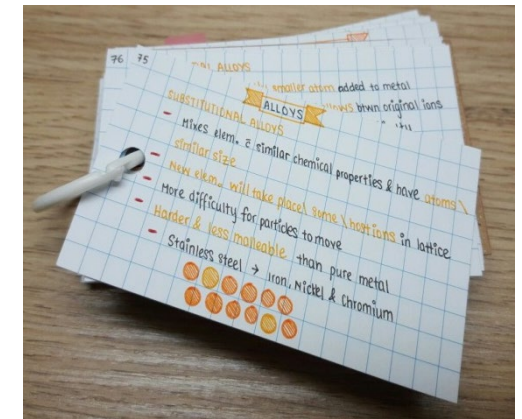
<b>Monday</b>	Spend 30mins on Sparknotes completing a revision Quiz on Macbeth/AIC/Frankenstein
<b>Tuesday</b>	Spend 30 minutes on Sparx completing a revision quiz on a topic you are finding challenging.
<b>Wednesday</b>	Spend 30 minutes on GCSE Pod revising one of your option subjects e.g. History/Geography
<b>Thursday</b>	Spend 30 minutes on Tassomai

Friday

Create a glossary of 10 new terms that you need to know from your Knowledge Organiser.

## Revision techniques and strategies

1. Turn your huge amount of revision notes into small and easy to handle
2. Put a question on the front of your flash cards and write the answer on the reverse – then ask someone to quiz you
3. Mind map – what is the topic and what are the key points you need to remember? You could use different colours for different ideas/characters
4. A question a day – complete an exam question, under timed conditions, each day
5. Record yourself reading your notes and listen back to yourself
6. BUG the question – write out exam questions, examine the key words and plan an answer
7. Use of post-it notes – place post-it notes in key places so you are constantly reading key information
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9. Draw diagrams to help you visually remember your notes
10. 'Look, cover, say, write, check' – use this method to make sure that you are remembering key information





## English: Literature and Language

### Topic: An Inspector Calls – context

1912 (Context of when the play is set)	<ul style="list-style-type: none"><li>• In the early <b>1910s, the gap between rich and poor reached a historic peak</b>. The top 1% of rich individuals owned the majority of Britain's wealth.</li></ul>
	<ul style="list-style-type: none"><li>• Only <b>men over the age of 21 could vote</b>. They also needed to be either a homeowner or rent a property for at least £10 a year.</li></ul>
	<ul style="list-style-type: none"><li>• It was still a very <b>patriarchal society. Women were typically viewed as subservient to men</b>. Working-class women earned less than men and were used as cheap labour. Many single women, in particular, struggled to pay for their own existence. Middle-class women were expected to marry and look after their husband.</li></ul>
	<ul style="list-style-type: none"><li>• Trade unions were gaining power. <b>1910-WWI is sometimes referred to as 'The Great Unrest' because of successive strikes in key industries</b>. In 1912, a national strike of nearly one million miners resulted in the passing of the Coal Mines Minimum Wage Act.</li><li>• <b>The Titanic was a huge passenger-liner that sank on 15th April 1912</b>. Approximately 1500 people died.</li></ul>
1945 (Context while writing and initial audience)	<ul style="list-style-type: none"><li>• <b>The Second World War ended on the 8th May 1945</b>. London was heavily bombed during the Blitz; more than one million houses were destroyed.</li></ul>
	<ul style="list-style-type: none"><li>• <b>The Labour Party won a landslide election victory in 1945</b>. This <b>socialist government</b>, led by Clement Attlee, established the <b>NHS and the welfare state</b>.</li></ul>
Recent Politics (Our context as readers)	<ul style="list-style-type: none"><li>• Theresa May (Conservative PM) argued in a recent speech that 'A free market economy, operating under the right rules and regulations, is the greatest agent of collective human progress ever created.'</li></ul>
	<ul style="list-style-type: none"><li>• There is a <b>clear generational divide in contemporary politics</b>. 27% of 18-24 year olds voted to leave the European Union, compared to 60% of 60+. Young people are also far more likely to support Labour than the Conservatives.</li></ul>
	<ul style="list-style-type: none"><li>• <b>Poverty is still a significant issue in Britain</b>. A record 60% of British people in poverty live in a household where someone is in work. Homelessness and the number of people relying on foodbanks is increasing. The Conservative government is also attempting to decrease the Welfare Bill.</li></ul>

### Topic 2: An Inspector Calls Timeline



### Act 1

- April 1912: The **Birlings** are celebrating **Sheila and Gerald's** engagement
- Birling lectures his son and Gerald about life; 'responsibility and all that nonsense', 'all mixed up like bees in a hive'
- **Edna announces the arrival of The Inspector, who graphically describes the death – through suicide – of Eva Smith**
- Birling is shown a photograph of Eva, and initially denies remembering her, but reveals that he sacked her for organising a strike about pay
- Sheila is distraught and recalls having Eva sacked- it's the only time I've ever done anything like that, and I'll never, never do it again to anybody'
- Inspector reveals that Eva changes her name to **Daisy Renton**
- Gerald's reaction gives away that he knew her

### Act 2

- **Gerald explains to the Inspector about his affair**
- **Sheila gives her engagement ring back to Gerald**
- The Inspector asks Mrs Birling about her knowledge of **Eva/Daisy**
- **Mrs Birling – the chair of a charity committee - admits that she turned Eva/Daisy down for money because she had called herself Mrs Birling- 'she was claiming elaborate fine feelings and scruples that were simply absurd in a girl in her position'**
- **The Inspector retorts: 'I think you did something terribly wrong – and that you're going to spend the rest of your life regretting it'**
- Mrs Birling boldly states that the father should be made aware and should accept his responsibility

### Act 3

- **Eric is revealed as the father; he admits to stealing money to provide money for Eva**
- He admits to forcing himself into Eva's lodgings
- **The Inspector delivers his final speech and leaves; 'but each of you helped to kill her. Remember that' ... 'there are millions and millions and millions of Eva Smiths and John Smiths still left with us,**
- **Gerald returns and explains his suspicions about The Inspector- a phone call to the police station confirms that he is correct,**
- Mr and Mrs Birling goad the younger generation (**Eric and Sheila**) and are callous and cruel about the situation, but Sheila and Eric lament that they haven't learned anything
- The phone rings, Birling answers, and reveals that a girl has died on her way to the infirmary, and an inspector is coming to question them

### **Topic 3: Act 1 of An Inspector Calls**

- The Birling family and Gerald Croft are **celebrating Sheila Birling's engagement to Gerald** with an evening meal. **Sheila is extremely excited** about her engagement ring which suggests her materialistic nature. Eric seems a little uneasy.
- **Mr Birling is in a very good mood** about the engagement and the possibility of his upcoming knighthood. He **dominates the conversation and shares his political views**; he appears to be extremely narrow-minded.
- At the end of the meal, Mrs Birling, Sheila and Eric leave the dining room. However, Eric returns soon after complaining that they were talking about women's clothes.
- **Mr Birling lectures his son, Eric Birling and Gerald** about the importance of every man looking out for himself and his family if he wants to get on in life. He dismisses the concept of community as nonsense. During this speech, Mr Birling is interrupted by the sound of the doorbell.
- **Edna (the maid) announces that an inspector has arrived. Inspector Goole says that he is investigating the death of a young woman who committed suicide. She is called Eva Smith.**
- **Mr Birling is shown a photograph** of Eva. After initially denying recognising the woman in the photo, **he remembers firing her in 1910** for organising a strike over workers' pay. She asked for higher wages which Mr Birling thought was completely unreasonable.
- Gerald expresses his agreement with Mr Birling's actions whereas **Eric and Sheila express concern about their father's treatment of Eva.**
- The Inspector then turns his action to Sheila who has returned to the dining room. **The Inspector shows Sheila the photograph of the girl and she rushes out upset.** When Sheila returns, **she confesses to having Eva sacked about her manner when served by her in an upmarket department store.**
- The Inspector ensures Sheila understands the consequences of her actions and as a result, **Sheila feels guilt** and remorse for her behaviour.
- At the end of the first Act, the Inspector reveals that **Eva Smith changed her name to Daisy Renton.** Gerald reveals to Sheila he had an affair with Daisy Renton.
- The Act ends with the Inspector opening the door to the dining room and expecting **Gerald to explain his part** in the tragedy.



Vocabulary	Wider Research	Apply
<ol style="list-style-type: none"> <li>1. Socialist</li> <li>2. Capitalist</li> <li>3. Audience</li> <li>4. Pre-war</li> <li>5. Post-war</li> <li>6. Dramatic irony</li> <li>7. Bourgeois</li> <li>8. Aristocracy</li> <li>9. Eva Smith</li> <li>10. Mr Birling</li> <li>11. Mrs Birling</li> <li>12. Sheila Birling</li> <li>13. Eric Birling</li> <li>14. Gerald Croft</li> <li>15. Inspector Goole</li> <li>16. Guilt</li> <li>17. Suicide</li> <li>18. Disinfectant</li> <li>19. Social critique</li> <li>20. Brumley</li> <li>21. Protagonist</li> <li>22. Fatalist</li> <li>23. Foreshadowing</li> <li>24. Anagnorisis</li> <li>25. Antagonist</li> <li>26. Catharsis</li> <li>27. Play</li> <li>28. Cyclical</li> <li>29. Context</li> <li>30. Foreshadow</li> </ol>	<p>Revise <i>An Inspector Calls</i> using BBC bitesize - <a href="https://www.bbc.co.uk/bitesize/topics/zpr639q">https://www.bbc.co.uk/bitesize/topics/zpr639q</a></p> <p>Use Sparknotes to further your understanding of plot, character, theme and quotations: <a href="https://www.sparknotes.com/drama/an-inspector-calls/">https://www.sparknotes.com/drama/an-inspector-calls/</a></p> <p>Watch other adaptations of the play on Youtube – what are the key similarities and differences? <a href="https://www.youtube.com/watch?v=LoTwDfUF5DI">https://www.youtube.com/watch?v=LoTwDfUF5DI</a></p> <p>Listen to Mr Bruff’s revision resources - <a href="https://www.youtube.com/watch?v=M75yUusyNySY">https://www.youtube.com/watch?v=M75yUusyNySY</a></p> <p>Or, to Stacey Raey’s top grade analysis. This video focuses on terminology - <a href="https://www.youtube.com/watch?v=HXPw911_iuA&amp;list=PLQE65hp6MwUqRTTU7tGg1NgmChVf5wBrZ&amp;index=9">https://www.youtube.com/watch?v=HXPw911_iuA&amp;list=PLQE65hp6MwUqRTTU7tGg1NgmChVf5wBrZ&amp;index=9</a></p> <p>If you’re going for the top grades, read this article from the British Library about Priestley’s political beliefs: <a href="https://www.bl.uk/20th-century-literature/articles/an-inspector-calls-and-j-b-priestleys-political-journey">https://www.bl.uk/20th-century-literature/articles/an-inspector-calls-and-j-b-priestleys-political-journey</a></p>	<ol style="list-style-type: none"> <li>1. Create flashcards for language, structure and word-level techniques</li> <li>2. Create a mind-map for each of the characters in <i>An Inspector Calls</i>. What do we learn about them in Act 1? Can you remember any key quotations?</li> <li>3. Complete a character description of the Birling family. Use the Language Paper 1, Question 5 format to help you – describe a picture and zoom into 4 key parts of the character’s appearance</li> <li>4. Compile a set of quiz questions about the context of <i>An Inspector Calls</i>. Sort your questions into the following categories – 1912, 1945, 2021</li> <li>5. Define each of the key vocabulary terms from the knowledge organiser. Once you have completed your definitions, write a sentence that contains each of the key words.</li> </ol>



# KS4 Knowledge Organiser

## Subject: MFL-Year 10 French

<i>Ms Lara Head of Languages Department</i>	<i>larae006@sflt.org.uk</i>
<i>Mrs Sangaré French Teacher</i>	<i>sangm107@sflt.org.uk</i>

Also, please remember, you should spend 20 minutes on the following apps and websites:

- GCSE Pod - French
- BBC Bitesize
- Kerboodle (MFL)
- Memrise / Duolingo (MFL)
- Oak National Academy

If you would like support with any of the apps, please email Ms Lara or Mrs Sangaré.

## How to use the Knowledge Organiser:

- Your teacher will direct you to what topics to revise for each week.
- You will be expected to revise for at least 30 minutes each evening.
- Ask someone to quiz you on the key information.
- Remember to APPLY the information using the tasks included in each Knowledge Organiser.

## Revision techniques and strategies

1. Turn your huge amount of revision notes into small and easy to handle
2. Put a question on the front of your flash cards and write the answer on the reverse – then ask someone to quiz you
3. Mind map – what is the topic and what are the key points you need to remember? You could use different colours for different ideas/characters
4. A question a day – complete an exam question, under timed conditions, each day
5. Record yourself reading your notes and listen back to yourself
6. BUG the question – write out exam questions, examine the key words and plan an answer
7. Use of post-it notes – place post-it notes in key places so you are constantly reading key information
8. Make lists of important facts and figures
9. Draw diagrams to help you visually remember your notes
10. 'Look, cover, say, write, check' – use this method to make sure that you are remembering key information

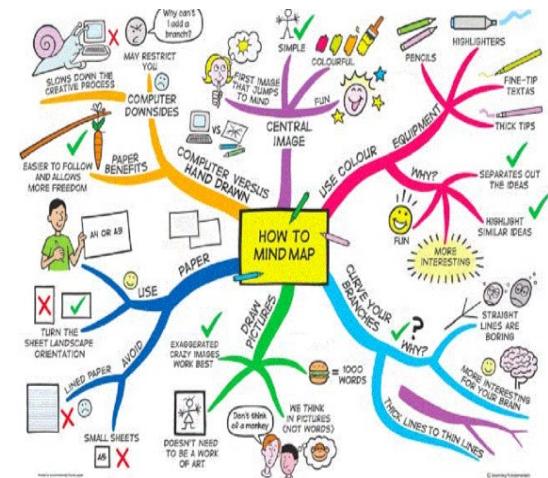
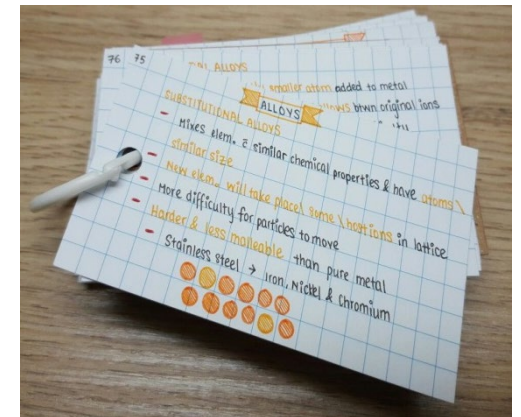
F.R.A.C.T.I.O.N. =

F.R.A.C.

T.I.O.N.

1. F → Frequency words / time expressions.
2. R → Reasons
3. A → Another pronoun/ person apart from "je"
4. C → Connectives
5. T → Tenses (at least 3)
6. I → Intensifiers/ qualifiers
7. O → Opinions
8. N → Negatives

Made and used by Mrs Sangari





## **Revision tips**

- Make sure you get some sleep – cognition (acquiring and understanding information) and ability to recall learned facts is limited when you are sleep deprived.
- Eat a healthy, balanced diet - lots of fruit and veg, meats for protein, limit sugary fatty foods.
- Switch off social media/distractions - ignore your phone for a few hours! It will help you keep focused. Social networking, while it's fun, is a big distraction from your revision.
- Give yourself a nice space to work in - have a nice, organised study space with lots of stationary to help you make quality notes/highlight.
- Make a plan - schedule dedicated study time into your daily schedule. Be organised with your time. Stick to your plan. Sacrifice some of your social time for study time. No pain, no gain!
- Start your revision early - start now, if you have not already done so, not days before your exam.
- Do small chunks of revision. Your brain is not capable of mass storing information in a short space of time. Digesting small chunks of information, over a longer period of time, means you are more likely to remember it

Click on the QR code below which will take you to the revision support page on our website:





**French.** *Theme 1: Identity and culture (L'identité et la culture)*

*Unit 1: Me, my family and my friends (Moi, ma famille et mes ami(e)s)*

<b>Je m'appelle</b> Emile et j'ai quatorze ans.	<b>I am called</b> Emile and I am fourteen years-old.
Je pense que <b>je suis un ado comme les autres.</b>	I think that <b>I am just a normal teenager.</b>
<b>Tout le monde dit que</b> je ressemble beaucoup à ma mère	<b>Everyone says that</b> I look a lot like my mum
car nous avons <b>tous les deux</b> les yeux marron	because we <b>both</b> have brown eyes
et les cheveux noirs raides.	and black and straight hair.
<b>Je dirais que</b> je suis sociable	<b>I would say that</b> I am quite sociable
et que j'aime <b>m'amuser</b>	and that I like <b>to have fun</b>
mais <b>mes parents disent que</b> je suis <b>trop</b> têtue	but <b>my parents say that</b> I am <b>too</b> stubborn
et que je <b>n'écoute jamais.</b>	and that I <b>never</b> listen!
Il y a quatre personnes dans ma famille.	There are four people in my family.
<b>Ma mère qui s'appelle Fatou est</b> généreuse	<b>My mother who is called Fatou is</b> generous
mais <b>mon père, Albert, est</b> sévère et arrogant.	but <b>my dad, Albert, is</b> strict and arrogant.
<b>Je n'ai qu'une</b> sœur, je n'ai pas de frère.	<b>I only have one</b> sister, I do not have a brother.
<b>J'ai de la chance d'avoir</b> ma sœur Malika	<b>I am lucky to have</b> my sister Malika
car elle est gentille et <b>on se dit tout.</b>	because she is kind and <b>we tell each other everything.</b>
<b>Je m'entends bien avec</b> elle.	<b>I get on well with</b> her.
Je n'ai pas de problème avec ma mère	I do not have any problem with my mother
car <b>je me confie souvent à elle.</b>	because <b>I often confide in her.</b>
Par contre, <b>je ne m'entends pas bien</b> avec mon père	On the other hand, <b>I do not get on well</b> with my dad
car <b>il ne veut pas que je sorte</b> avec mes amis pendant la	because <b>he doesn't want me to go out</b> with my friends during the

semaine!	week!
Je suis sociable et aimable <b>donc</b> j'ai beaucoup de copains.	I am sociable and friendly <b>therefore</b> I have a lot of friends.
Pour moi, l'amitié est importante	To me friendship is important
car on peut <b>avoir du soutien</b>	because we can <b>have some support</b>
et <b>on peut dire</b> ses secrets ou <b>parler de</b> ses soucis.	and <b>we can tell</b> our secrets or <b>talk about</b> our worries.
Un bon ami <b>doit toujours être</b> honnête et généreux.	A good friend <b>must always be</b> honest and generous.
Un ami <b>ne doit pas</b> être méchant.	A good friend <b>must not</b> be nasty.
J'ai un meilleur ami qui s'appelle Louis.	I have a best friend who is called Louis.
Ses parents <b>ont divorcés il y a cinq ans.</b>	Her parents divorced 5 years ago.
Je peux <b>parler de tout</b> avec lui	I can <b>talk about everything</b> with him
et partager ma passion pour le shopping.	and share my passion for shopping.
<b>Le weekend dernier, je suis allée</b> en ville avec mes amis.	<b>Last weekend, I went</b> to town with my friends.
D'abord, <b>nous avons acheté</b> des cadeaux et des bonbons.	First, <b>we bought</b> some presents and sweets.
Puis, <b>nous avons bu</b> un chocolat chaud dans un café	Then, <b>we drank</b> a hot chocolate in a café
et <b>nous avons mangé</b> des beignets qui étaient délicieux.	and <b>we ate</b> some doughnuts which were delicious.
À l'avenir, je voudrais me marier.	In the future, I would like to get married.
Ma femme idéale <b>serait</b> belle et intelligente.	My ideal wife <b>would be</b> beautiful and intelligent.
<b>Aussi, j'aimerais</b> avoir une famille avec trois enfants. <b>Ce serait</b> génial!	<b>Also, I would like</b> to have a family with three children. <b>It would be</b> great!

Vocabulary	Wider Research	Apply
<i>casse-pieds</i> annoying <i>le demi-frère</i> half / step-brother <i>la demi-sœur</i> half / step-sister <i>détester</i> to hate <i>le nom</i> name <i>amusant(e)</i> funny <i>bien s'entendre avec</i> to get on well with <i>le / la copain / copine</i> pal, mate <i>désagréable</i> unpleasant <i>se disputer</i> to argue <i>drôle</i> funny <i>égoïste</i> selfish <i>le / la fils / fille unique</i> only son / daughter <i>généreux(-se)</i> generous <i>gentil(le)</i> kind <i>jaloux(-se)</i> jealous <i>laisser</i> to let <i>méchant(e)</i> naughty, nasty <i>mignon(ne)</i> cute <i> paresseux(-se)</i> lazy <i>parfois / quelquefois</i> sometimes <i>le petit ami</i> boyfriend <i>la petite amie</i> girlfriend <i>sortir</i> to go out <i>souvent</i> often <i>sympa</i> nice <i>timide</i> shy <i>vraiment</i> really <i>l'adolescent(e)</i> adolescent <i>avoir de l'humour</i> to have a sense of humour	<a href="http://www.wordreference.com">www.wordreference.com</a>  <a href="https://www.kerboodle.com/users/login">https://www.kerboodle.com/users/login</a>  <a href="https://www.memrise.com/">https://www.memrise.com/</a>  <a href="https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/french">https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/french</a>  <a href="https://www.bbc.co.uk/bitesize/examspe/cs/zr8bmfr">https://www.bbc.co.uk/bitesize/examspe/cs/zr8bmfr</a>	<p>Answer the following questions in French.</p> <ul style="list-style-type: none"> <li>it is wise to use words/ expressions that you'll easily remember. <b>Aim to write 3 sentences maximum as answer per question set – where possible.</b> Have, on average 30 words in total per answer – where possible.</li> <li><b>Mind the tense</b> in which each question is set. The tense in your answers should reflect the tense in the question you are answering. <b>Remember that what you write does not have to be true. Just show off your vocab and grammar knowledge.</b></li> </ul> <p>1/ Quel âge as-tu? (<i>How old are you?</i>)  2/ Tu as des frères et sœurs? (<i>Do you have brothers and sisters?</i>)  3/ Comment s'appellent-ils / elles? (<i>What are their names?</i>)  4/ Quel âge a ton frère / ta sœur? (<i>How old is your brother/your sister?</i>)  5/ Tu as un animal? (<i>Do you have a pet?</i>)  6/ Tu t'entends bien avec ta famille et avec tes amis? (<i>Do you get on well with your family and with your friends?</i>)  7/ <b>Où es-tu allé le weekend dernier avec tes amis?</b> (<i>Where did you go last weekend with your friends?</i>)  8/ Tu as un(e) petit(e) ami(e)? Si oui, il/elle est comment? Si non, pourquoi? (<i>Do you have a boyfriend / a girlfriend? If yes, what is he/she like? If not, why?</i>)  9/ <b>Tu voudrais te marier? Si oui, à quel âge? Si non, pourquoi?</b> (<i>Would you like to get married? If yes, at what age? If not, why?</i>)  10/ <b>Tu aimerais avoir des enfants? Si oui, Combien? Si non, pourquoi?</b> (<i>Would you like to have children? If yes, how many? If not, why?</i>)</p>

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**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 1: Landscapes of the UK**

**Characteristics of lowland areas:** lowland areas are closer to sea level, and lie below 200m above sea level. They are usually very flat, and usually have a higher population of people and settlements, because it is easier to build on than a highland area.

**Characteristics of highland areas:** highland areas are areas that are over 600m above sea level. Upland / highland areas usually have dramatic peaks and ridges with weathered moorland. Higher landscapes experience colder weather, with temperature dropping by 1 degree for each 100m you go up.

**Distribution:** Highlands are mostly in northern England, Wales and Scotland. This is because this is where there are harder rocks that do not suffer as much from erosion. The lowlands are mostly found around the south-east of England, and along the coasts of the UK.

**Glaciated landscapes:** These are formed in regions where there was ice and glaciers covering the landscapes around 18000 years ago. These large expanses of ice carved in to the mountains, leaving dramatic and large features such as u-shaped valleys, pyramidal peaks, and corries. When the ice has melted away, the landscapes are left behind.

**Distinctive characteristics of landscapes:**

**Geology:** The harder the rock, the higher the land because it is eroded less. Sedimentary rocks like chalk and clay lie under lowland areas. Rocks are weathered to create soils; as rocks contain different minerals this affects the type of vegetation that can grow in the soil.

**Climate:** Rain, frost and wind all weather rocks. - Highland areas often experience freezing conditions so are shaped by freeze-thaw weathering. Windy, exposed locations are weathered faster than sheltered locations.

**Human activity:** Humans can affect the landscape by clearing land for agriculture and chopping down areas of woodland. Flat land is used for arable (crop) farming and grassy areas are used for dairy farming. Upland areas have been used for sheep farming. As areas and settlements have grown, land has been reshaped, concreted over, and roads and railways built. Rivers are also controlled or diverted around settlements to allow for human activity.



**Grampian Mountains**

- highland area
- Igneous rocks
- Shaped by glaciation (ice) in the past

**Snowdonia**

- highland area
- Igneous rocks from volcanoes
- Shaped by glaciation (ice) in the past

**The Downs and the Weald**

- lowland area
- Clays and sands (sedimentary rocks)



**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

### Topic 2: Geomorphic processes

**Geomorphic processes** are natural processes that change the surface of the land and help to form the distinctive landscapes that we have in the UK.

The main geomorphic processes that you need to know are weathering, mass movement, erosion, transportation and deposition.

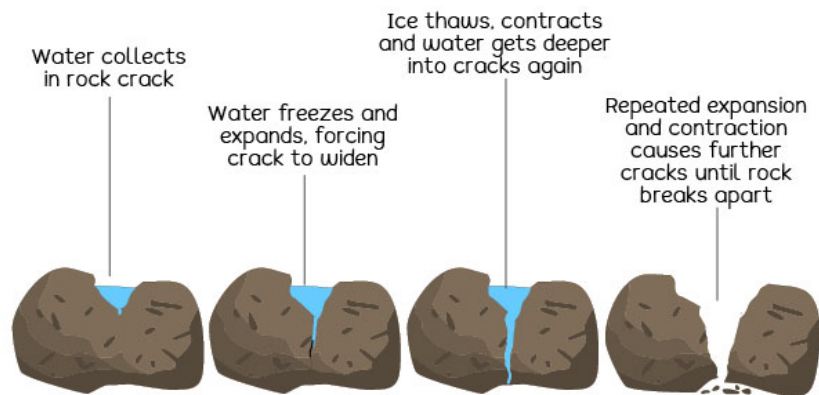
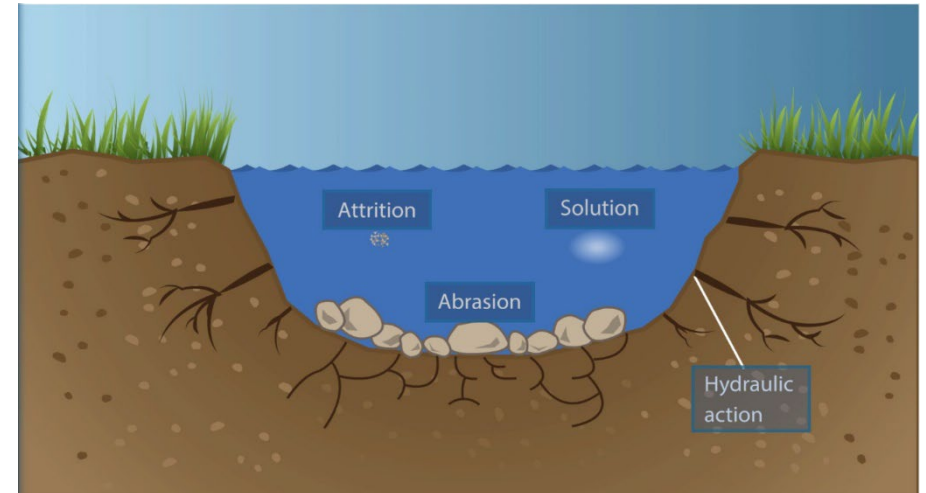
#### Erosion processes:

**Abrasion:** when sediment is thrown against a surface by water, and rubs the material to smooth the landform.

**Attrition:** where pebbles hit each other or landforms, making rocks break and get smaller and rounder.

**Hydraulic Action:** where water forces its way in to the cracks, which creates weaknesses in the rocks, causing them to split apart. This happens especially if the water freezes, because ice takes up more space than water and cracks open the rocks.

**Solution:** where rocks are dissolved in water.



eschooltoday.com

#### Weathering processes:

**Biological Weathering:** rocks and land can be broken down by the actions of animals and plants living in them. E.g. the roots going down in to a river bank will lead to the river bank being less stable.

**Chemical Weathering:** Minerals in rocks can react chemically in different ways, which weakens the rocks

**Physical (aka mechanical) weathering:** the physical actions of rain, frost and wind that create weaknesses in the rocks. Freeze-thaw weathering is where water in a crack freezes, expands and makes the crack wider.



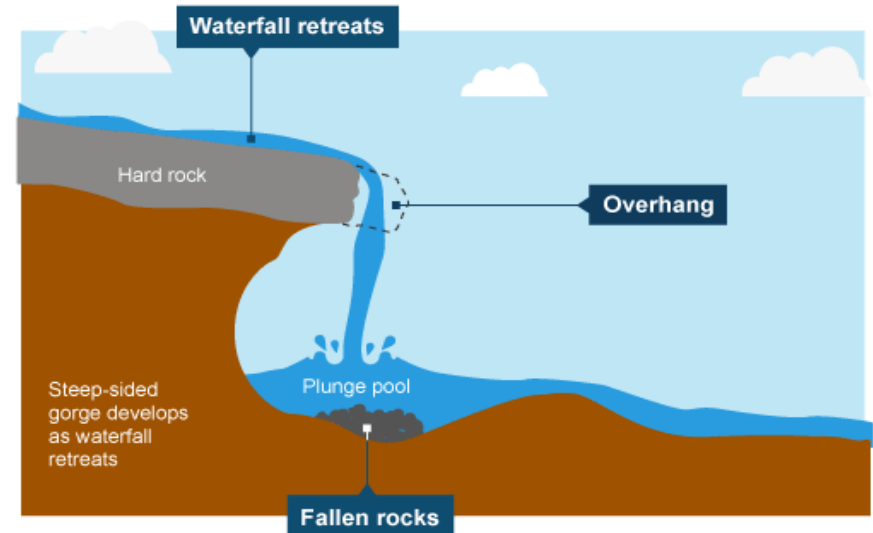
**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 3: River landforms**

Landforms are the things that are created by geomorphic processes like erosion and weathering. Landforms often have distinctive shapes, or distinctive ways in which they are formed. The river landforms that you need to be able to explain are: Waterfalls, Gorges, V-Shaped Valleys, Floodplains, Levees, Meanders and Ox-Bow lakes.

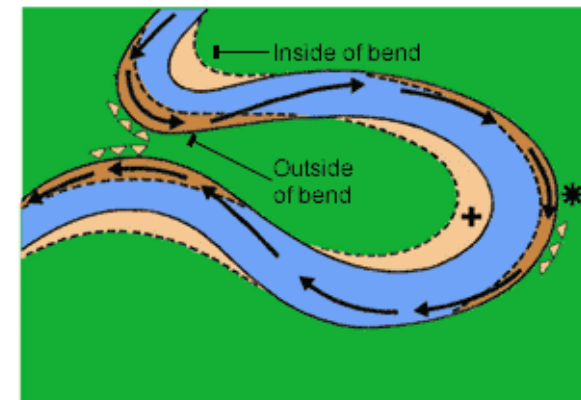
**Waterfalls and gorges:**

1. Created when the river flows over an area of hard rock followed by soft rock.
2. The soft rock is eroded more quickly creating a step.
3. As the water goes over the step it erodes more and more of the softer rock.
4. A steep drop is created which is called a waterfall.
5. The hard rock is undercut by the erosion and collapses due to gravity.
6. The collapsed rock is swilled around and helps to erode the softer rock in



**Meanders and ox-bow lakes:**

1. The current is faster on the outside of the bend because the channel is deeper. Therefore, more erosion takes place on the river bend forming a river cliff.
2. The current is slower on the inside of the bend because the channel is shallower. Eroded material is deposited on the inside forming a slip-off slope.
3. Eventually erosion causes the outside bends to become closer and the river breaks through. Deposition cuts off the meander forming an ox-bow lake.





Vocabulary	Wider Research	Apply
<ul style="list-style-type: none"> <li>• Abrasion</li> <li>• Attrition</li> <li>• Biological weathering</li> <li>• Chemical weathering</li> <li>• Deposition</li> <li>• Distribution</li> <li>• Floodplain</li> <li>• Geomorphic processes</li> <li>• Glaciation</li> <li>• Gorge</li> <li>• Holocene</li> <li>• Hydraulic action</li> <li>• Ice age</li> <li>• Igneous</li> <li>• Lateral erosion</li> <li>• Levee</li> <li>• Lowland landscape</li> <li>• Mass movement</li> <li>• Meander</li> <li>• Metamorphic</li> <li>• Ox-bow lake</li> <li>• Physical weathering</li> <li>• Sedimentary</li> <li>• Solution</li> <li>• Transportation</li> <li>• Upland landscape</li> <li>• V-shaped valley</li> <li>• Vertical erosion</li> <li>• Waterfall</li> </ul>	<p>GCSE Bitesize:  <a href="https://www.bbc.co.uk/bitesize/guides/zxw8frd/revision/1">https://www.bbc.co.uk/bitesize/guides/zxw8frd/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/z9vv2p3/revision/1">https://www.bbc.co.uk/bitesize/guides/z9vv2p3/revision/1</a></p> <p>YouTube:  <a href="https://www.youtube.com/watch?v=mL1RsDRvTig">https://www.youtube.com/watch?v=mL1RsDRvTig</a>  <a href="https://www.youtube.com/watch?v=8a3r-cG8Wic">https://www.youtube.com/watch?v=8a3r-cG8Wic</a>  <a href="https://www.youtube.com/watch?v=qGw1yB10IX0">https://www.youtube.com/watch?v=qGw1yB10IX0</a>  <a href="https://www.youtube.com/watch?v=ixlpDWItLPg">https://www.youtube.com/watch?v=ixlpDWItLPg</a></p>	<p><b>Using your wider research complete the following exam questions</b></p> <ol style="list-style-type: none"> <li>1. Describe how human activities have affected the landscape of the UK. [4]</li> <li>2. Explain how geology and climate have affected the upland landscapes of the UK. [6]</li> <li>3. Describe the process of mechanical weathering. [2]</li> <li>4. Explain the formation of a V-shaped valley. [3]</li> <li>5. Describe the characteristics of a waterfall. [3]</li> <li>6. Explain how the processes of erosion and deposition are responsible for forming the characteristic features of a meander. [4]</li> <li>7. Explain the formation of a levee. [3]</li> <li>8. Describe how a floodplain is created. [3]</li> </ol> <p><b>Create some revision material</b></p> <ul style="list-style-type: none"> <li>• Create a series of detailed mind maps showing the different geomorphic processes that take place in rivers.</li> <li>• Your case study for this term is the River Medway. Conduct some research and create a tourism leaflet about the River Medway.</li> </ul> <p>Draw and annotate a map of the UK and highlight the different upland and lowland locations- add the surrounding towns, cities and population sizes.</p>



**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

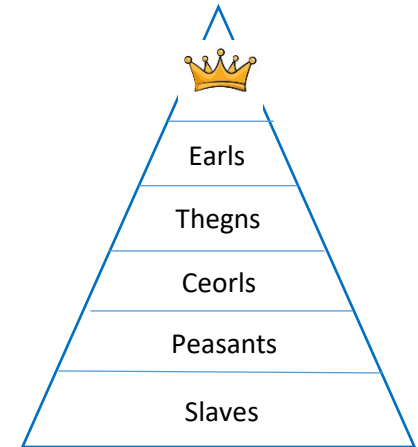
**Topic 1: Anglo-Saxon society**

**Anglo-Saxon Hierarchy**

- Population – 2 million, 90% peasants who farmed land and there were about 6000 Thegns
- Church controlled by Bishops, who were powerful
- Society was in a social hierarchy; King at top, earls ruling the 5 earldoms, Thegns (local lords) in charge of shires, and military figures
- Ceorls (free peasants), Peasants and Slaves worked the land

**Anglo-Saxon England**

- 5 Earldoms: Mercia, Wessex, East Anglia, Kent and Northumbria
- Parts of the North were still ruled by descendants of the Vikings/Danish, called the the Danelaw with own culture
- The biggest cities were London and York but the capital was Winchester where the Royal Mint was (where money is made)
- Earldoms were split into shires, shires were split into hides (100 families) and 10 families was a tithing
- 10% of people lived in towns (burhs), which were fortified



**Anglo Saxon Government**

- King most powerful but took advice from the Witan (royal council)
- Earls very powerful, with key roles. This made Earls like the Godwin's powerful, almost rivalling Edward himself
- Each shire had a shire reeve (sheriff) who followed Kings writ: keep law and order, collect taxes and raise the fyrd (army)

**The Economy**

- England was a wealthy country, trading wool, farming in East and international trading
- Economy in villages was a 'subsistence' economy – peasants produced what they needed
- In towns there was an 'exchange' economy. People exchanged and bartered for goods.

**The Legal System**

- Collective responsibility, whole tithing had to keep own order
- Wergild, compensation for killing family, to avoid blood feud
- Hue and Cry, community join together to track down criminals



**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 2: The Succession Crisis**

**Edward and the succession crisis in 1066**

- Edward the Confessor died on 6th January 1066, leaving no heir starting the succession crisis (who should be king!)
- The Witan always had to choose the new King, they had options and were certainly worried of threat from William and the Danes

**Reasons for the crisis**

1. No Heir

- Edward has no son, therefore not having an heir to the throne
- His nephew, Edgar the Aethling was his natural born heir, as he was Edwards nephew and had royal blood.
- However, as he was only 16 at the time, he had no support of the Anglo Saxon Earls or Witan

2. Harold's Embassy to Normandy

- William, duke of Normandy, claims that he made an agreement with Edward in 1051 that he would become king if Edward had no child, which was confirmed by Harold in 1061 during the embassy to Normandy. William had the support of the Pope
- Normans claim Harold Godwinson swore an oath on the bible to support Williams claim to the throne, but this is rumour!

3. Promises

- Harold Godwinson claimed that Edward had chosen him to be next king on his deathbed. Harold was Edwards deputy, was experienced and had family connections to the king He had the support of the Earls, Thegns and military power
- Harald Hardrada – Harald was king of Norway and a fearsome warrior, he claimed that his relatives had been promised the throne in a secret deal that started when Viking Cnut ruled England until 1035. Hardrada claims the throne was his to claim after he took over from Magnus in 1047. No strong claim, but felt could gain support from Danelaw, had 15,00 warriors and also had support from Tostig Godwinson

**The Embassy to Normandy in 1064**

- In 1064 Harold Godwinson was sent on an embassy to Normandy by Edward - Normans claim Harold came to confirm William to get throne
- He was taken prisoner by Count Guy of Ponthieu – William of Normandy rescued him and then Harold spent time in Normandy with many military victories
- Harold then swore an oath, upon the bible and relics, that he would support William's claim to the throne

**Harold Crowned**

- On 6<sup>th</sup> January Harold crowned by the Witan who wanted a King quickly because of invasion threats. Harold placed his army in the south



Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

### Topic 3: The Battles of 1066

#### The Battle of Gate Fulford, 20<sup>th</sup> September 1066

- Harald Hardrada and Tostig invade with 10,000 warriors
- They fight Earls Edwin and Morcar just outside York. They are defeated by the invaders.
- Hardrada outflanks the English, many killed & hostages taken
- Harold Godwinson is now forced to come north himself

#### The Battle of Stamford Bridge, 25<sup>th</sup> September 1066

- Harold surprises Hardrada and Tostig at Stamford Bridge, they had left their armour and some of their troops at their boats
- Harold was victorious, killing Tostig and Hardrada because their armies were tired from Gate Fulford, the surprised arrival of Harold and that his men broke the Viking shield wall

#### The Norman invasion

- Williams fleet was delayed leaving Normandy, but they left on 27th Sept, arriving 28th at Pevensey where William built a pre made castle, had a feast, harried the local area and began to prepare.
- Harold had to rush down from York, gathering troops/visiting London and arriving at Hastings first

#### The Battle of Hastings, 14<sup>th</sup> October 1066

1. William launches attack at 9:00am with arrows, followed by footsolders and cavalry attacks against the English shield wall, but this fails and by 12:00 English hold strong on Senlac hill
2. Rumour William is dead, panic in Normans but William removed helmet and increases morale
3. William ordered feigned retreat, the Norman cavalry pretend to flee (run away) and the English housecarls leave the shield wall to chase them. This happens 3 times, breaking the shield wall
4. In chaos, Harold is shot in the eye, many of the Fyrd flee and Housecarls are cut to shreds
5. By 6:00 William has won the battle

#### Why did William win?

- Better equipped, better trained, bigger and more diverse army
- William's leadership and tactics
- Harold's army exhausted after marching
- Papal support for William (morale)





Vocabulary	Wider Research	Apply
1) Hierarchy 2) Agricultural 3) Earls 4) Thegns 5) Ceorls 6) Witan 7) Shires 8) Hundreds 9) Tithing 10) Hue and cry 11) Wergild 12) Subsistence 13) Edward confessor 14) Harold Godwinson 15) Harald Hardrada 16) Edgar Aethling 17) Tostig Godwinson 18) William Normandy 19) Embassy 20) Succession 21) Gate Fulford 22) Stamford Bridge 23) Hastings 24) Shield Wall 25) Housecarl 26) Papal banner 27) Fyrd 28) Cavalry 29) Feigned retreat 30) Senlac Hill	<p><a href="https://www.bbc.co.uk/bitesize/guides/z8f4mnb/revision/1">https://www.bbc.co.uk/bitesize/guides/z8f4mnb/revision/1</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/z8f4mnb/revision/2">https://www.bbc.co.uk/bitesize/guides/z8f4mnb/revision/2</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/1">https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/1</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/2">https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/2</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/3">https://www.bbc.co.uk/bitesize/guides/zwbdhv4/revision/3</a></p> <p><a href="#">Who were the claimants to the throne in 1066? (1/6)   History – The Norman Conquest - YouTube</a></p> <p><a href="#">1066: The Battle of Fulford (2/6)   History – The Norman Conquest - YouTube</a></p> <p><a href="#">1066: The Battle of Stamford Bridge (3/6)   History - The Norman Conquest - YouTube</a></p> <p><a href="#">1066: The Battle of Hastings (4/6)   History - The Norman Conquest - YouTube</a></p>	<ol style="list-style-type: none"> <li>1. Draw a diagram of the Anglo-Saxon social hierarchy, explaining each group of people.</li> <li>2. <b>EXAM QUESTION PRACTICE: EXPLAIN WHY THE KING HAD SO MUCH POWER IN ANGLO-SAXON ENGLAND</b></li> <li>3. Write a detailed paragraph explaining who you think had the strongest claim to the throne in 1066.</li> <li>4. <b>EXAM QUESTION PRACTICE: DESCRIBE 2 FEATURES OF HAROLD'S EMBASSY TO NORMANDY IN 1064 (4)</b></li> <li>5. Draw your own map that shows the movement of the different armies in September and October 1066.</li> <li>6. Write a detailed paragraph explaining what you think was the biggest reason for William's victory at the Battle of Hastings.</li> </ol>



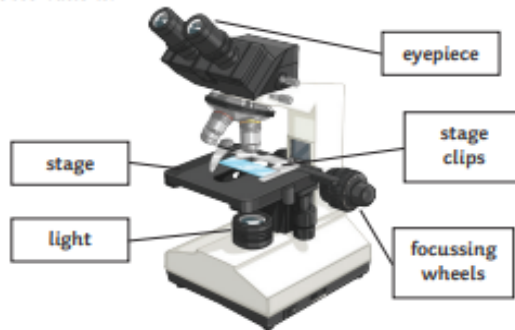


Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

### Required Practical

#### Microscopy Required Practical

- Includes preparing a slide, using a light microscope, drawing any observations – use a pencil and label important observations.



#### Osmosis and Potato Practical

- Independent variable – concentration.
- Dependent variable – change in mass.
- Control variable – volume of solution, temperature, time, surface area of the potato.

The potato in the sugar solution will lose water and so will have less mass at the end; the potato in the pure water solution will gain water.



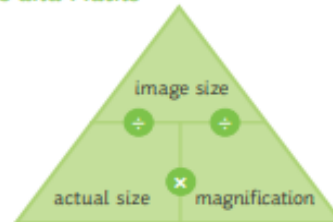
### Specialised Cells

When a cell changes to become a specialised cell, it is called differentiation.

Specialised Cell	Function	Adaptation
sperm	To get the male DNA to the female DNA.	Streamlined head, long tail, lots of mitochondria to provide energy.
nerve	To send electrical impulses around the body.	Long to cover more distance. Has branched connections to connect in a network.
muscle	To contract quickly.	Long and contain lots of mitochondria for energy.
root hair	To absorb water from the soil.	A large surface area to absorb more water.
phloem	Transports substances around the plant.	Pores to allow cell sap to flow. Cells are long and joined end-to-end.
xylem	Transports water through the plant.	Hollow in the centre. Tubes are joined end-to-end.

### Equations and Maths

#### Equation



#### Maths Skills

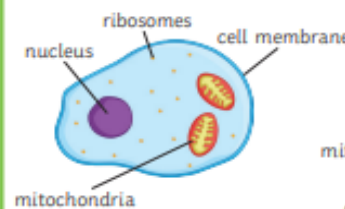
Conversions:  
Micrometres to millimetres: divide by 1000.

Standard Form:  
 $0.003 = 3 \times 10^{-3}$

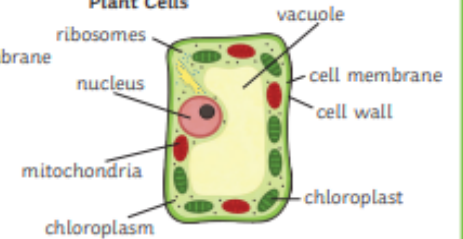
$5.6 \times 10^{-5} = 0.0056$

### Prokaryotic and Eukaryotic Cells

#### Animal Cells



#### Plant Cells

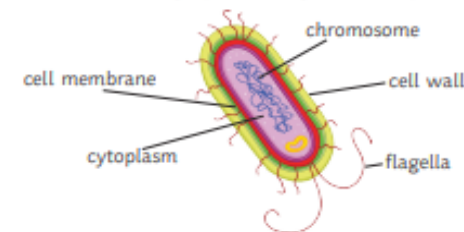


Plant and animal cells have similarities and differences:

	Animal	Plant
nucleus	✓	✓
cytoplasm	✓	✓
chloroplast	X	✓
cell membrane	✓	✓
permanent vacuole	X	✓
mitochondria	✓	✓
ribosomes	✓	✓
cell wall	X	✓

#### Bacterial Cells

Bacterial cells do not have a true nucleus, they just have a single strand of DNA that floats in the cytoplasm. They contain a plasmid.





Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

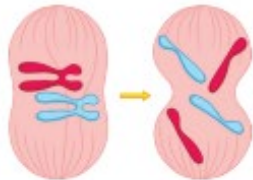
### Chromosomes and Mitosis

In the nucleus of a human cell there are 23 pairs of **chromosomes**. Chromosomes contain a double helix of **DNA**. Chromosomes have a large number of genes.



The **cell cycle** makes new cells.

Mitosis: DNA has to be **copied/replicated** before the cell carries out mitosis.



### Key Vocabulary

- active transport
- alveoli
- chromosome
- diffusion
- eukaryotic
- gas exchange
- mitosis
- multicellular
- osmosis
- prokaryotic
- undifferentiated
- replicated
- specialised
- villi

### Stem Cells

**Embryonic stem cells** are **undifferentiated** cells, they have the potential to turn into any kind of cell.



**Adult stem cells** are found in the bone marrow, they can only turn into some types of cells e.g. blood cells.

**Uses of stem cells:**

- Replacing faulty blood cells;
- making insulin producing cells;
- making nerve cells.

Some people are against stem cell research.

For Stem Cell Research	Against Stem Cell Research
Curing patients with stem cells - more important than the rights of embryos.	Embryos are human life.
They are just using unwanted embryos from fertility clinics, which would normally be destroyed.	Scientists should find other sources of stem cells.

### Stem Cells in Plants

In plants, stem cells are found in the **meristem**. These stem cells are able to produce clones of the plant. They can be used to grow crops with specific features for a farmer, e.g. **disease resistant**.

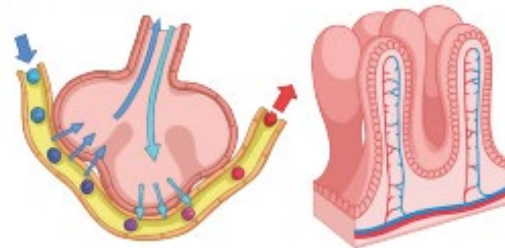
### Exchange - Humans

**Multicellular** organisms have a large surface area to volume ratio so that all the substances can be exchanged.

#### Gas exchange: Lungs

The alveoli are where gas exchange takes place.

They have a large surface area, moist lining, thin walls and a good blood supply.

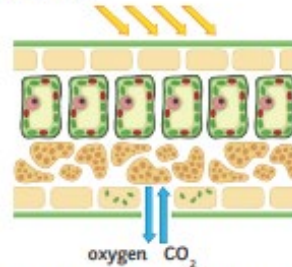


#### Villi: Small Intestine

Millions of villi line the small intestine increasing the surface area to absorb more digested food.

They are a single layer of cells with a good blood supply.

### Exchange in Plants

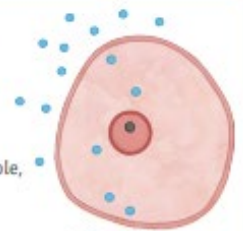


The surface of the leaf is flattened to increase the surface area for more gas exchange by diffusion.

Oxygen and water vapour diffuse out of the stomata. Guard cells open and close the stomata, controlling water loss.

### Key Processes

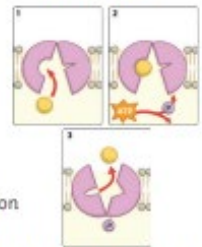
**Diffusion** is the spreading out of particles from an area of higher concentration to an area of lower concentration.



Cell Diffusion

**Cell membranes** are semi-permeable, only small molecules can get through.

**Osmosis** is the movement of water molecules across a partially permeable membrane from a region of higher concentration to a region of lower concentration.

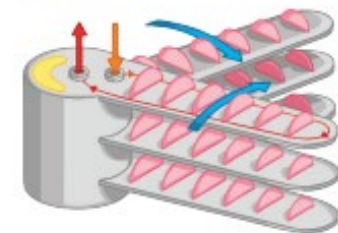


Active Transport in Cells

**Active transport** is the movement of substances against the concentration gradient. This process requires energy from respiration.

### Exchange in Fish






Fish have a large surface area for gas exchange. These are called **gills**. Water enters the fish through the mouth and goes out through the gills. The oxygen is transported from the water to the blood by **diffusion**. Carbon dioxide diffuses from the blood to the water. Each gill has **gill filaments** which give the gills a large surface area. **Lamellae** cover each gill filament to further increase the surface area for more gas exchange. They have a **thin surface layer** and **capillaries** for good blood supply which helps with diffusion.








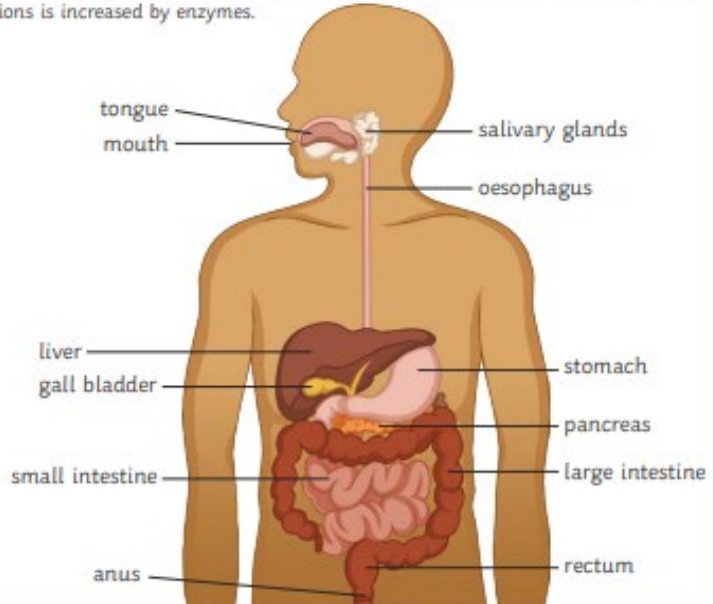
Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

Principles of Organisation				
				
cell	tissue	organ	organ system	organism
Cells are the basic building blocks of all living things.	A group of cells with a similar structure and function is called a tissue.	An organ is a combination of tissues carrying out a specific function.	Organs work together within an organ system.	Organ systems work together to form whole living organisms.

Food Tests (Required Practical)			Effect of pH on the Rate of Reaction of Amylase (Required Practical)		
What are you testing for?	Which indicator do you use?	What does a positive result look like?	<p><b>Iodine</b> is used to test for the presence of <b>starch</b>. If starch is present, the colour will change to blue-black.</p> <p>The <b>independent variable</b> in the investigation is the pH of the buffer solution.</p> <p>The <b>dependent variable</b> in the investigation is the time taken for the reaction to complete (how long it takes for all the starch to be digested by the amylase).</p> <p><b>Method:</b></p> <ol style="list-style-type: none"> <li>Use the marker pen to label a test tube with the first value of pH buffer solution (pH 4) and stand it in the test tube rack.</li> <li>Into each well of the spotting tiles, place a drop of iodine.</li> <li>Using a measuring cylinder, measure 2cm<sup>3</sup> of amylase and pour into the test tube.</li> <li>Using a syringe, measure 1cm<sup>3</sup> of the buffer solution and pour into the test tube.</li> <li>Leave this to stand for five minutes and then use the thermometer to measure the temperature. Make a note of the temperature.</li> </ol>		
sugar	Benedict's reagent	Once heated, the solution will change from blue-green to yellow-red.			
starch	iodine	Blue-black colour indicates starch is present.			
protein	biuret	The solution will change from blue to pink-purple.			
lipid	sudan III	The lipids will separate and the top layer will turn bright red.			

The Digestive System	
<p>The purpose of the digestive system is to break down large molecules into smaller, soluble molecules, which are then absorbed into the bloodstream. The rate of these reactions is increased by enzymes.</p>	
	

- Add 2cm<sup>3</sup> of starch solution into the test tube, using a different measuring cylinder to measure, and begin a timer (leave the timer to run continuously).
- After 10 seconds, use a pipette to extract some of the amylase/starch solution, and place one drop into the first well of the spotting tile. Squirt the remaining solution back into the test tube.
- Continue to place one drop into the next well of the spotting tile, every 10 seconds, until the iodine remains orange.
- Record the time taken for the starch to be completely digested by the amylase by counting the wells that were tested positive for starch (indicated by the blue/black colour change of the iodine). Each well represents 10 seconds of time.
- Repeat steps 1 to 8 for pH values 7 and 10.



Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

### Enzymes

An enzyme is a biological **catalyst**; enzymes speed up chemical reactions without being changed or used up.



This happens because the enzyme lowers the **activation energy** required for the reaction to occur. Enzymes are made up of chains of amino acids folded into a globular shape.

Enzymes have an **active site** which the **substrate** (reactants) fits into. Enzymes are very specific and will only catalyse one specific reaction. If the reactants are not the complimentary shape, the enzyme will not work for that reaction.

Enzymes also work optimally at specific conditions of pH and temperature. In extremes of pH or temperature, the enzyme will **denature**. This means that the bonds holding together the 3D shape of the active site will break and the active shape will deform. The substrate will not be able to fit into the active site anymore and the enzyme cannot function.

Enzyme	Reactant	Product
amylase	starch	sugars (glucose)
protease	protein	amino acids
lipase	lipid	glycerol and fatty acids

The products of digestion are used to build new carbohydrates and proteins and some of the glucose is used for respiration.

**Bile** is produced in the **liver** and stored in the gall bladder. It is an **alkaline** substance which **neutralises** the hydrochloric acid in the stomach. It also works to **emulsify** fats into small droplets. The fat droplets have a higher **surface area** and so the rate of their digestion by lipase is increased.

### The Heart and Blood Vessels

The **heart** is a large muscular organ which **pumps blood** carrying oxygen or waste products around the body. The **lungs** are the site of **gas exchange** where oxygen from the air is exchanged for waste carbon dioxide in the blood. Oxygen is used in the **respiration** reaction to release energy for the cells and carbon dioxide is made as a waste product during the reaction.



The three types of blood vessels, shown above, are each adapted to carry out their specific function.

**Capillaries** are narrow vessels which form networks to closely supply cells and organs between the veins and arteries. The walls of the capillaries are only **one cell thick**, which provides a short **diffusion pathway** to increase the rate at which substances are transferred.

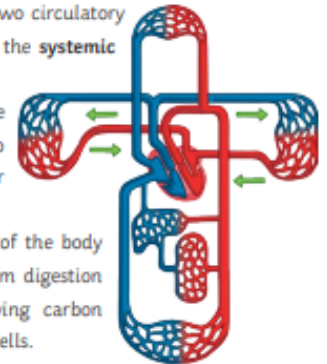
The table below compares the structure and function of arteries and veins:

	Artery	Vein
direction of blood flow	away from the heart	towards the heart
oxygenated or deoxygenated blood?	oxygenated (except the pulmonary artery)	deoxygenated (except the pulmonary vein)
pressure	high	low (negative)
wall structure	thick, elastic, muscular, connective tissue for strength	thin, less muscular, less connective tissue
lumen (channel inside the vessel)	narrow	wide (with valves)

### The Heart as a Double Pump

The heart works as a **double pump** for two circulatory systems; the **pulmonary** circulation and the **systemic** circulation.

The pulmonary circulation serves the lungs and bring deoxygenated blood to exchange waste carbon dioxide gas for oxygen at the **alveoli**.



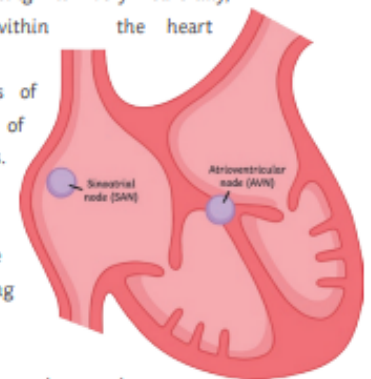
The systemic circulation serves the rest of the body and transports oxygen and nutrients from digestion to the cells of the body, whilst carrying carbon dioxide and other waste away from the cells.

The systemic circulation flows through the whole body. This means the blood is flowing at a much higher pressure than in the pulmonary circuit.

### The Heart as Pacemaker

The rate of the heart beating is very carefully, and automatically, controlled within the heart itself.

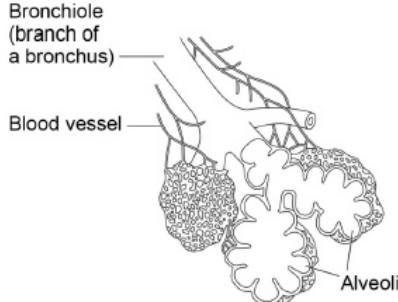
Located in the muscular walls of the heart are small groups of cells which act as pacemakers. They produce electrical impulses which stimulate the surrounding muscle to contract, squeezing the chambers of the heart and pumping the blood.



The **sino-atrial node (SAN)** is located near the right atrium and it stimulates the atria to contract.

The **atrio-ventricular node (AVN)** is located in between the ventricles and stimulates them to contract.



Vocabulary	Wider Research	Apply
<ol style="list-style-type: none"> <li>1. Active transport</li> <li>2. Alveoli</li> <li>3. Chromosome</li> <li>4. Diffusion</li> <li>5. Mitosis</li> <li>6. Gas exchange</li> <li>7. Osmosis</li> <li>8. Replicated</li> <li>9. Villi</li> <li>10. Specialised</li> <li>11. Catalyst</li> <li>12. Amylase</li> <li>13. Artery</li> <li>14. Respiration</li> <li>15. Iodine</li> <li>16. Enzymes</li> <li>17. Starch</li> <li>18. Cell</li> <li>19. Capillary</li> <li>20. Organism</li> </ol>	<p><b>Cell Biology:</b></p> <p>[1] <a href="https://www.bbc.co.uk/bitesize/topics/zpffr82/articles/zc8txbk">https://www.bbc.co.uk/bitesize/topics/zpffr82/articles/zc8txbk</a></p> <p>[2] <a href="https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/zfj3rwx">https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/zfj3rwx</a></p> <p>[3] <a href="https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/z2vrr2p">https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/z2vrr2p</a></p> <p><b>Organisation:</b></p> <p>[1] <a href="https://www.bbc.co.uk/bitesize/topics/zf339j6/articles/zxwwsrd">https://www.bbc.co.uk/bitesize/topics/zf339j6/articles/zxwwsrd</a></p> <p>[2] <a href="https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zkq7wnb">https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zkq7wnb</a></p> <p>[3] <a href="https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zbhcg7h">https://www.bbc.co.uk/bitesize/topics/zvrrd2p/articles/zbhcg7h</a></p>	<ol style="list-style-type: none"> <li>1. One muscle cell was 0.05 mm wide. When viewed using a microscope the image of the muscle cell was 2 mm wide. Calculate the magnification used to view the cell. Use the equation:  <math display="block">\text{magnification} = \frac{\text{width of image}}{\text{width of real cell}}</math> </li> <li>2. Every year thousands of people in the UK have heart attacks. A heart attack is caused when the heart muscle cells do <b>not</b> get enough oxygen, causing the cells to die.             Statins and stents are two treatments used to reduce the risk of someone having a heart attack. Evaluate the use of statins compared with the use of a stent to reduce the risk of a heart attack.         </li> <li>3. The heart is often described as a <b>double pump</b>. Describe why.</li> <li>4. Give <b>two</b> ways the lungs are adapted for efficient exchange of gases. Describe how each adaptation helps to maintain efficient gas exchange.</li> </ol> <div style="text-align: right; margin-top: 20px;">  <p>Bronchiole (branch of a bronchus)</p> <p>Blood vessel</p> <p>Alveoli</p> </div>



# KS4 Knowledge Organiser. Subject: Spanish.

Raising Standards Leader for KS4: Mrs Allen ([stern029@sflt.org.uk](mailto:stern029@sflt.org.uk)).

Head of Languages Department: Ms Lara ([larae006@sflt.org.uk](mailto:larae006@sflt.org.uk)).

## How to use the Knowledge Organiser:

- Your teacher will direct you to what topics to revise for each week. **This topic is usually the topic taught in class during that week.** Topics are taught in a chronological order from **sections 1 to 4** as stated in this document.
- **You are expected to revise the vocabulary and the key sentences for at least 30 minutes each evening.**
- Ask someone to quiz you on the key information
- Remember to **APPLY** the information using the tasks included in each Knowledge Organiser

F.R.A.C.T.I.O.N. =

1. F → Frequency words / time expressions.
2. R → Reasons
3. A → Another pronoun/ person apart from "je"
4. C → Connectives
5. T → Tenses (at least 3)
6. I → Intensifiers/ qualifiers
7. O → Opinions
8. N → Negatives

F.R.A.C.

T.I.O.N.

Made and used by Nime Sangar



## Revision techniques and strategies

1. Turn your huge amount of revision notes into small and easy to handle
2. Put a question on the front of your flash cards and write the answer on the reverse – then ask someone to quiz you
3. Mind map – what is the topic and what are the key points you need to remember? You could use different colours for different ideas/characters
4. A question a day – complete an exam question, under timed conditions, each day
5. Record yourself reading your notes and listen back to yourself
6. BUG the question – write out exam questions, examine the key words and plan an answer
7. Use of post-it notes – place post-it notes in key places so you are constantly reading key information
8. Make lists of important facts and figures
9. Draw diagrams to help you visually remember your notes
10. 'Look, cover, say, write, check' – use this method to make sure that you are remembering key information



## **Revision tips**

- Make sure you get some sleep – cognition (acquiring and understanding information) and ability to recall learned facts is limited when you are sleep deprived.
- Eat a healthy, balanced diet - lots of fruit and veg, meats for protein, limit sugary fatty foods.
- Switch off social media/distractions - ignore your phone for a few hours! It will help you keep focused. Social networking, while it's fun, is a big distraction from your revision.
- Give yourself a nice space to work in - have a nice, organised study space with lots of stationary to help you make quality notes/highlight.
- Make a plan - schedule dedicated study time into your daily schedule. Be organised with your time. Stick to your plan. Sacrifice some of your social time for study time. No pain, no gain!
- Start your revision early - start now, if you have not already done so, not days before your exam.
- Do small chunks of revision. Your brain is not capable of mass storing information in a short space of time. Digesting small chunks of information, over a longer period of time, means you are more likely to remember it

Click on the QR code below which will take you to the revision support page on our website:





**Spanish.** Theme 1: Identity and culture (Identidad y cultura)

Unit 1: Me, my family and my friends (Yo, mi familia y mis amigos)

Section 1		Section 2	
<b>1.1G ¿Cómo es tu familia?</b>		<b>1.1F Hablando de los amigos</b>	
<i>la abuela</i> <i>el abuelo</i> <i>los abuelos</i> <i>alegre</i> <i>alto/a</i> <i>amable</i> <i>anciano/a</i> <i>la barba</i> <i>calvo/a</i> <i>cariñoso/a</i> <i>casi</i> <i>castaño/a</i> <i>corto/a</i> <i>delgado/a</i> <i>las gafas</i> <i>gracioso/a</i> <i>guapo/a</i>	grandmother grandfather grandparents happy tall kind old beard bald affectionate, tender almost brown hair colour short thin glasses funny good looking, handsome	<i>la hermana</i> <i>el hermano</i> <i>la hija</i> <i>el hijo</i> <i>joven</i> <i>largo/a</i> <i>liso/a</i> <i>la madrastra</i> <i>los ojos</i> <i>el padrastro</i> <i>las pecas</i> <i>pelirrojo/a</i> <i>el pelo</i> <i>rizado/a</i> <i>la tía</i> <i>el tío</i> <i>viejo/a</i>	sister brother daughter son young long straight stepmother eyes stepfather freckles red-haired hair curly aunt uncle old
<i>escribir</i> <i>fastidiar</i> <i>fuerte</i> <i>hablador/a</i> <i>honrado/a</i> <i>maduro/a</i> <i>mismo/a</i> <i>peligroso/a</i> <i>reírse</i> <i>seguro/a</i> <i>el sentido del humor</i> <i>travieso/a</i> <i>triste</i> <i>el verano</i> <i>la vida</i>	to write to annoy, to bother strong talkative honest mature same dangerous to laugh certain, sure sense of humour naughty sad summer life	<i>a menudo</i> <i>alegrarse de</i> <i>comprensivo/a</i> <i>conocer</i> <i>el consejo</i> <i>la cosa</i> <i>cuidar</i> <i>la discusión</i> <i>la disputa</i> <i>divertido/a</i> <i>egoísta</i> <i>el equipo</i>	often to be happy about understanding to know a person or place advice thing to look after argument argument good fun selfish team
¡Hola! Me llamo Sergio y tengo 14 años. En mi familia <b>somos</b> cuatro personas.	Hello! My name is Sergio and I am 14. In my family, <b>there are</b> four of us.	Normalmente <b>me llevo bien</b> con mi madre porque es muy comprensiva, pero <b>discuto mucho</b> con mi padre porque es muy estricto.	Normally, I <b>get on well</b> with my mother because she is very understanding, but I <b>argue</b> a lot with my father because he is very strict.
Mis padres <b>son</b> jóvenes.	My parents <b>are</b> young.	<b>Mi mejor amigo</b> se llama Rubén. <b>Somos amigos desde</b> hace ocho años. <b>Me parece simpático.</b>	<b>My best friend</b> is called Rubén. <b>We have been friends</b> since eight years. <b>He seems nice.</b>
Tengo dos hermanas. Mi hermana mayor <b>se llama</b> Ana y <b>tiene</b> 19 años. Es bastante alta y <b>tiene</b> el pelo rubio, <b>como yo.</b>	I have two sisters. My older sister <b>is called</b> Ana and <b>she is</b> 19. <b>She is</b> quite tall and <b>she has</b> blond hair, <b>like me.</b>	Roberto <b>es un amigo especial.</b> <b>Paso mucho tiempo</b> con Roberto porque <b>jugamos</b> al fútbol en el mismo equipo.	Roberto <b>is a special friend.</b> I <b>spend a lot of time</b> with Roberto <b>because we play</b> football in the same team.
Mi hermana menor <b>se llama</b> Sara y <b>tiene</b> 5 años. <b>Lleva</b> gafas y <b>tiene</b> pecas. Es muy cariñosa.	My younger sister <b>is called</b> Sara and <b>she is</b> 5. <b>She wears</b> glasses and <b>she has</b> freckles. <b>She is</b> very affectionate.	También está Sofía. Me llevo muy bien con ella porque es muy divertida y siempre <b>se ríe.</b>	There is also Sofía. I <b>get on very well with her</b> because she is very fun and she always <b>laughs.</b>
<b>No tengo</b> mascotas, pero <b>me gustaría tener</b> un perro.	I <b>don't have</b> any pets, but I <b>would like to have</b> a dog.		

### Section 3

#### 1.2G Hablando de parejas

<i>el beso</i>	kiss	<i>el marido</i>	husband
<i>cada vez más</i>	more and more	<i>el matrimonio</i>	marriage
<i>cocinar</i>	to cook	<i>la mujer</i>	wife, woman
<i>comprar</i>	to buy	<i>la novia</i>	girlfriend, fiancée
<i>echar de menos</i>	to miss someone	<i>el novio</i>	boyfriend, fiancé
<i>enamorado/a</i>	in love	<i>parecer</i>	to seem
<i>los familiares</i>	relatives	<i>la pareja</i>	partner
<i>feliz</i>	happy	<i>los parientes</i>	relatives
<i>la gente</i>	people	<i>pelear(se)</i>	to fight
<i>el invitado/a</i>	guest	<i>el piso</i>	flat, apartment
<i>maleducado/a</i>	rude	<i>serio/a</i>	serious, responsible
		<i>sonreírse</i>	to smile
		<i>las vacaciones</i>	holidays
		<i>ya no</i>	no longer

### Section 4

#### 1.2F Planes para el futuro

<i>así que</i>	so, therefore	<i>encontrar</i>	to find
<i>la boda</i>	wedding	<i>la felicidad</i>	happiness
<i>buscar</i>	to look for	<i>la fiesta</i>	party, festival
<i>cambiar</i>	to change	<i>por eso</i>	therefore
<i>el casamiento</i>	wedding	<i>próximo/a</i>	next
<i>casarse</i>	to get married	<i>el sitio</i>	place
<i>el compañero/a</i>	colleague, friend	<i>solo/a</i>	alone, only
<i>decepcionado/a</i>	disappointed	<i>soltero/a</i>	single
		<i>tener suerte</i>	to be lucky

<b>Echo de menos a mi novia porque está de vacaciones.</b>	<b>I miss my girlfriend because she is on holidays.</b>	<b>En el futuro, me gustaría casarme a los 30 años y tener 4 hijos. Me encantan los bebés.</b>	<b>In the future, I would like to get married at 30 and to have 4 children. I love babies.</b>
Vuelve el domingo.	She is back on Sunday.	<b>Casarse no es importante para mí. Es demasiado caro. Prefiero estar soltero y tener muchos amigos.</b>	<b>Getting married is not important for me. It is too expensive. I prefer to be single and to have many friends.</b>
Mi marido y yo <b>nos peleamos</b> mucho. Nuestra relación es difícil.	My husband and I <b>fight</b> a lot. Our relationship is difficult.	<b>Quiero casarme porque me gustan las bodas.</b>	<b>I want to get married because I like weddings.</b>
Mi mujer y yo <b>discutimos</b> continuamente.	My wife and I <b>argue</b> continuously.	<b>Voy a casarme con una mujer rica y guapa. El aspecto físico de mi pareja es muy importante para mí.</b>	<b>I am going to get married with a rich and pretty woman. The physical appearance is very important to me.</b>
Soy muy feliz en mi matrimonio. <b>Me llevo muy bien</b> con mi mujer.	I am very happy in my marriage. <b>I get on very well</b> with my wife.		

## Section 5

### Wider Research

- Online Dictionary and conjugation tool:

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

- Also, please remember that you should spend at least **20 minutes each week, PRACTISING INDEPENDENTLY**, on each of the following app and website:

<https://www.memrise.com/>

<https://www.kerboodle.com/users/login>

If you need support with any of the above learning resources, please email your teacher.

### Apply

Answer the following questions in Spanish.

- it is wise to use words/ expressions that you'll easily remember. **Aim to write 3 sentences as answer per question set – where possible.** Have, on average 30 words in total per answer – where possible.
- **Mind the tense** in which each question is set. The tense in your answers should reflect the tense in the question you are answering. **Remember that what you write does not have to be true. Just show off your vocab and grammar knowledge.**

1/ ¿Cuántos años tienes? (*How old are you?*)

2/ ¿Tienes hermanos? (*Do you have brothers and sisters?*)

3/ ¿Cómo se llaman? (*What are their names?*)

4/ ¿Cuántos años tiene tu hermano/a? (*How old is your brother/sister?*)

5/ ¿Tienes mascotas? (*Do you have pets?*)

6/ ¿Te llevas bien con tu familia? (*Do you get on well with your family?*)

7/ ¿Quién es tu mejor amigo? ¿Te llevas bien con él?

8/ ¿Qué hiciste con tu mejor amigo el fin de semana pasado? (*What did you do last weekend with your best friend?*)

9/ ¿Tienes novio/a? ¿Cómo es? Si no, ¿por qué no tienes novio/a? (*Do you have a boyfriend / a girlfriend?*)

*What is he/she like? If not, why not?*)

10/ ¿Te gustaría casarte en el futuro? ¿A qué edad? (*Would you like to get married? At what age? If not, why not?*)

11/ ¿Te gustaría tener hijos? ¿Cuántos? Si no, ¿por qué no? (*Would you like to have children? How many? If not, why not?*)







*Your teacher will tell you which topic you should revise. Revise all the information in the topic, ready for a Quiz in lesson.*

## **Topic 1: Place value, powers and primes**

### **Section 1: Place Value**

Revision: <https://corbettmaths.com/2013/03/29/place-value/>

Practice: <https://corbettmaths.com/wp-content/uploads/2023/01/Place-Value.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2023/01/Place-Value-answers-1.pdf>

### **Section 2: Decimals**

Revision: <https://corbettmaths.com/2013/02/15/multiplying-decimals-2/>

Practice: <https://corbettmaths.com/wp-content/uploads/2013/02/decimals-multiplying-and-dividing.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/decimals-division-multiplication.pdf>

### **Section 3: Factors**

Revision: <https://corbettmaths.com/2012/08/24/factors/>

Practice: <https://corbettmaths.com/wp-content/uploads/2013/02/multiples-factors-primes-pdf.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/factors-multiples-primes.pdf>

### **Section 4: Primes**

Revision: <https://corbettmaths.com/2013/03/24/prime-numbers/>

Practice: <https://corbettmaths.com/wp-content/uploads/2018/09/Prime-Numbers-pdf.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2018/09/Prime-answers-pdf.pdf>



*Your teacher will tell you which topic you should revise. Revise all the information in the topic, ready for a Quiz in lesson.*

## **Topic 2: Expressions and Substitution**

### **Section 1: Expressions**

Revision: <https://corbettmaths.com/2013/03/12/forming-algebraic-notation/>

Practice: <https://corbettmaths.com/wp-content/uploads/2013/02/forming-expressions-pdf1.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/forming-expressions.pdf>

### **Section 2: Substitution**

Revision: <https://corbettmaths.com/2012/08/20/substitution-into-expressions/>

Practice: <https://corbettmaths.com/wp-content/uploads/2023/02/Substitution.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2023/02/Substitution-Answers.pdf>



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### **Topic 3: Graphs, Tables and Charts**

#### **Section 1: Tables**

Revision: <https://corbettmaths.com/2017/09/24/reading-tables/>

Practice: <https://corbettmaths.com/wp-content/uploads/2018/09/Reading-Tables-pdf-1.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2019/08/reading-tables.pdf>

#### **Section 2: Pie Charts**

Revision: <https://corbettmaths.com/2013/05/25/interpreting-pie-charts/>

Practice: <https://corbettmaths.com/2021/03/08/pie-chart-practice-questions/>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/pie-charts-answers2.pdf>

#### **Section 3: Scatter Graphs**

Revision: <https://corbettmaths.com/2012/08/10/scatter-graphs/>

Practice: <https://corbettmaths.com/2019/08/29/scatter-graphs-practice-questions/>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/scatter-graphs.pdf>



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## **Topic 1: Indices, Factors, Standard Form**

### **Section 1: Indices**

Revision: <https://corbettmaths.com/2013/03/13/laws-of-indices-algebra/>

Practice: <https://corbettmaths.com/wp-content/uploads/2013/02/laws-of-indices-algebra-pdf.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/laws-of-indices.pdf>

### **Section 2: BIDMAS**

Revision: <https://corbettmaths.com/2013/06/08/order-of-operations/>

Practice: <https://corbettmaths.com/wp-content/uploads/2022/10/Order-of-Operations.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2022/10/Order-of-Operations-Answers.pdf>

### **Section 3: Factors**

Revision: <https://corbettmaths.com/2012/08/24/factors/>

Practice: <https://corbettmaths.com/wp-content/uploads/2013/02/multiples-factors-primes-pdf.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/factors-multiples-primes.pdf>

### **Section 4: Primes**

Revision: <https://corbettmaths.com/2013/03/24/prime-numbers/>

Practice: <https://corbettmaths.com/wp-content/uploads/2018/09/Prime-Numbers-pdf.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2018/09/Prime-answers-pdf.pdf>



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## Topic 2: The Basics of Algebra

### Section 1: Like Terms

Revision: <https://corbettmaths.com/2013/12/28/collecting-like-terms-video-9/>

Practice: <https://corbettmaths.com/2019/08/22/collecting-like-terms-practice-questions/>

Solutions: <https://corbettmaths.com/wp-content/uploads/2022/10/Collecting-Like-Terms-Answers.pdf>

### Section 2: Rearranging Formulae

Revision: <https://corbettmaths.com/2013/12/23/changing-the-subject-video-7/>

Practice: <https://corbettmaths.com/wp-content/uploads/2022/06/Changing-the-Subject.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2022/06/Changing-the-Subject-Answers.pdf>

### Section 2: Expand

Revision: <https://corbettmaths.com/2013/12/23/expanding-brackets-video-13/>

Practice: <https://corbettmaths.com/wp-content/uploads/2023/01/Expanding-Brackets.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2023/01/Expanding-Brackets-answers.pdf>

### Section 2: Factorise

Revision: <https://corbettmaths.com/2013/02/06/factorisation/>

Practice: <https://corbettmaths.com/wp-content/uploads/2022/10/Factorisation.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2022/10/Factorisation-Answers.pdf>



*Your teacher will tell you which topic you should revise. Revise all the information in the topic, ready for a Quiz in lesson.*

### **Topic 3: Interpreting and Investigating Data**

#### **Section 1: Averages**

Revision: <https://corbettmaths.com/2013/12/21/the-mode-video56/>

Practice: <https://corbettmaths.com/wp-content/uploads/2022/11/Averages-and-Range-1.pdf>

Solutions: <https://corbettmaths.com/wp-content/uploads/2022/11/Averages-and-Range-Answers-1.pdf>

#### **Section 2: Pie Charts**

Revision: <https://corbettmaths.com/2013/05/25/interpreting-pie-charts/>

Practice: <https://corbettmaths.com/2021/03/08/pie-chart-practice-questions/>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/pie-charts-answers2.pdf>

#### **Section 3: Scatter Graphs**

Revision: <https://corbettmaths.com/2012/08/10/scatter-graphs/>

Practice: <https://corbettmaths.com/2019/08/29/scatter-graphs-practice-questions/>

Solutions: <https://corbettmaths.com/wp-content/uploads/2015/03/scatter-graphs.pdf>

