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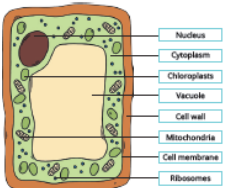
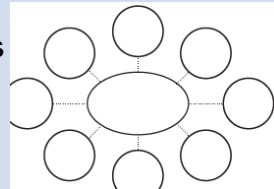






Year 8 Knowledge Organiser - Autumn 2

Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.

The knowledge is evolutionary not revolutionary. Approximately half the knowledge is new and half helps you revise. Many of the activities are changing. We hope you enjoy them.

Subject	Page Number	Subject	Page Number
Interdisciplinary Lessons	3	Geography	20
Art	6	German / Deutsch	22
Food	9	History	25
DT	13	English	27
PE	14	Maths	28
Science	16	RE	35
Computer Science	19	Music	39

Idea	Explanation
<p>Make some flash cards or PowerPoint slides. Make top trumps.</p> 	<p>Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself.</p>
<p>Plant Cell</p>  <p>Make a poster.</p>	<p>Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last!</p>
<p>Draw spider diagrams, or for the adventurous mind maps.</p> 	<p>Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall.</p>
<p>Write a song or a rap.</p> 	<p>Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising.</p>
<p>Plan a lesson</p> 	<p>If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term.</p>
<p>Write a story or comic strip.</p> 	<p>Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it.</p>
<p>Write a quiz. Design a game.</p> 	<p>Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember.</p>

ACCELERATED READER



Scan me
to take a
quiz



HOW TO TAKE A QUIZ

1. Go to the school website: www.open-academy.org.uk
2. Go to Student and then Learning Area
3. Scroll Down and Click on the Accelerated Reader logo
4. To log in:

Username: firstname.surname@open-academy.org.uk

Password: Academy

*You can take a quiz on a computer, tablet or phone.

KEY TERMS

BOOK LEVELS



Book Level: A measurement of how difficult the book is.

ZPD: Your personal reading level that reflects a range of book levels. You should read books in your ZPD most of the time.

Points: Each book has a number of points available. A book is given points based on how difficult and how long it is. You earn points by passing quizzes on books you have read.

Star Reader: A reading assessment. We use Star Reader to find out your reading age and ZPD.

Accelerated Reader: A website that allows you to take quizzes on the books you have read.

Word Millionaire: A reward given to students who read one million words or more.

Taking an Accelerated Reader Quiz

The ultimate steps to achieving amazing Accelerated Reader results.



1 Choose a book within your ZPD



- Check that it is in your ZPD range
- Look at the cover
- Read the blurb
- Look for authors you like
- Read the introduction
- Read the first page



2 Read your book



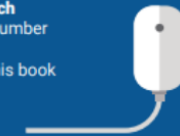
- Read for 25 minutes everyday
- Record what you're reading in your reading log



3 Search for the quiz



- Go to your Renaissance Place and **select** Accelerated Reader, type in the book's quiz number and click **Search**
- You can find the quiz number on the **AR label**
- **Select** how you read this book
- Click **Start Quiz**

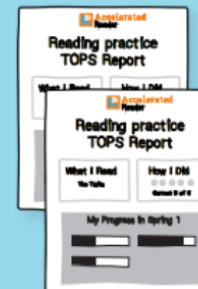


4 Take the quiz ★★★★★

- You will have 3, 5, 10 or 20 questions to answer
- Read the question and all four answers
- Ask a teacher to explain a question you don't understand.
- There are no time limits
- Click on the stars to rate the book
- Check your TOPS result



Look at your TOPS Report



100% score

This book was comfortable for you, perhaps try a book higher up in your ZPD range next time

90% score

This book was perfect for you. Perhaps try one or two book levels higher or longer next time.

80% score

This book was a little difficult for you. Perhaps choose one or two book levels lower next time.

70% score

This book was quite challenging for you. Perhaps try a book at the beginning of your ZPD range next time.

60% or below

This book was too challenging. Perhaps try a book at the beginning of your ZPD or speak to your teacher for help.

ACCELERATED READER: UNDERSTANDING YOUR TARGETS

Log in and look at the **Progress Tab** to check your targets and see your progress.

YOU HAVE 3 TARGETS EACH TERM

1. PERCENTAGE CORRECT:

This relates to your quiz scores. Read your book carefully and aim for high quiz scores to help meet this target.

To improve my Average Percent Correct:

I will use the 5 W's to review before I quiz



I will take my time when quizzing

I will make notes when reading

I will make sure my book is within my ZPD range

I will quiz as soon as I finish my book

2. POINTS:

You earn points when you pass quizzes. Read regularly (20 minutes a day) to reach your points target. Your points target is personal to you.

To meet my Points Target:

Aim for 100% to earn all the points

I will stick with a book and finish it

I will fit in extra reading time:
Before bed?
On the bus?
During lunch?

I will read fewer long books

I will read several shorter books

3. BOOK LEVEL:

Read and quiz within your recommended book level (ZPD) most of the time to reach this target. Your Book Level target is personal to you.



- » Aspiration
There are no barriers to your ambition
- » Leadership
Live your own life
- » Teamwork
Together we achieve more
- » Humility
Put others first
- » Courage
Handle your fear
- » Hard work
We need to make the most of our talents
- » Respect
Treat others as you would like to be treated yourself
- » Service
It is better to give than to receive
- » Integrity
Be true to yourself
- » Forgiveness
Forgiveness is a friendship preserver
- » Thankfulness
Appreciate others; appreciate what you have
- » Perseverance
Never give up



Hard Work and Perseverance



'I beg you take courage; the brave soul can mend even disaster.'
Catherine the Great 'Disturb us Lord, when we are too well pleased with ourselves'-the start of a prayer that could be explored, attributed to Sir Francis Drake, believed to have been written by him before setting sail from Portsmouth in 1577. The journey would lead to his knighthood and fame as the second person ever to circumnavigate the globe.

'Courage is not the absence of fear, but rather the assessment that something else is more important than fear.' Franklin D. Roosevelt

"May your choices reflect your hopes, not your fears." Nelson Mandela
(This was explored by the Archbishop of Canterbury in the first National Assembly, broadcast on April 30th and it can be found and listed to again on the Oak National Academy site)

Have you ever been busy with work or a task and, having got through it all, then found the anti-climax afterwards even harder to deal with?

Following a dramatic confrontation with the prophets of Baal, Elijah found himself in a literal and spiritual wilderness. None of us are immune to bodily, emotional and spiritual tiredness. The threats of those who seek to do us harm, get to us. We feel negative about ourselves, about our circumstances, and about what might happen in the future. We get depressed. We doubt God, and feel that we have failed God. We might even feel that our lives are no longer worth living. Life seems both dark and hopeless. This is not about lack of faith.

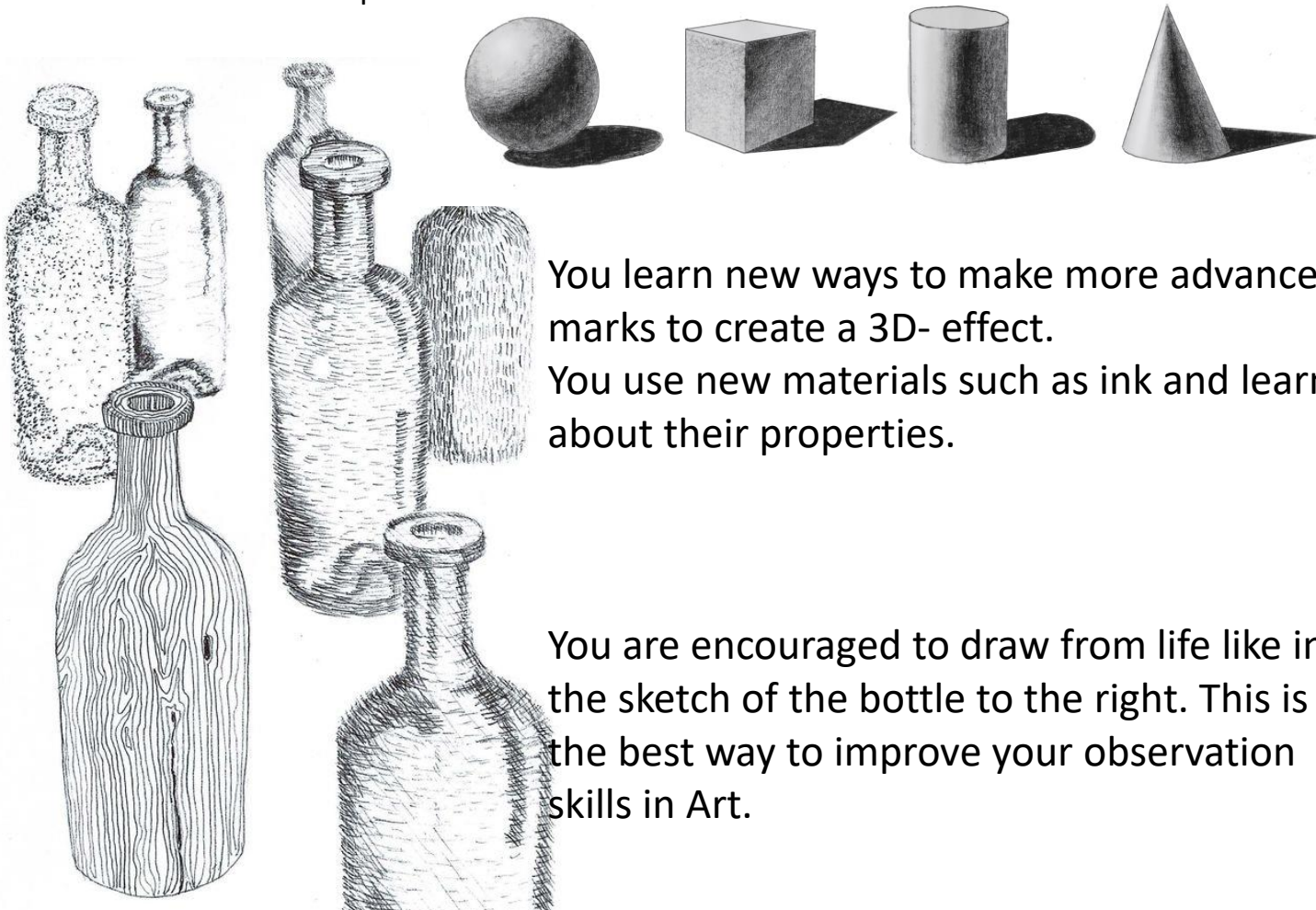
Elijah's response is honest and leads him to meet with God not in dramatic events, but in a place of sheer silence (verse 12). However active and enthusiastic we may be in God's service, we all have our limits. When we reach these limits, are we able to encounter God in the silence to which they lead us?

Then he was afraid; he got up and fled for his life, and came to Beer-sheba, which belongs to Judah; he left his servant there. But he himself went a day's journey into the wilderness, and came and sat down under a solitary broom tree. He asked that he might die: 'It is enough; now, O Lord, take away my life, for I am no better than my ancestors.'

1 Kings 19: 3-4

Year 8 Art Knowledge Organiser - Autumn Term:

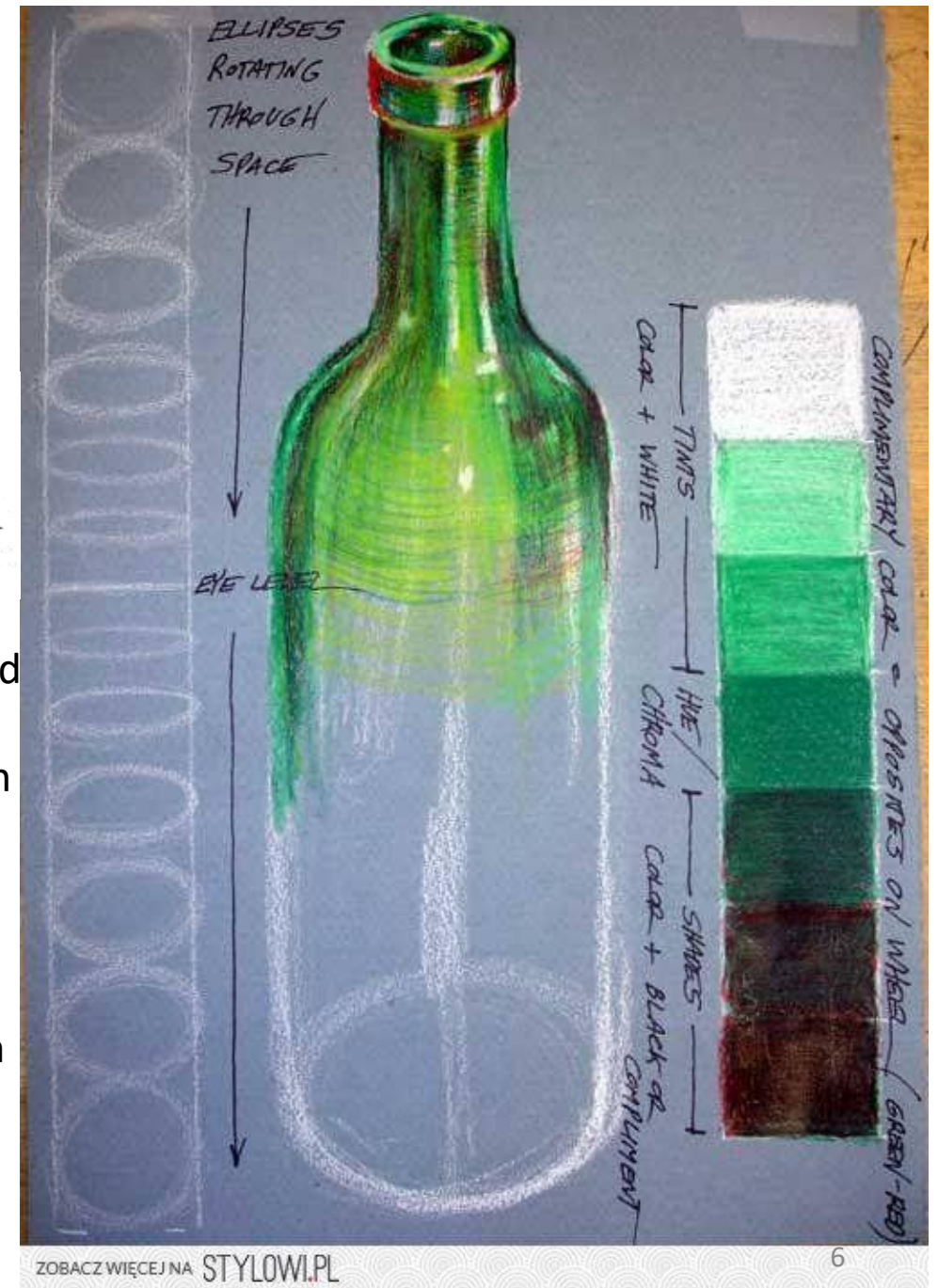
- At the start of Year 8 we do a series of lessons reminding students of the basic formal elements of Art such as **TONE, FORM, LINE**....etc... See next page for full breakdown of the art elements.
- You continue your learning on observational drawing and using tone to show 3D form. See example below.....



You learn new ways to make more advanced marks to create a 3D- effect.

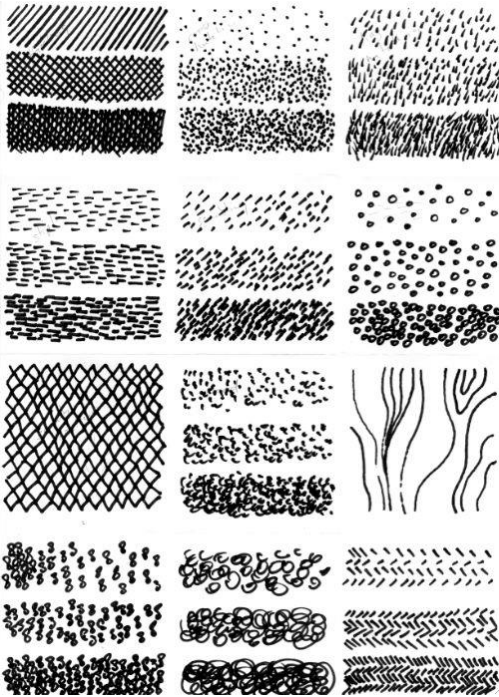
You use new materials such as ink and learn about their properties.

You are encouraged to draw from life like in the sketch of the bottle to the right. This is the best way to improve your observation skills in Art.



VAN GOGH:

We study the artist Vincent Van Gogh after half term in Year 8 and his use of mark making and pen and ink to inspire our own landscapes.



Choose a view from somewhere around your home - this could be:

- A view through a window
- A view through a door
- A view of your garden

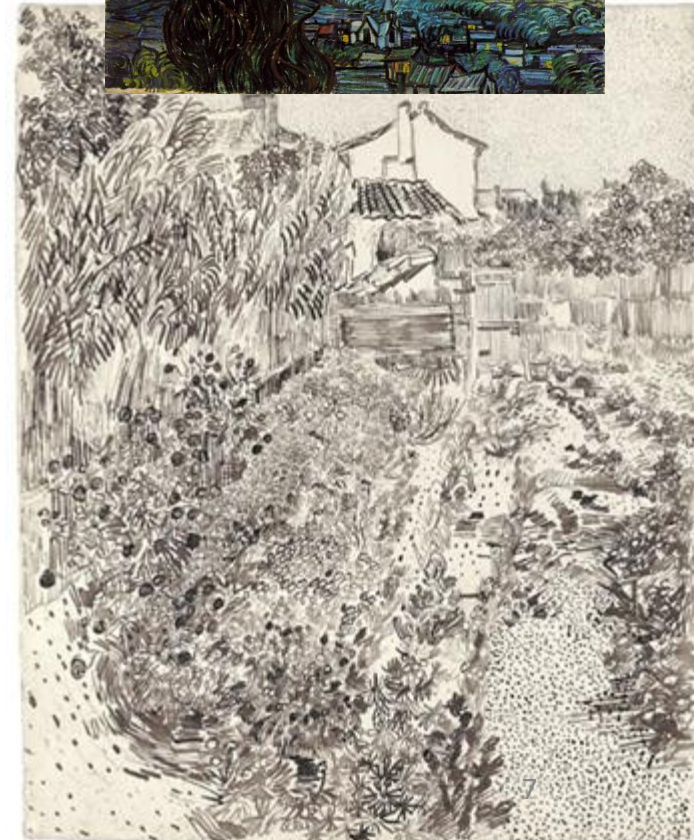
Make a detailed drawing of the scene using pencil or pen to show all the different textures and surfaces.

Try to work in a style similar to the one Van Gogh has used in this drawing of a garden.

He has used his pen to create many different marks.



- **PHOTOGRAPHS:** If you have a camera - take a series of photographs of the scene you have drawn to show the different details, print your photographs.
- **WRITTEN DESCRIPTION:** produce a written description of the scene you have drawn – shapes, colours, textures, this should be about 100 words



“Starry Night” Van Gogh



In the box below make a study of Van Gogh's 'Starry night'. Make a study of just one part of the image but try and add as much detail as you can. It is suggested that you should draw out the basic shapes of the landscape with pencil then add the detail with ink.

You should aim to spend at least 30mins on this drawing.

How would you describe 'Starry Night' to someone who can't see it?

How is this picture different from real life?

Nutrients

Macro nutrients - needed in large quantities in the diet. The three macro nutrients are: PROTEIN, CARBOHYDRATES, FAT

Micro nutrients - needed in small quantities in the diet. The two micro nutrients are: VITAMINS, MINERALS

Protein

Proteins are made up of amino acids, often referred to as the 'building blocks' of the body. Non-essential amino acids can be made by the body, however, essential amino acids can't be made by the body and we must get from the food we eat.

High biological Value (HBV) proteins contain all the essential amino acids we need and generally come from animal sources. Low biological value (LBV) proteins are missing one or more essential amino acids and generally come from plant sources.

Food sources

HBV - beef, pork, lamb, poultry (chicken, turkey, duck), fish, cheese, butter milk

LBV - beans, chickpeas, lentils, peas, nuts, seeds, found in smaller amounts in some vegetables such as spinach and broccoli.

Function

Needed for growth from childhood to adulthood and the growth of nails, hair and muscle mass, repair of muscles, tissues and organs after illness or injury and to make enzymes for digestion and antibodies to stop us getting ill.

Example exam questions:

What are the two types of fat? (2 marks)
Explain the difference between a HBV and LBV protein (6 marks)

Carbohydrates

There are two types of carbohydrates, complex and simple. They are also known as starchy (complex) and sugary (simple).

Food sources

Starchy - bread, rice, pasta, potatoes, bagels, oats, flour, cereal and some vegetables.

Simple - fruit, some vegetables, chocolate, sweets, biscuits, cakes

Function

Starchy/complex carbohydrates are digested slowly and provide long term energy.

Sugary/simple carbohydrates are digested slowly and provide short term energy

Dietary related health problems

Too much sugar can cause:

1. Weight gain (which can lead to obesity)
2. Tooth decay
3. Diabetes (your body cannot produce enough/any insulin to regulate your blood sugar levels)

Too much salt can cause:

1. High blood pressure (this can increase your risk of heart disease and a stroke).

Too much saturated fat can cause:

1. Weight gain (which can lead to obesity)
2. High cholesterol (this narrows arteries making it harder for the blood to travel around, putting you at risk of heart disease).

Fat

There are two types of fat, saturated and non saturated.

Saturated fats are classed as 'unhealthy fats', they are solid at room temperature and are generally animal based.

Unsaturated fats are classed as 'healthier fats' and are liquid or soft at room temperature and come from plant based sources.

Food sources

Animal - beef, chicken skin, processed meat (sausages, salami, pepperoni), bacon, butter, cheese, full fat milk

Plant - vegetable oils (sunflower, olive, rapeseed), avocado, nuts, seeds

Function

Keeps us warm (provides insulation), secondary source of energy, protects vital organs and bones.

Sausage rolls

Ingredients

375g pack of sausage meat
OR pack of 12 sausages
1 ready rolled puff pastry
1 egg
Salt and pepper
Mixed herbs

Optional extras:

Cheddar cheese
1 red pepper
1 red onion
2 garlic cloves
4 rashers bacon
2 celery sticks

Equipment

Frying pan, spatula, mixing bowl, chopping board, knife, grater, baking tray, egg brush and bowl, scraps bowl.

Skills

Frying, seasoning, portioning, baking.

Method:

If you are not adding any extras start from step 3:

1. Half and thinly slice any vegetables you are using, Mince your garlic and slice the bacon. Grate the cheese
2. Fry any vegetables until soft, fry the bacon until slightly crisp. Mix the fried vegetables and bacon with the sausage meat.
3. Add salt, pepper and mixed herbs to your sausage meat. Make sure you season it well.
4. Roll out your pastry and cut in half horizontally. If you are using cheese, sprinkle the cheese on the pastry.
5. Split your sausage meat in half and lay out half on each half of the pastry. Brush the edge with water, fold the pastry and seal.
6. Brush with egg and cut into bite size pieces. Place on a baking tray with baking paper and cook for 20 minutes until golden.

Extension: Try plaiting the pastry around the sausage meat for a decorative look.



Chilli-con-carne

Ingredients

250g-500g minced beef or
quorn mince

1 onion

1 pepper

1 carrot

2 garlic cloves

Can of chopped tomatoes

Can of kidney beans

1 stock cube

2 tbsp tomato puree

2 tsp chilli powder

1 tsp paprika

1 tsp ground cumin

1 tsp mixed herbs

Equipment

Chopping board, knife, grater,
frying pan, spoon, tea spoon,
table spoon.

Skills

Chopping, frying, grating,
seasoning.

Method:

1. Prepare all the vegetables; dice the onion, and pepper, grate the carrot and mince the garlic.
2. Meanwhile, heat a small amount of oil in your frying pan and fry the onions until softened, around 10 minutes. Add your garlic, peppers. Grated carrot and seasoning.
3. Leave to cook for around 5 minutes and then add your mince. Cook the mince until it is all brown (no pink).
4. Add the chopped tomatoes, 200ml of water, stock cube, drained kidney beans and 2 tbsp of tomato puree.
5. Stir well, turn down the heat and simmer for 15-20 minutes stirring occasionally

Practical Assessment 1: Marble Cake

Ingredients

100g caster sugar
100g soft margarine
2 eggs
100g self raising flour
1 x 15ml spoon coco powder

Equipment

Mixing bowl
Measuring bowl
Measuring scales
Wooden spoon
Jug
Fork

Skills

Creaming
Weighing
Baking



1. Cream the butter and sugar together until light and fluffy.



2. Crack the eggs in a jug and beat with a fork.



3. Add the egg to the mixture a little bit at a time until all the egg is mixed in.



4. Fold in the flour.

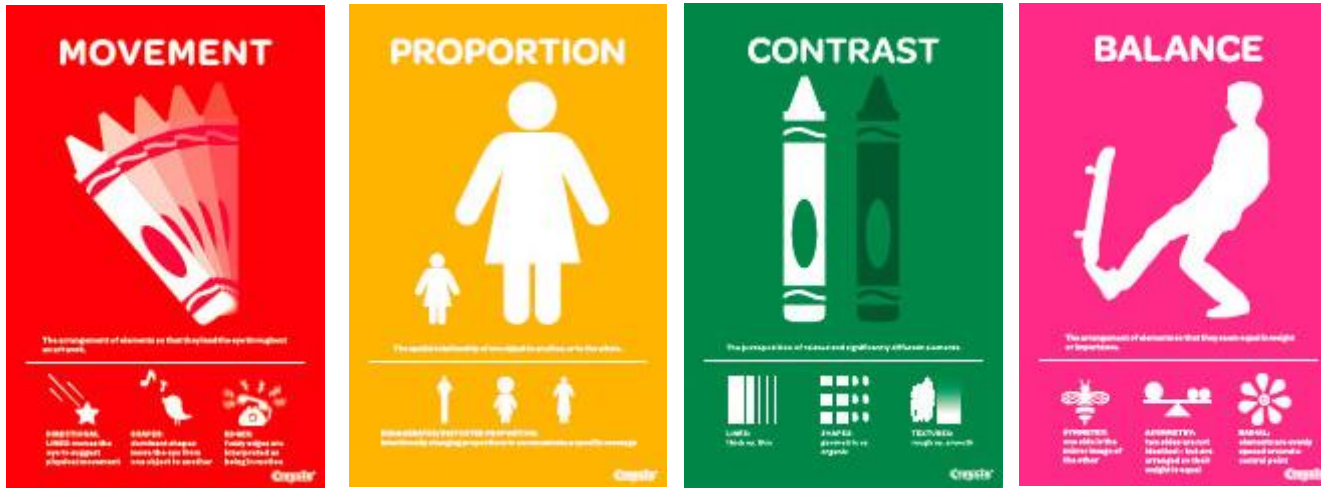


5. Place half the mixture into the tin, leaving space for the chocolate mixture.



Mix chocolate powder into the remaining cake mixture. Fill the gaps in the cake tin with the chocolate mix and swirl lightly together.

Year 8 Design and Technology



Fretsaw



Metal File



Belt Sander

These are the key principles of design we will be looking at this term when working in the Workshop. The project is to design and make a sweet dispenser.

Key Questions?

- What is the function of a sweet dispenser? Will it have any extra practical design features?
- What key aesthetics do you need to consider when designing?
- How will accurate measuring affect the quality and function of your product?

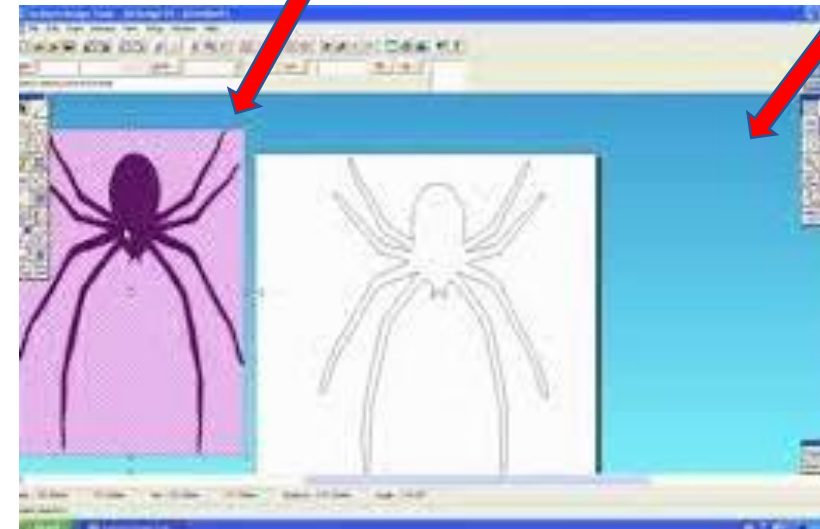
Word Bank

Material properties	Aesthetics	Measurements
Template	Product	
Analysis	Fretsaw	Sander
		Relief



Using 2D Design, you will transfer your hand drawn designs onto CAD.

Using CAD helps to present work professionally, and adds to your portfolio of skills working towards GCSE level.



Components of Physical Fitness

Flexibility

‘The **range** of motion in all **joints** of the body and the ability to move a joint **fluidly** through its complete range of movement’.

What sports would you usually see flexibility being used? E.g. Flexibility is needed in

Watch
this!



Flexibility training

Flexibility training is used to develop flexibility at a joint. This is conducted using stretching. The three stretching categories are Static, Ballistic and Proprioceptive Neuromuscular Facilitation (PNF)

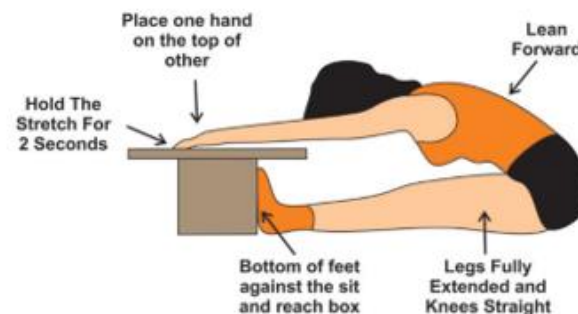
Ballistic stretching is used for warming up before exercise, static stretching is used to cool down after exercise and PNF stretching is used to stretch a muscle to its full capacity, usually used in sports injury rehabilitation.



How to test your flexibility.

Flexibility is important for success in many sports. For certain sports such as gymnastics, it is one of the most important physical attributes. In many other sports, including team sports, good flexibility is an important part of the overall fitness requirements. Good flexibility is also important for injury prevention. Stretching exercises can be used in injury rehabilitation, preparation for sport (warm up), and for recovery after exercise.

Sit And Reach Test



To complete a sit and reach test at home, all you need is a step and a ruler. With your feet flat on the step, try to reach as far as possible using the ruler to see how far you can achieve.

Using the link below or by scanning the QR code, watch the video on how to perform the sit and reach test at home.

<https://www.youtube.com/watch?v=nZgZppi8PEY>



Career Link

Working with someone to improve their flexibility is usually seeing in sports science. Careers in which you could help people improve their flexibility and overall fitness can be found in:

- Sports physiotherapy
- Personal trainer
- Sports massage and injury rehabilitation
- Sports performer



Key words and terminologies

Sit and reach	Static
Proprioceptive Neuromuscular Facilitation	Flexibility
Fitness	Stretching
Ballistic	Physiotherapy



What are flexibility exercises?

Flexibility exercises are activities that improve the ability of a joint to maintain the movement necessary for carrying out daily tasks and physical activity.

Examples of flexibility activities include:

Stretching
Yoga
Tai chi
Pilates

What are the benefits of flexibility activities?

Muscle-strengthening activities help maintain the ability to perform everyday tasks and slow down the rate of bone and muscle loss associated with ageing.

Health professionals believe that improving your flexibility can improve your posture, reduce aches and pains, and lower your risk of injury.

Good flexibility can also help you to continue carrying out everyday tasks.

How often should I do flexibility exercises?

It's a good idea to do muscle-strengthening activities that work all the major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms) on 2 or more days a week.

Use the link below or scan the QR code to take part in some flexibility exercises with Joe Wicks.

<https://www.youtube.com/watch?v=SfXX1CkIXDE>



Chemical changes (chemist)

Keyword	Definition
Reaction	When reactants react to produce products
Reactants	The chemicals that are reacting to produce a chemical reaction
Products	The chemicals (elements or compounds) that are made when a chemical reaction occurs
Endothermic	Reactions that take in heat
Exothermic	Reactions that give out heat
Oxidation Combustion	Reaction of other elements with oxygen Burning fuel in oxygen
Thermal Decomposition	When a substance is broken down into 2 or more products by heat

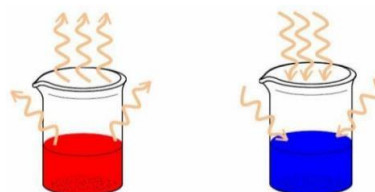
Endothermic Reactions




In an endothermic reaction, thermal energy is taken in from the surroundings, therefore there is a temperature decrease. Thermal decomposition is an example.

Exothermic Reactions

In an exothermic reaction, thermal energy is given out to the surroundings, therefore there is a temperature increase.

Combustion, oxidation and neutralisation reactions are all examples.



State	Solid	Liquid	Gas
Diagram			
Arrangement of particles	Regular arrangement	Randomly arranged	Randomly arranged
Movement of particles	Vibrate about a fixed position	Move around each other	Move quickly in all directions
Closeness of particles	Very close	Close	Far apart

STATES OF MATTER RECAP

Combustion

Combustion is another name for burning. It is an example of an exothermic reaction. There are two types of combustion – complete combustion and incomplete combustion.

Complete Combustion

Coal, oil and gas are fuels. They contain hydrocarbons (compounds of hydrogen and carbon atoms only). When these fuels burn, it reacts with oxygen in the air to produce carbon dioxide and water vapour.

Fuel + Oxygen → Carbon Dioxide + Water

Incomplete Combustion

If there is not enough oxygen in the air for complete combustion, incomplete combustion will happen instead.

This time either carbon monoxide is produced (a toxic gas which can lead to death) or carbon is produced (appears as soot and smoke which can cause breathing problems).

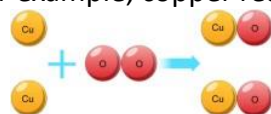
Fuel + Oxygen → Carbon Monoxide + Water
Fuel + Oxygen → Carbon + Water

Oxidation Reactions

In an oxidation reaction, a substance gains oxygen. Metals and non-metals can take part in oxidation reactions.

Metals react with oxygen in the air to produce metal oxides. For example, copper reacts with oxygen to produce copper oxide when it is heated in the air.

Copper + Oxygen → Copper Oxide
 $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$



Thermal Decomposition

Some compounds break down when heated, forming two or more products from one reactant.

Many metal carbonates can break down easily when it is heated: Copper Carbonate → Copper Oxide + Carbon Dioxide

Copper carbonate is green, copper oxide is black. We can test for carbon dioxide using limewater. Limewater is colourless, but turns cloudy when carbon dioxide is bubbled through it.

Carbohydrates (sometimes referred to as Starch) are required by our bodies as a source of energy. Example of food which carbohydrates can be found in are pasta, potatoes and rice.
Fats are needed to insulate our bodies and to make cell membranes. They also contain fat-soluble vitamins. Example of food which fats can be found in are cheese, butter, oils and margarine.

Protein are required for growth and repair. Examples of food which contain protein are meat, fish, eggs and cheese.

Fibre is important because it allows the muscles in our intestines to move the material along (called **peristalsis**) and prevents constipation. Fibre is not digested in our diet. Examples of food which contain fibre are wholemeal products e.g. bread, fruit and vegetables.

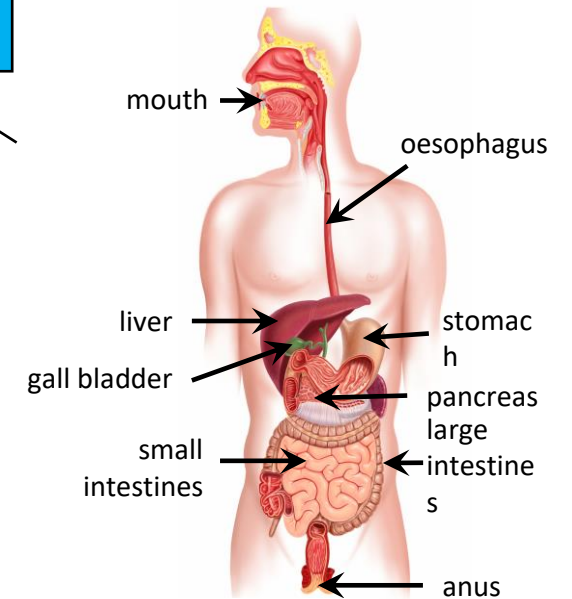
Minerals - different elements, e.g. iron is used to make haemoglobin

Vitamins - different structures, e.g. vitamin C Vitamin C prevents scurvy

Water - water all chemical reactions take place in water

The human digestive system

An organ system in which organs work together to digest and absorb food.



You are what you eat

Food groups

Food tests

Sugars (glucose)	<i>Benedict's test</i>	Orange to brick red precipitate.
Starch	<i>Iodine test</i>	Turns black.
Biuret	<i>Biuret reagent</i>	Mauve or purple solution.

Benedict's Test for sugar

- Mash food up
- Put in a test tube with Benedict's solution
- Heat in a water bath

- Blue = no sugar
- Orange = sugar



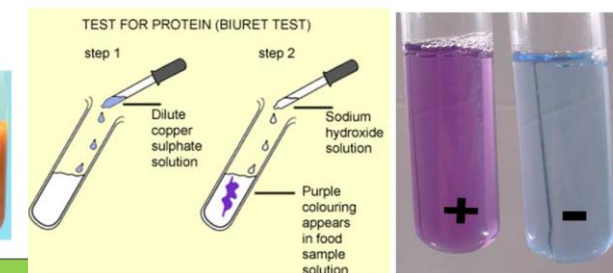
Test for carbohydrates starch.

- Orangey-brown *iodine* turns **blue-black** when it reacts with starch.

black = starch

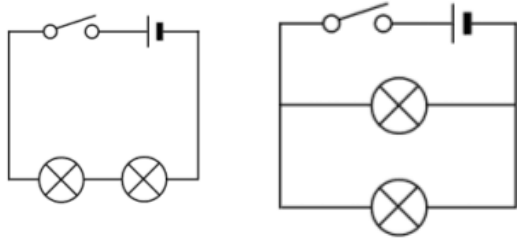


Test for Protein

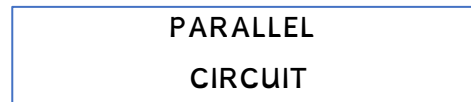


***	***	***
Name the main food groups	Use appropriate techniques to carry out a food test	State if the foods tested contain the nutrient being tested for

AMATEUR ELECTRICIAN



SERIES CIRCUIT



PARALLEL CIRCUIT

Key Terms

Series Circuit
A circuit where all the components are in the same loop.

Parallel Circuit

A circuit where the components are in different loops in the circuit.

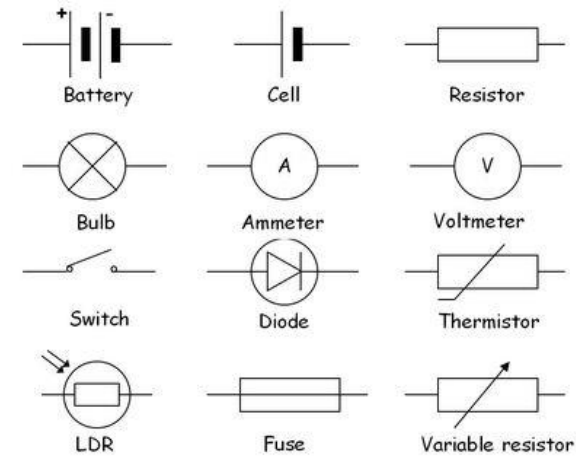
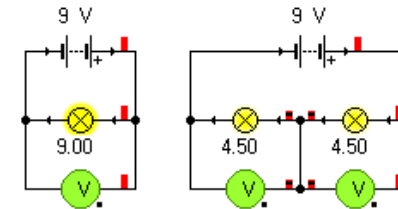
Ammeter

An electrical component that measures the size of electric current, it is connected in series in a circuit.

Voltmeter

An electrical component that measures the size of the potential difference, it is connected in parallel

	Current	Potential difference
Unit	ampere, A	volt, V
Measuring device	Ammeter in series	Voltmeter in parallel
Circuit symbol of measuring device		



Circuits can be connected in two ways:

1. Series Circuits

2. Parallel Circuits

In a series circuit all of the components are in the same loop, below is an example of two lamps in a series circuit. If either of the lamps were to break the circuit would not be complete and the light bulb would go out.

The current is the same at any point in a series circuit as current is always conserved in a circuit.

Parallel Circuits

In a parallel circuit components are in more than one loop. Lights in a house are connected in parallel, when one light bulb breaks the whole circuit is not broken so the other light bulb will stay alight.

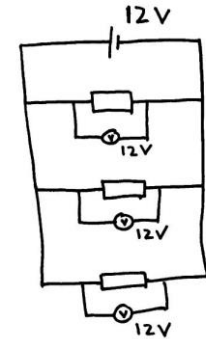
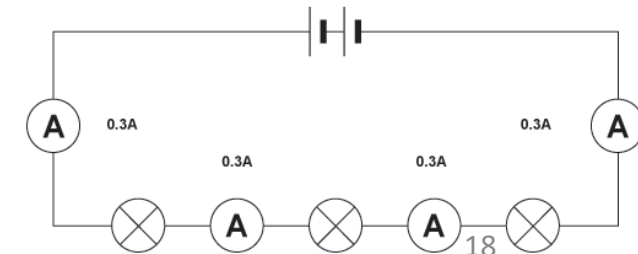
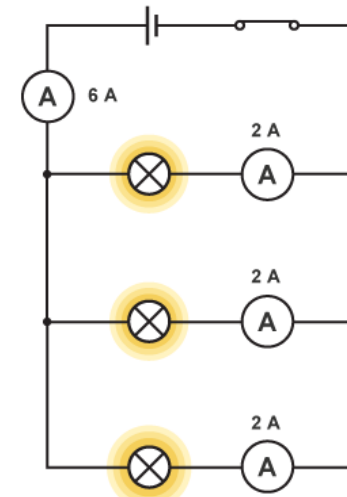
In

Parallel Circuits

In a parallel circuit components are in more than one loop. Lights in a house are connected in parallel, when one light bulb breaks the whole circuit is not broken so the other light bulb will stay alight.

In a parallel circuit the current splits at junctions, see the example. The current on the different branches of the circuit must add up to the total current. In a series circuit the current is the same all the way around the circuit

The voltmeter is connected in parallel with the component. The supply voltage is shared between components in a series circuit, so the sum of the voltages across all of the components in a series circuit is equal to the supply voltage. In a parallel circuit the voltage across each component is the same as the voltage from the power supply



Summary

Computers require input hardware, processing hardware, storage hardware and output hardware.

CPU - The Central Processing Unit or CPU is arguably the most important component of a computer. You can think of the CPU as being like the brain in a human.

Storage - stores programs and files long term, even when they are not in use. Devices such as hard drives, USB memory sticks or SD cards are used to store files such as photos, music and software applications long term.

An input device is any piece of computer hardware used to provide data to a computer system. Examples include: keyboard, mouse, scanner, digital camera and webcam.

An output device is any piece of computer hardware used to communicate the results of data that has been processed. Examples include: monitor, printer, projector and speaker.

Binary is still the language for computers Binary's 0 and 1 method is quick to detect an electrical signal's off or on state.

Binary is the most efficient way to control logic gates

Key Vocabulary

Binary	Base 2. Symbols include up of 1 and 0
Decimal	Base 10 also known as denary. Symbols include up of 0 1 2 3 4 5 6 7 8 and 9.
CPU	Central Processing Unit - the brains of the computer that processes program instructions. Also called a microprocessor.
Logic gate	Compares the state switch inputs to decide what the state at their output should be
Hardware	The physical parts of a computer system, e.g. a graphics card, hard disk drive and CD drive.
Input Device	Hardware that sends data to a computer, allowing you to interact with and control it.
Output Device	Hardware which converts information into human-readable form. It can be text, graphics, tactile, audio, and video.
Storage	Hardware on which information can be stored
Software	Software is the programs that run on a computer. Commonly called apps

Logic gates

AND Gate will only turn on if both switches are in the on position.

OR Gate—When any switch is turned on, the power is turned on

NOT Gate—A light switch.

Decimal to Binary

Converting binary to decimal
Each place is calculated to the power of 2

Binary: 1 0 1 0 1 0 1 0
Decimal: 256 + 64 + 16 = 322

Computer system

Feedback

Binary to Decimal

The Central Processing Unit or CPU is arguably the most important component of a computer. You can think of the CPU as being like the brain in a human.

Units of information

Bit	1 or 0
Byte	8 bits
Kilobyte	1,000 bytes
Megabyte	1,000 kilobytes
Gigabyte	1,000 Megabytes
Terabyte	1,000 Gigabytes.

<http://bit.ly/2Qxi9ab>





Year 8 Knowledge Organiser: Natural Hazards



Topics covered

- ✓ Types of natural hazards
- ✓ The structure of the earth
- ✓ Tectonic plates
- ✓ Plate boundaries
- ✓ Earthquakes and volcanoes distribution
- ✓ Earthquake effects
- ✓ Earthquake management
- ✓ Volcano types
- ✓ Effects of volcanoes
- ✓ Managing volcanoes

Key Ideas:

1. I can describe types of natural hazards
2. I can describe the movement of tectonic plates
3. I can describe earthquakes and volcanoes effects
4. I can explain how the dangers of earthquakes and volcanoes can be managed

Skills

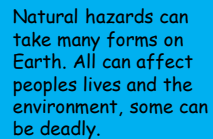
- ❑ To investigate earthquake frequency using **USGS** website
- ❑ To use mapping to identify earthquake and volcano distribution (spread)
- ❑ To read written accounts of earthquakes
- ❑ To classify earthquake effects
- ❑ To use **ICT/MS Office** to present to my class on an earthquake 'proof' design building

Places and Environments

- ❖ Edinburgh Castle
- ❖ Loch Ness
- ❖ Iceland
- ❖ San Andreas Fault
- ❖ Himalayas
- ❖ Ring of Fire
- ❖ Yellowstone NP

Key Terms Used in this Unit

- ❑ Geophysical hazards
- ❑ Atmospheric hazards
- ❑ Core/Mantle/Crust
- ❑ Destructive/Constructive/Conservative/Collision plate boundary
- ❑ Seismograph
- ❑ Richter Scale
- ❑ Mercalli Scale
- ❑ Aftershock
- ❑ Magma/Lava
- ❑ Pyroclastic Flow
- ❑ Composite volcano
- ❑ Shield volcano
- ❑ Volcanic Bomb
- ❑ Exclusion Zone
- ❑ Shock absorbers
- ❑ Liquefaction

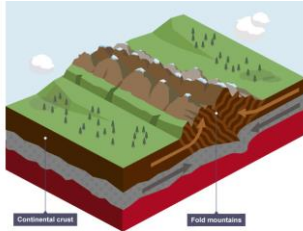


Try to list as many types of natural hazard

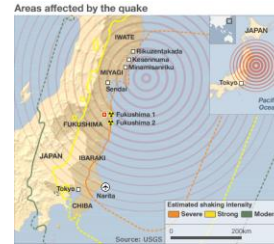
CHALLENGE – Why are some more deadly than others?



Try to list as many mountain ranges as possible
CHALLENGE – How are these used by people?



The epicentre is where the shockwaves hit the surface. The **focus** (or origin) is deep in Earth's crust.

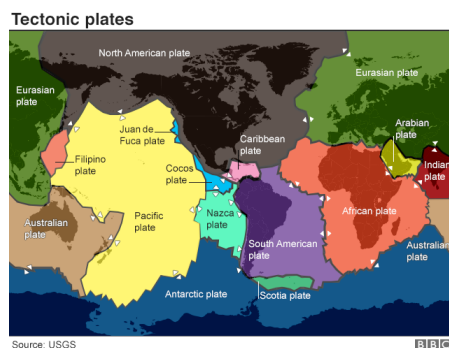


Shockwaves are sent outwards by an earthquake through the rock. These are known as '**seismic waves**'. Their strength can be measured on the **Richter Scale**.

Where plates move under seas they can create similar waves or **tsunami's** (huge waves followed by high levels of water)

Name 5 different locations on Earth that have had earthquakes in the past 5 years.
CHALLENGE – How can earthquakes be measured?

Several are breaking apart or colliding to create earthquakes and volcanoes.

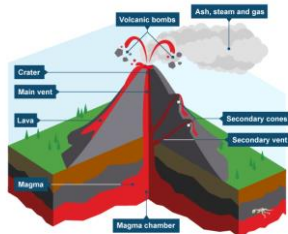


What plate is the UK on? Where is our nearest boundary?
CHALLENGE – Which plates are moving apart and which together?

Poorer countries can take decades to recover and may require International help.



List 10 effects on peoples lives
CHALLENGE – Why do poorer countries
(developing) cope less than richer countries?



Most volcanoes have similar characteristics.

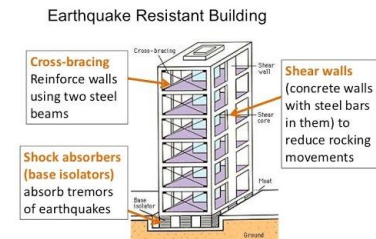
What are the different volcano shapes like? Where is our nearest **'active'** volcano?
CHALLENGE – Which volcanoes are the most deadly and why?

Natural hazards like hurricanes, earthquakes and volcanoes can all affect people's lives and change the environment. For some volcanoes can actually be a blessing, for example in Italy providing **fertile soil** (good for growing) or **'geothermal energy'** (hot rock energy) in Iceland.



What are the arguments for and against living near volcanoes?
CHALLENGE – How do people in volcanic areas ‘manage’ their lives so that they are safer?

A number of techniques can be used to make buildings 'earthquake proof'.



Can you design an earthquake proof building?

CHALLENGE – How would you manage an entire city after an earthquake?

Module 5: Gute Reise! (Have a Good Trip!)

Here is the vocabulary you will need for Module 5.

Remember to listen to the German by copying and pasting the blue codes next to the speaker icons [here](#). The full address is: <https://www.activeteachonline.com/view>

In der Stadt • In town	
Es gibt ...	There is ... / There are ...
Es gibt ein/eine/einen ...	There is/are a ...
Es gibt kein/keine/keinen ...	There isn't/aren't ...
in der Nähe von ...	near to
in der Nähe ...	nearby
der Bahnhof(-e)	railway station(s)
der Imbiss(-e)/ die Imbissstube(-n)	snack stand(s)
die Kegelbahn(-en)	bowling alley(s)
das Kino(-s)	cinema(s)
die Kirche(-n)	church(es)
der Marktplatz(-e)	market square(s)
der Park(-s)	park(s)
das Schloss(-er)	castle(s)
das Schwimmbad(-er)	swimming pool(s)
die Eisbahn(-en)	ice rink(s)
der Fischmarkt(-e)	fish market(s)
das Kindertheater(-)	children's theatre(s)
der Radweg(-e)	cycle path(s)
das Sportzentrum (die Sportzentren)	sports centre (sports centres)
der Stadtpark(-s)	city/town park(s)
der Wasserpark(-s)	water park(s)



EH6VNSDY

In this Module you will learn how to:

- talk about what there is / isn't in a town
- Buy souvenirs
- Buy snacks and drinks
- talk about holiday plans
- Understand longer spoken texts.

Keep practising your German vocabulary on www.quizlet.com

• Either:

click on this link:

https://quizlet.com/_8iewzt?x=1qqt&i=25q2il

• Or:

use your class link to go directly to your Quizlet class.

Souvenirs • Souvenirs

der Aufkleber	sticker
das Freundschaftsband	friendship bracelet
die Kappe	(baseball) cap
der Kuli	biro
das Kuscheltier	cuddly toy
die Postkarte	postcard
der Schlüsselanhänger	key ring
die Tasse	mug/cup
das Trikot	(football) shirt
Wie viel kostet ...?	How much does ... cost?
Wie viel kostet das?	How much does it cost?
Es kostet €16.	It costs 16 Euros.



DOMB0u9e



www.textivate.com

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Password: firstsecond123

Go to 'my resources' to find your work.

Verkaufsgespräch • Sales conversation

Ich gehe einkaufen.	I am going shopping.
Ich möchte ...	I would like ...
Ich möchte ... kaufen.	I would like to buy ...
Haben Sie ...?	Do you have ...?
Kann ich dir helfen?	Can I help you?
Sonst noch etwas?	Anything else?
alles zusammen	all together



KzQh406W

Snacks und Getränke kaufen • Buying snacks and drinks

die Bratwurst	fried sausage
der Hamburger	hamburger
die Pizza	pizza
die Pommes	chips
der Salat	salad
das Eis	ice cream
die Cola	cola
das Mineralwasser	mineral water
der Tee	tea
das Fleisch	meat
der Ketchup	ketchup
die Mayo(nnais)e/ Majonäse	mayo(nnais)e
der Senf	mustard
Ich möchte einmal/ zweimal/dreimal ...	I would like one/two/three ...
Ich hätte gern ...	I would like ...
Das macht €8.	That's €8.
Ich esse ... gern.	I like eating ...
Ich trinke ... gern.	I like drinking ...



Ai0Y2qJX

In den Sommerferien

• During the summer holidays

Was wirst du machen?	What will you do?
Ich werde ...	I will ...
Wir werden ...	We will ...
klettern	climb
im Meer schwimmen	swim in the sea
rodeln	toboggan
im See baden	bathe in the lake
segeln	sail
an den Strand gehen	go to the beach
tauchen	dive
wandern	hike
windsurfen	windsurf
Was kann man dort machen?	What can you do there?
Man kann ... besuchen.	'One'/People/ You can visit ...
Die Stadt ist bekannt für ...	The town is well known for ...
Ich werde (eine Woche) bleiben.	I will stay (for a week).



WrkzCZgE

Read the Strategy Box for ideas to link sounds and spelling.

Oft benutzte Wörter

• High-frequency words

am Montag	on Monday
am Dienstag	on Tuesday
am Mittwoch	on Wednesday
am Donnerstag	on Thursday
am Freitag	on Friday
am Wochenende	at the weekend
sehr	very
nicht sehr	not very
ziemlich	quite
immer	always
nicht immer	not always
oft	often
nicht oft	not often
nie	never
alles	everything
dort	there
teuer	expensive



smdDs08S

Strategie 5

Using your key phonics words to make links

You learned the key sounds of German in Chapter 1 (page 8). One good strategy for remembering new words is to group them together with others with the same sound-spelling pattern. Here are some from Chapter 5:



Freund → Deutschland



Biene → Kuscheltier



Sterne → Imbissstube, Strand



Wildwassersport → Mineralwasser, ich werde, wandern, windsurfen



Schlange → Schloss, Schwimmbad, Schlüsselanhänger, schwimmen

Look back at the Wörter pages from Chapters 1–4 and add to your lists.



Some words have more than one key phonics sound. How many can you spot in the examples above? For example, *Kuscheltier*.

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Go to 'myresources' to find your work.

Key words	
Reformation	The action or process of changing something
The English reformation	the Church of England breaks away from the authority of the Pope and the Roman Catholic Church
The 'middle way'	1559 Elizabeth I's religious settlement which decided on a 'middle way': Protestant but tolerant of Catholicism
Vagabond/sturdy beggar	A person who wanders from place to place without a home or job
1601 Poor Law	Placed paupers into four groups, each group was treated differently
Class	A group of people with the same economic or social status
Familiar	A demon, in the form of an animal that accompanies a witch
Superstitious	Someone who believes in omens and ghosts
Age of Reason	Also known as the Enlightenment, the period during the 1600s and 1700s when people began to explore the world and make new discoveries

The Elizabethans passed Poor Laws to give help to the sick and the old but there were harsh punishments for 'sturdy beggars'; Physical mutilation and execution by hanging!

Factfile



Name: Matthew Hopkins **Address:** Lives in Essex
Work details: Began career as a witch finder in 1645.

Methods used:

- Strip search of accused to look for devil's marks.
- Keeps accused awake till they confess.
- The water test: ties the accused up and lowers into a river or pond. If she lives, she is guilty.
- Encourages local people to make accusations of witchcraft.
- Payment:**
 - Fee paid for survey of possible witches.
 - Fee to be paid for each witch found.

Many people, mainly women, were accused and executed for witchcraft in the 16th and 17th centuries. People struggled to understand the world around them. Religious and superstitious beliefs influenced ideas that "witches" were to blame for bad things that happened to them

During the 16th century the living standards of many people improved. Many farmers were able to sell their produce at higher prices than before and could afford to rebuild their farmhouse and even amongst those less well off, the fear of famine was less. By 1600 this had changed and there were more poor people than ever before:

- Population: This went up quickly and there was less food
- Inflation: Prices started to go up
- Unemployment: There were less jobs as the farming industry changed from crop to sheep farming
- Henry VIII had shut the monasteries so there was less help for the poor

This led to increased begging and a divide between the 'impotent poor' (deserving poor; wanted to work but couldn't as too old or sick) and those who were poor and were turning to crime (the Tudors nicknamed these people Vagabonds)

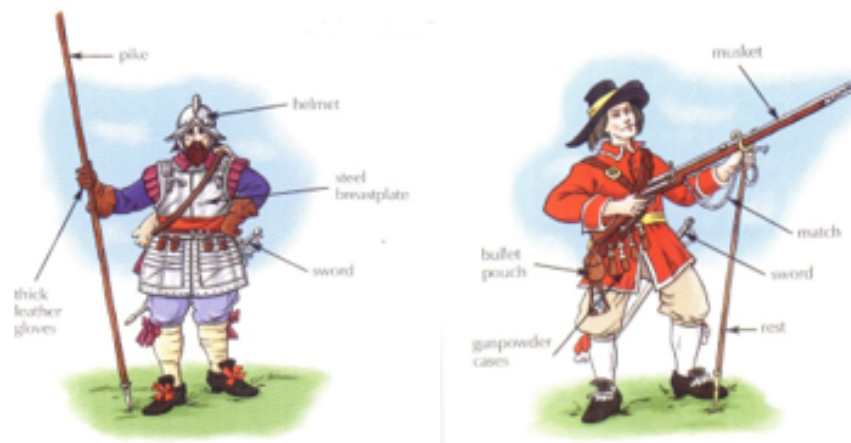
Key Scientists: William Harvey, Robert Hooke, Isaac Newton, Christopher Wren, Robert Boyle

Did Science change views about witches?

Yes	No
New discoveries & Inventions Less trouble between religious groups Information and news spread more easily People are less superstitious	People still superstitious Religion was still very important People still believed in witchcraft

Key words	
Roundhead	Nickname for the parliamentary soldiers (from their haircut)
Cavalier	Nickname for the soldiers in the royalist army
New Model Army	New and improved parliamentary army with excellent training and character
Treason	The crime of betraying your country
Puritan	Protestants who wanted to 'purify' the Church of England from its Catholic ways
Catholic	Christians who believed that the Pope, in Rome, was the head of the church
Protestant	Christians who refused to accept the Pope as the head
Ship Tax	A sum of money, introduced by Charles I paid for people living by the sea
Royalist	A supporter of the King during the civil war
Parliamentarian	A supporter of parliament during the civil war

Pikeman and Musketeer



Key battles: Edgehill (1642) Marston Moor (1644), Naseby (1645)

Between 1642 and 1646 King Charles I fought a civil war against his enemies in Parliament. He lost in 1646 and was executed by beheading in 1649. Cromwell led England as a Republic between 1653 and 1658. The Monarchy was restored in 1660.

Causes of the English Civil War:

- His marriage to the French Princess, Henrietta Maria, worried Protestants about another Civil War (France was a huge Catholic superpower)
- Soon there were religious changes such as to the prayer book which angered Protestants
- Charles spent money on wars with Scotland and Irish rebels. Taxes were raised unfairly and the wars were lost
- Wealthier members of society (Lords and Rich Gentlemen) had more political rights than others
- Charles showed little respect for Parliament; shutting it down when it would not approve his requests for money or laws which were not in the favour of the people (Ship Tax)

Oliver Cromwell as Lord Protector

A Harsh & Unpopular Ruler (Villain)

Cromwell's actions in Ireland, particularly at Drogheda, are still remembered for their cruelty and bloodshed

Popular entertainment and hobbies such as gambling, the theatre and even makeup were banned

Most popular aspects of Christmas were banned!

A Tolerant Defender of Democracy (Hero)

Cromwell was surprisingly tolerant of other religions and was the first ruler to allow Jews to re-settle

Prevented the King from destroying Parliament (although he eventually got rid of it himself!)

Built England into a formidable military power

Vocabulary to learn

Conscious
Deliberate
Report
Summarise
Compare
Inference
Associate
Child labour
Convey
Emphasise
Inflict
Emotive
Gallows

Useful site links for understanding format and language for this unit

<https://www.bbc.co.uk/newsround>

<https://www.independent.co.uk/>

<https://www.bbc.co.uk/news>

Structure analysis - methods:

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
 - inside to outside (and vice versa)
 - focus
 - time
 - topic
 - setting/place
 - mood/atmosphere
 - description to dialogue (and vice versa)

Language analysis Checklist:

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings
- Aim higher: layers of meaning

Evaluate

weigh up, form a judgement

This question asks you to **evaluate** the **extent** to which you agree with a given statement about a text.

how much

You will need to consider:

- The impressions (**opinions**) you have of the text in relation to the statement
- The methods the writer has used to create these impressions
- How the particular methods create these impressions

Words/phrases
Linguistic devices
Structural features
Sentence forms

Sentence Form	Definition	Example
Fragment sentence	An incomplete idea.	<i>Rolling thunder.</i>
Simple sentence	Contains one complete idea in an independent clause.	<i>The lightning flashed.</i>
Compound sentence	Contains two independent clauses linked by a conjunction or a semi-colon.	<i>The lightning flashed and the rain fell. The lightning flashed; the rain fell.</i>
Complex sentence	Contains an independent clause and at least one dependent clause.	<i>Despite the thunder and lightning, there was no rain.</i>

Literary devices and word class

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass danced in the wind*
- Simile – as/like/as if – *he was like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds – *really rather raucous*
- Lists – to emphasise many reasons
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote **neatly**
- connotations of words – associations – night-time = mystery



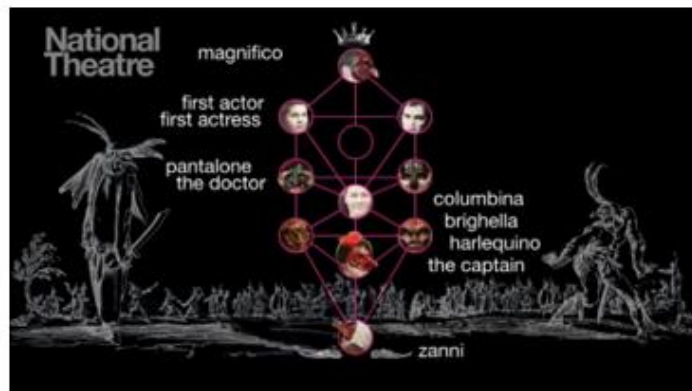
Year 8 Drama Topic 1

Knowledge Organiser –

Commedia dell'arte

Commedia dell'arte began in Italy in the 16th century. It was a popular form of street theatre based on improvised scenarios between stock characters. These characters were universal types of masters, servants and lovers.

Commedia dell'arte is a very physical form as many of the characters wear masks so their facial expressions can't be seen by the audience. As a result, actors must rely more on their bodies to be understood.



Stock Character(s)	Status	Costume
Arlecchino/ Harlequino	Servant (sometimes to two masters)	Colourful tight-fitting jacket and trousers
Il Dottore/ The doctor	Head of the household	Black scholarly robe
Il Capitano	Indigent loner	Military uniform
Innamorati	High-class hopeless lovers	Nicely dressed on par with the time
Pantalone	Older wealthy man	Dark capes and red trousers
Colombina	Perky maid / servant	Can be colourful on par with Arlecchino or black and white



The plots were arguably vehicles for a number of comic routines known as lazzi.

These were either based on an individual's habits or on interactions between particular characters that the audience would come to expect.

The lazzi were hugely, if not entirely dependent on movement, such as Arlecchino catching and eating a fly in a stylised way, pretending to be a statue as a way of hiding, or getting beaten round the head by his master.

YEAR 8 - REPRESENTATIONS... Working in the Cartesian plane

What do I need to be able to do?

By the end of this unit you should be able to:

- Label and identify lines parallel to the axes
- Recognise and use basic straight lines
- Identify positive and negative gradients
- Link linear graphs to sequences
- Plot $y = mx + c$ graphs

Keywords

Quadrant: four quarters of the coordinate plane.

Coordinate: a set of values that show an exact position.

Horizontal: a straight line from left to right (parallel to the x axis)

Vertical: a straight line from top to bottom (parallel to the y axis)

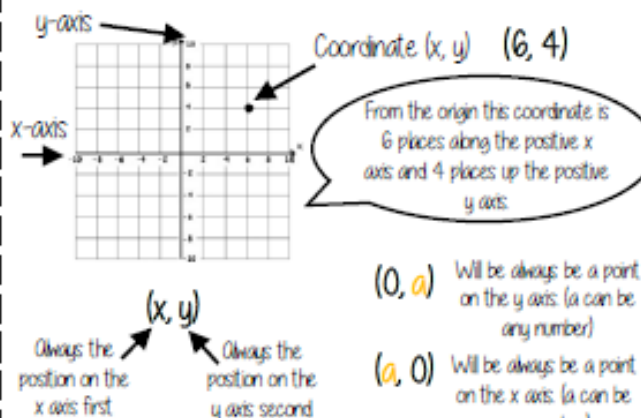
Origin: (0,0) on a graph. The point the two axes cross

Parallel: Lines that never meet

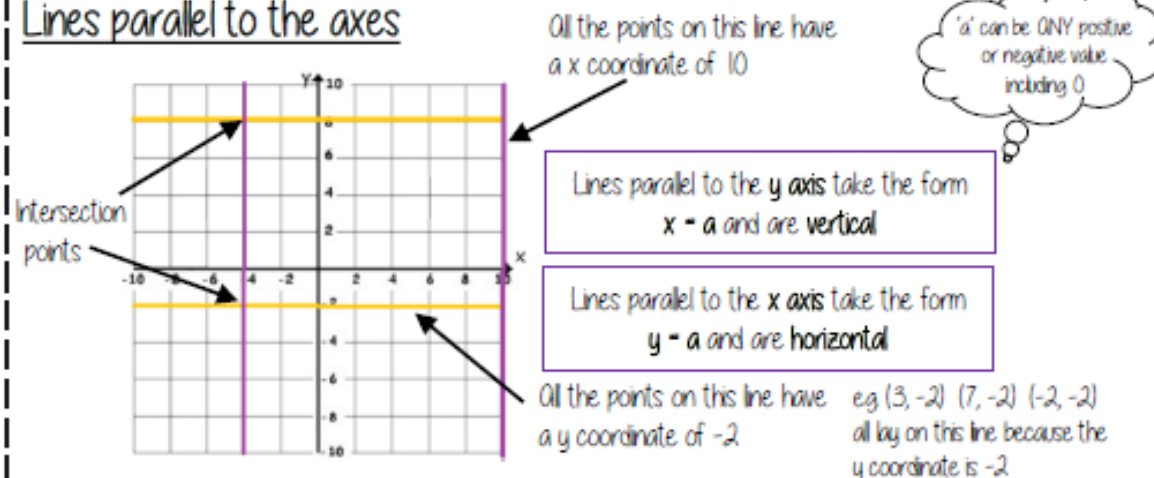
Gradient: The steepness of a line

Intercept: Where lines cross

Coordinates in four quadrants



Lines parallel to the axes



Plotting
Coordinates



Midpoint of
a Line



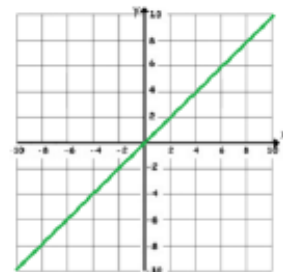
Lines
parallel to
the y-axis



Lines
parallel to
the x-axis



Recognise and use the line $y=x$



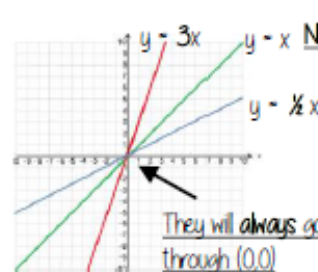
This means the x and the y coordinate have the same value.

Examples of coordinates on this line: $(0, 0)$ $(-3, -3)$ $(8, 8)$

The axes scale is important – if the scale is the same $y = x$ will be a straight line at 45°

Recognise and use the lines $y=kx$

The value of k changes the steepness of the line



Note: $y = -x$ is the same as $y = -1x$

The bigger the value of k the steeper the line will be.

The closer to 0 the value of k the closer the line will be to the x axis.

They will always go through $(0,0)$

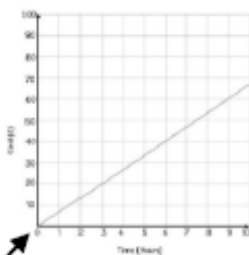
xy tables



Gradient



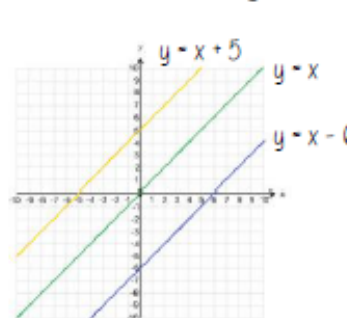
Direct Proportion using $y=kx$



The line must be straight to be directly proportional – variables increase at the same rate k

Direct proportion graphs always start at $(0,0)$ as they are describing relationships between two variables

Lines in the form $y = x + a$



All the lines are parallel because the gradients are the same

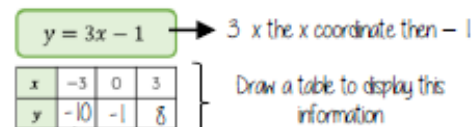
$$y = x + a$$

This is the line $y=x$ when the y and x coordinate are the same

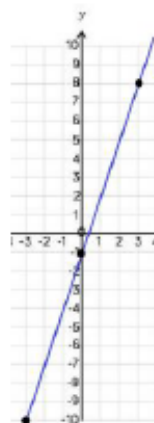
This shows the translation of that line.
eg $y = x + 5$ is the line $y=x$ moved 5 places up the graph

5 has been added to each of the x coordinates

Plotting $y = mx + c$ graphs



This represents a coordinate pair $(-3, -10)$

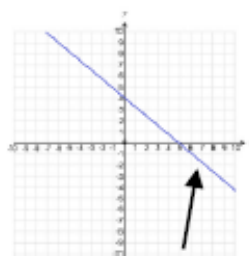


You only need two points to form a straight line

Plotting more points helps you decide if your calculations are correct (if they do make a straight line)

Remember to join the points to make a line

Lines with negative gradients



Any straight-line graph with a negative x value has a negative gradient

Eg $y = -2x$
 $y = -x$ $y = x = 12$

Direction of all negative gradients

A job based on line graphs:

A pilot

There are several types of math that pilots need to familiarize themselves with and be able to apply. Basic arithmetic, geometry, trigonometry, interpolation, and mental math are all part of being a pilot. When you are landing or taking off, if there is a wind which is perpendicular to the runway, this is referred to as a crosswind. A crosswind alters the aerodynamics of your aircraft and makes landings and takeoffs more difficult. Too strong a crosswind can be dangerous, so it is important to calculate the crosswind and determine if it is safe to takeoff or land under those conditions and with your skillsets

$Y=mx+c$



Proportion



YEAR 8 - REPRESENTATIONS...

Representing Data

What do I need to be able to do?

By the end of this unit you should be able to:

- Draw and interpret scatter graphs
- Describe correlation and relationships
- Identify different types of non-linear relationships
- Design and complete an ungrouped frequency table
- Read and interpret grouped tables (discrete and continuous data)
- Represent data in two way tables

Keywords

Variable: a quantity that may change within the context of the problem

Relationship: the link between two variables (items). E.g. Between sunny days and ice cream sales

Correlation: the mathematical definition for the type of relationship.

Origin: where two axes meet on a graph

Line of best fit: a straight line on a graph that represents the data on a scatter graph

Outlier: a point that lies outside the trend of graph

Quantitative: numerical data

Qualitative: descriptive information, colours, genders, names, emotions etc.

Continuous: quantitative data that has an infinite number of possible values within its range.

Discrete: quantitative or qualitative data that only takes certain values.

Frequency: the number of times a particular data value occurs.

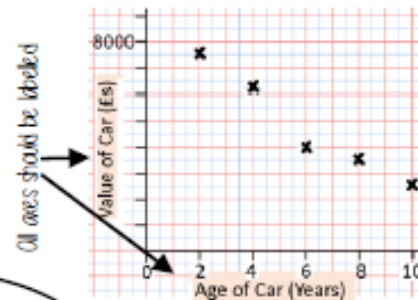
Draw and interpret a scatter graph.

Age of Car (Years)	2	4	6	8	10
Value of Car (£)	7500	6250	4000	3500	2500

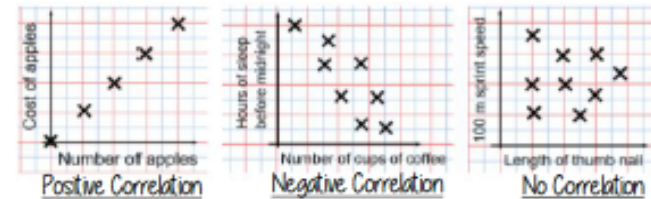
- This data may not be given in size order
- The data forms information pairs for the scatter graph
- Not all data has a relationship

The link between the data can be explained verbally

"This scatter graph show as the age of a car increases the value decreases"



Linear Correlation



As one variable increases so does the other variable

As one variable increases the other variable decreases

There is no relationship between the two variables

Scatter
Graphs



Frequency
Trees



Two-Way
Tables



Frequency
Tables and
Tallies

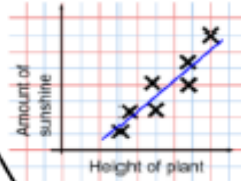


The line of best fit

The Line of best fit is used to make estimates about the information in your scatter graph

Things to know

- The line of best fit **DOES NOT** need to go through the origin (The point the axes cross)
- There should be approximately the same number of points above and below the line (It may not go through any points)
- The line extends across the whole graph



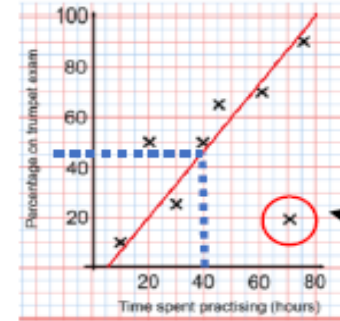
It is only an estimate because the line is designed to be an average representation of the data

It is always a straight line.

Using a line of best fit

Interpolation is using the line of best fit to estimate values inside our data point.

e.g 40 hours revising predicts a percentage of 45



Extrapolation is where we use our line of best fit to predict information outside of our data

****This is not always useful — in this example you cannot score more than 100%. So revising for longer can not be estimated****

This point is an "outlier" It is an outlier because it doesn't fit this model and stands apart from the data

Ungrouped Data

The number of times an event happened

The table shows the number of siblings students have. The answers were 3, 1, 2, 2, 0, 3, 4, 1, 1, 2, 0, 2

Number of siblings	Frequency
0	2
1	3
2	4
3	2
4	1

Best represented by discrete data (Not always a number)

2 people had 0 siblings. This means there are 0 siblings to be counted here

0

$2 + 2 + 2 + 2$ OR $2 \times 4 = 8$

$3 + 3$ OR $3 \times 2 = 6$

2 people have 3 siblings so there are 6 siblings in total

OVERALL there are $0 + 3 + 8 + 6 + 4$
Siblings = 21 siblings

Grouped Data

If we have a large spread of data it is better to group it. This is so it is easier to look for a trend. Form groups of equal size to make comparison more valid and spread the groups out from the smallest to the largest value.

Discrete Data
The groups do not overlap

Cost of TV (£)	Tally	Frequency
101 - 150	THL II	7
151 - 200	THL THL I	11
201 - 250	THL	5
251 - 300	III	3

We do not know the exact value of each item in a group — so an estimate would be used to calculate the overall total (Midpoint)

Continuous Data
To make sure all values are included inequalities represent the subgroups

x	Weight(g)	Frequency
40 < x ≤ 50		1
50 < x ≤ 60		3
60 < x ≤ 70		5

e.g this group includes every weight bigger than 60kg up to and including 70kg

Representing data in two-way tables

Two-way tables represent discrete information in a visual way that allows you to make conclusions, find probability or find totals of sub groups

	Squares	Circles	Total
Green	2	3	5
Red	2	1	3
Total	4	4	8

Using your two-way table

To find a fraction
e.g What fraction of the items are red? 3 red items
but 8 items in total = $\frac{3}{8}$

Interleaving: Use your fraction, decimal percentage equivalence knowledge

A job based on data:

Statistician

Statisticians use data—raw numbers and results—to form conclusions, make predictions, and solve problems. Statistics is one of the fastest growing fields and offers a huge number of options for careers. You can probably find a job in almost anything that interests you. Google, for example, uses statistics to determine what websites come up when you search for something. Amazon uses statistics to determine what products you might like. Researchers use statistics to solve big problems—like hunger in developing countries or to cure diseases.. To be a statistician, you need to understand and enjoy math. You need to be able to analyse information and see patterns.



YEAR 8 - REPRESENTATIONS...

Tables and Probability

What do I need to be able to do?

By the end of this unit you should be able to:

- Construct a sample space diagram.
- Systematically list outcomes.
- Find the probability from two-way tables.
- Find the probability from Venn diagrams.

Keywords

Outcomes: the result of an event that depends on probability.

Probability: the chance that something will happen.

Set: a collection of objects.

Chance: the likelihood of a particular outcome.

Event: the outcome of a probability — a set of possible outcomes.

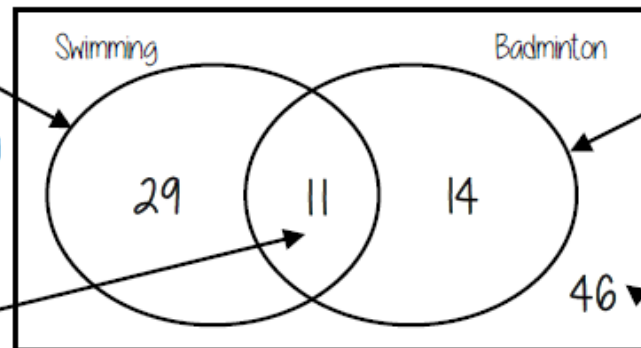
Biased: a built in error that makes all values wrong by a certain amount.

Union: Notation 'U' meaning the set made by comparing the elements of two sets.

Probability from Venn diagrams

This whole curve includes everyone that went swimming.
Because 11 did both we calculate just swimming by $40 - 11$

The intersection represents both Swimming AND badminton



This whole curve includes everyone that went to badminton.
Because 11 did both we calculate just badminton by $25 - 11$

The number outside represents those that did neither badminton or swimming $100 - 29 - 11 - 14$

100 students were questioned if they played badminton or went to swimming club.
40 went swimming, 25 went to badminton and 11 went to both.

$$P(\text{Just swimming}) = \frac{29}{100}$$

Probability
Basics



Sample
Spaces



Venn
Diagrams



Product
Rule



Construct sample space diagrams



Sample space diagrams provide a systematic way to display outcomes from events

The possible outcomes from tossing a coin

The possible outcomes from rolling a dice

	1	2	3	4	5	6
H	1H	2H	3H	4H	5H	6H
T	1T	2T	3T	4T	5T	6T

This is the set notation to list the outcomes $S =$

$S = \{ 1H, 2H, 3H, 4H, 5H, 6H, 1T, 2T, 3T, 4T, 5T, 6T \}$

In between the $\{ \}$ are
a; the possible outcomes

Probability from sample space

The possible outcomes from rolling a dice

The possible outcomes from tossing a coin

	1	2	3	4	5	6
H	1H	2H	3H	4H	5H	6H
T	1T	2T	3T	4T	5T	6T

This is the set notation that represents the question P

What is the probability that an outcome has an even number and a tails?

$P(\text{Even number and Tails}) =$

There are three even numbers with tails

Numerator: the event

$= \frac{3}{12}$

Denominator: the total number of outcomes

There are twelve possible outcomes

In between the $()$ is the event asked for

Probability from two-way tables

	Car	Bus	Walk	Total
Boys	15	24	14	53
Girls	6	20	21	47
Total	21	44	35	100

$P(\text{Girl walk to school}) = \frac{21}{100}$

The event

The total in the set

The total number of items

Product Rule

The number of items in event a

\times

The number of items in event b

A job based on probability:

Meteorologist

Meteorologists are weather scientists, they study the sky and understand patterns that can predict weather. They use specialised equipment to analyse what kind of weather to expect. Some meteorologists get high-profile jobs as weathermen or weather women on television news stations. Other meteorologists work behind the scenes. They might do research for government agencies or universities, or work for the military. Some meteorologists help develop new equipment for forecasting the weather. Others are working to understand climate change. Meteorologists need a bachelor's degree in science or math. Some travel to do field work. Meteorologists typically earn £100,000 a year. People working for news stations can earn much more.

Year 8 RS: How do Christians interact with culture and society?

Key words	
Worship	Act of religious honour or devotion
Liturgical worship	service which follows a set pattern
Non-liturgical worship	service which does not follow a text or set pattern
Informal Worship	a type of non-liturgical worship which is spontaneous
Private Worship	Someone praises or honours God on their own
Prayer	Communicating with God.

The Church

Church means a gathering of people and originally the church didn't have special buildings but met at people's homes. The church therefore is about people who meet to worship Christ. *"And God placed all things under his (Jesus') feet and appointed him to be head over everything for the church, which is his body"*. The church as a building provides a place where Christians in the local community can meet, socialise, worship and gain spiritual guidance. Christians meet at church on a Sunday, but many churches have events happening throughout the week. Traditionally the role of the church helped with schooling, medical needs and other services. In modern times the church has projects in the community to help others following the teachings of Jesus.

Worship

It is a way for Christians to show love and respect for God. It shows Christians how important God is to them. They worship in different ways but the public worship takes place at church on Sunday. Christians pray to ask for forgiveness, to say thanks, to ask for help or for comfort and strength. There are different types. Liturgical, non-liturgical, informal and private

Prayer

Prayer is all about communication with God. Christians ask God for help for themselves or others, ask for forgiveness, to be provided with strength or comfort or to say sorry, confess sin and ask for forgiveness or to praise God. People pray in different ways, which might include standing, kneeling or using rosary beads – for Catholics and Orthodox Christians use Icons. Christians do believe God answers prayers, but because he is transcendent (beyond our understanding) we cannot understand when or how he does it and perhaps not in the way we would want or expect. For example when Jesus is praying in the Garden of Gethsemane he asks God to *"remove this cup from me"*. He is asking God to help him not have to go through the crucifixion. God doesn't stop this as there is a purpose to Jesus' suffering.

The Lord's Prayer

This is the prayer which Jesus taught his disciples to pray. *"Our father who art in heaven...."*. This is an example of set prayer and is important as it sets out how to live, for example to show forgiveness to others. It also reminds how God is part of the whole community and is said out loud together.

Pilgrimage

A pilgrimage is a special religious journey and can be seen as an act of worship in itself.

For Christians the Holy Land, where Jesus lived and died is particularly important. Pilgrimage is important as it allows people to get closer to God, strengthen faith, ask for forgiveness, pray, ask for a cure, help others and meet others who share your faith. Two important places are Lourdes and Iona.

Lourdes — In France dedicated to Mary as Bernadette believed to have seen visions of Mary in the 19th Century. A spring of water was discovered which had healing powers. Now millions of people have been to drink from the spring of water in the hope of being healed. Many sick or disabled people go to Lourdes.

Iona — An Island off the west coast of Scotland. In the 6th Century St. Columba, an Irish missionary brought Christianity to Scotland and set up a small monastic community there. Pilgrimages happen there in dedication to the virgin Mary. The community in Iona hold daily services in the Church leading a seven-mile hike to holy spots.

Festivals

Festivals remember important events in a religions calendar, for Christians this is Christmas and Easter. They are centered around Jesus who is the most important person in their religion.

Christmas — Remembers the birth of Jesus — his incarnation. It is celebrated on the 25th December. Trees and homes are decorated with nativity scenes. Lights remember Jesus is the light of the world. Carol services happen in Churches with readings from the bible. Children act out nativity plays and midnight mass takes place on Christmas Eve. *“I bring you glad tidings that today a king is born”*

Easter — It is the most important festival which celebrates Jesus’ resurrection from the dead leading up from holy week. Jesus was crucified on Good Friday and rose on Easter Sunday. Special services take place and processions led by someone carrying a cross. On Easter Sunday special services take place with hymns which celebrate the resurrection. Eggs are used as a reminder of new life. *“Christ is risen from the dead”*.

The Sacrament of Baptism

This is important as it is the initiation ceremony to become a Christian and part of the church and therefore receives the grace of God. Sins are forgiven and they start a new life in Christ. Jesus was baptized by John in the river Jordan, here is received the Holy Spirt and sets an example for Christians to do the same. *“Therefore go and make disciples of many nations, baptising them in the name of the father, son and Holy Spirit.*

Infant Baptism — Catholic, Orthodox, Anglican Methodist practice this. Everyone is a descendent of Adam and Eve and therefore carries Original Sin and so baptism washes this away. It also welcomes them to the church community.

Believer’s Baptism — Baptist and Pentecostal’s think children are too young to understand the meaning and therefore don’t baptise infants. They have believers baptisms when a person is old enough to understand the meaning behind what they are doing. This includes a full immersion in a pool to wash away sin and start a new life in Jesus.

Year 8 revision RS: How do Sikhs interact with culture and society ?

Key words	
Sikh	A follower of a religion called Sikhism.
Guru Nanak	The founder of Sikhism
Waheguru	The Sikh God
Punjab	An area in the Northern part of India where Sikhism was started by Guru Nanak.
Guru Granth Sahib	The holy book for Sikhs.
Gurdwara	The Sikh Temple-place of worship.
The Golden Temple	The Pilgrimage or spiritual place of worship for Sikhs.
Sewa	Serving others, showing love and kindness to all.
Langar	A community kitchen in a Gurdwara, food is cooked and served daily to everyone.

People of all religions are welcomed in and even allowed to say their own religion's prayers.

They must not take meat, alcohol or cigarettes into the Golden Temple and their head must be covered. They take off their shoes when they enter.

The central point of the Golden Temple is the known as the Divine Temple. Here one can see some of the earliest copies of the Guru Granth Sahib as during the day it is placed on the takht in this diwan hall. However, a newer copy is used in daily worship to protect the oldest one.

The walls inside the Harmandir Sahib are carved with verses from the Guru Granth Sahib. People swim in the lake – it is known as a Sarovar (sacred pool) and is said to heal illnesses.

An Overview of Sikhism.

Sikhism is one of the world's major religions. It is the world's 5th major religion, with about 28 million followers. It began over 500 years ago.

Sikhs are people who follow Sikhism. Sikhs believe in One God, who guides and protects them. Sikhs see everybody as being equal in God's eyes.

Leading a good life and making important choices are important in Sikhism.

The Guru Granth Sahib is the holy book in Sikhism. Sikhs worship at home and also in a Gurdwara, their Sikh Temple.

Pilgrimage in Sikhism.

The Golden Temple's real name is **Harmandir Sahib**. This means 'temple of God.' (Har means God, mandir means temple – you should remember this from Hinduism and Sahib is a way of showing respect to something. It's very similar to sa'lah'lah'hu'alla'him/'peace be upon him' in Islam.)

It is built on a platform in the middle of a man-made lake, on a site chosen by Guru Nanak. This is in the centre of **Amritsar**, a Sikh city. It was first built in 1574. However it was destroyed in 1740 by a Mogul emperor and then was recaptured by a Sikh army and rebuilt. It was later built again in the 19th century out of marble and then the top half covered in gold leaf. There are 4 doors, one on every side to show that people of all races, religions and nations are welcome.

- People of all religions are welcomed in and even allowed to say their own religion's prayers.
- They must not take meat, alcohol or cigarettes into the Golden Temple and their head must be covered. They take off their shoes when they enter.

The central point of the Golden Temple is the known as the Divine Temple. Here one can see some of the earliest copies of the Guru Granth Sahib as during the day it is placed on the takht in this diwan hall.

The 5 K's

Sikhs display their commitment to their religion by adhering to the 5 K's, which are the Sikh Articles of faith.

The **5 Ks** are symbols of Sikh faith. Many non-baptised Sikhs will wear them, but all members, both male and female, of the **khalsa** (Sikh community) are obliged to wear them.

They will also change their name as a sign. Men who have joined the khalsa add **Singh** (meaning 'lion' to their name), showing they are strong & fearless, but also caring & kind.

Women add **Kaur** (meaning 'princess'), showing all women should behave & be treated like princesses. The commitment to the 5 Ks first came into place in 1699 when Guru Gobind Singh (the 10th guru) made the announcement that they should be worn as a display of faith and devotion to God. They are also a symbol of belonging to the Sikh Community. The 5 K's are Kesh- uncut hair, Kangha-comb, Kara-Steel bracelet, Kirpan- small sword and Kachera- shorts worn under their trousers.

Where and how do Sikhs worship?

Sikh temples are called Gurdwaras. They are built with a large central dome. Gurdwaras have 4 doors, one on each side of the temple. This shows that they are open to all people of any faith as Sikhs believe that everyone is equal and we all can and should worship together.

3 Principles all Sikhs live by:

Nam Simran: Remember God's name always.

Kifat Karna: Earn an honest living.

Everyone is obligated to work hard to earn a living if they are able
They cannot have a job which hurts others (running a gambling business, making pornography, dealing illegal drugs, etc.)
Shouldn't be about getting rich but just to help them live life.

Vand Chhakna: Share in charity with those who are less fortunate. This shows generosity and self-sacrifice. Sikhs believe that the best way to worship God is by caring for other people. We cannot love God if don't take care of his creations. **All beings and creatures are His; He belongs to all.'** This means respect for all living things because God is in everything- including animals. As a result, many Sikhs are vegetarian. They think they are **stewards** of the Earth so they also have to care for it as God created it.



Year 8 Autumn Term Knowledge Organiser



Baroque Music 1600 – 1750

- ✓ Melody - a single melodic idea
- ✓ Rhythm – a continuous rhythmic drive
- ✓ Texture - a mixture of homophonic and polyphonic textures (thick and thin)
- ✓ Timbre - orchestral – strings, woodwind and harpsichord with very little percussion
- ✓ Dynamics - sudden shifts from loud to soft and vice versa – achieved by adding or subtracting instruments
- ✓ An overall characteristic of Baroque Music is that each piece has a single mood or expression of feeling – one purpose
 - ✓ Famous composers: Bach, Handel, Purcell, Pachelbel, Vivaldi

We will have studied Pachelbel's Canon and Vivaldi's Four Seasons



Classical Music 1750 – 1840

- ✓ Melody – short and clearly defined musical phrases with two or more contrasting themes
 - ✓ Rhythm – very defined and regular
- ✓ Texture – mainly homophonic (main melody and accompaniment)
 - ✓ Structure – rondo and sonata forms
- ✓ Timbre – the symphony orchestra was organised into four sections – strings, woodwind, brass and percussion. The harpsichord was seldom used.
 - ✓ Famous composers: Mozart, Beethoven, Haydn and Grieg

We will have studied Beethoven's Fur Elise and Mozart's Eine Kleine Nachtmusik



Fur Elise

Measures 1-8 of 'Fur Elise'.

Chords: C, D, Eb, C, Eb, G, Eb, G, C, B, F, G, F, G, D, C, Eb, G, C.

Spring

Measures 1-8 of 'Spring'.

Chords: C/G, C/G, C/G, C/G, C/G, C/G, G, F, E, F, G, F, E, C, F, G.

Here are three of the pieces we will have studied – can you write in the missing note names? Rhymes for the bass clef are:

If the note is on the line, Good Bike Don't Fall Apart

If the note is in a space, All Cows Eat Grass

Measures 9-17 of 'Spring'.

Chords: C/G, C/G, C/G, C/G, C/G, C/G, G, F, E, F, G, F, E, C, F, G.