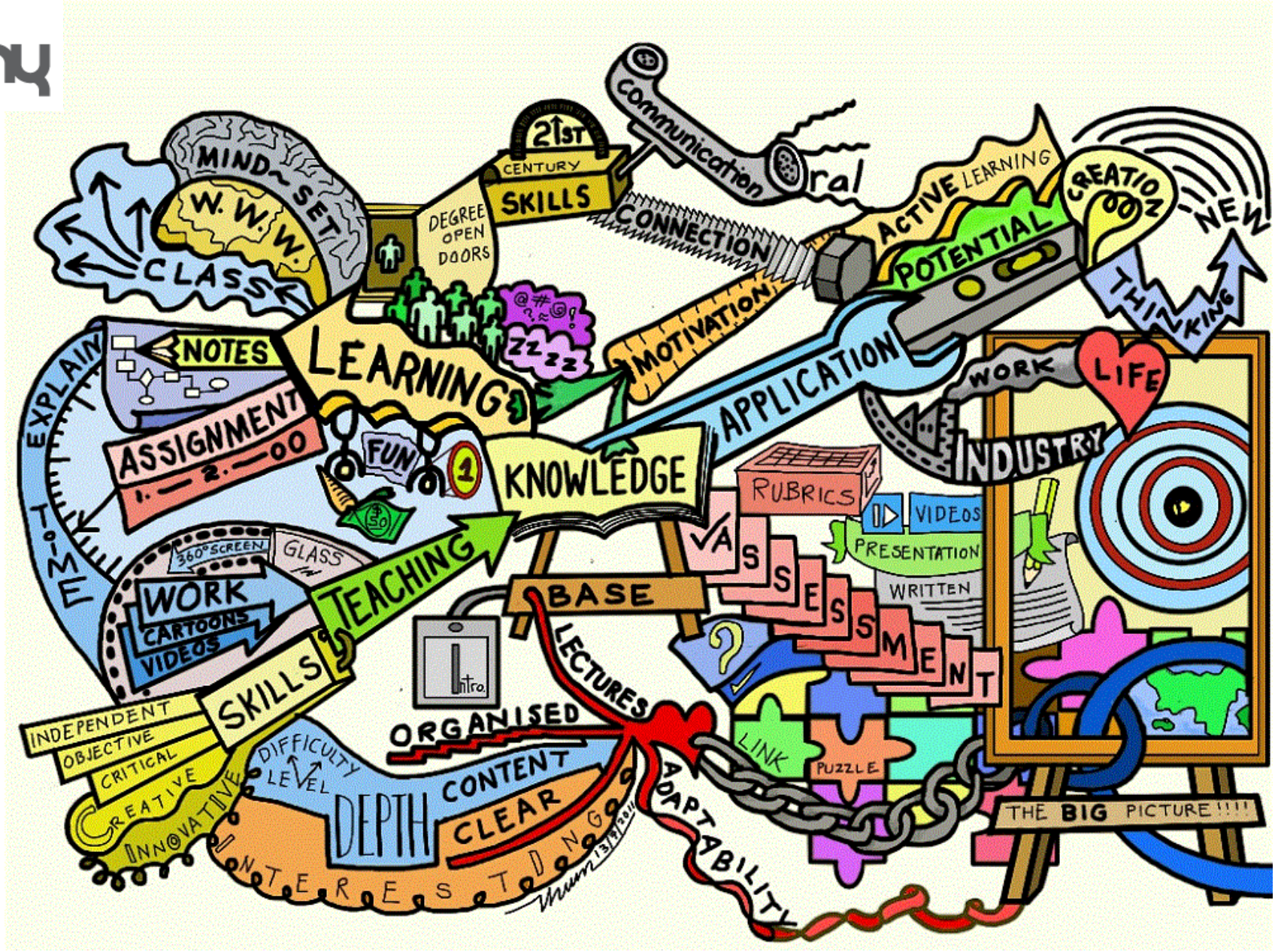
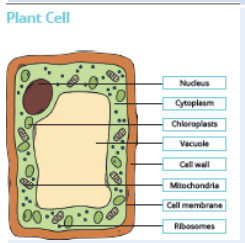
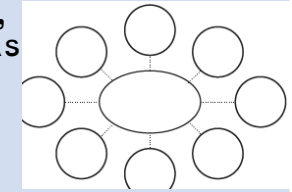
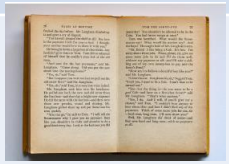


Summer 1 - Year 8 Name:

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.

Idea	Explanation
Make some flash cards or PowerPoint slides. Make top trumps. 	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.
 Make a poster.	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!
Draw spider diagrams, or for the adventurous mind maps. 	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.
Write a song or a rap. 	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.
 Plan a lesson	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.
Write a story or comic strip. 	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.
Write a quiz. Design a game. 	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.

Seasonal Produce and Air Miles

Seasonal produce

Seasonality of **food** refers to the times of year when the harvest or the flavour of a given type **food** is at its peak. This is usually the time when the item is the cheapest and the freshest on the market.
The **food's** peak harvest time usually coincides with when its flavour is at its best.

Advantages of local, seasonal foods foods

- Often cheaper as it is not imported and there is a larger quantity of the food available
- Fresher as it has taken less time to travel and less storage time.
- High in nutrients – fruit and vegetables lose nutrients over time after being picked. With less travel and storage time, they lose less nutrients.
- Tastes better as it is fresher and higher in nutrients.

Disadvantages of local, seasonal foods

- There is a smaller range of foods available
- Not importing foods means not supporting farmers in developing countries.

Examples of UK grown produce

Autumn	Winter	Spring	Summer
Apples Mushrooms Beetroot Pears Potatoes Pumpkin Garlic	Cauliflower Sprouts Suedes Sweet potato Broccoli Oranges Cabbage	Strawberry Carrot Lettuce Leeks Asparagus Peas Spring onion	Cucumber Aubergine Tomato Raspberry Courgette Onion Corn on the cob

Food miles

- If we're not eating fresh, seasonal food grown in the UK, the food has travelled from abroad to reach us.
- Food miles are clocked up by the fresh fruit and vegetables arriving by plane from across the globe.
- Then the fruit gets loaded in to lorries and driven across various parts of the country to supermarkets
- Then once on a shelf the products are then bought by people who then drive it back home.

Food miles are the measure of the distance a food travels from field to plate. This travel adds substantially to the Carbon Dioxide emissions that are contributing to climate change. The amount of food being flown into the UK doubled in the 1990s and is predicted to rise further each year. Consumers are also directly responsible for increased food miles. We now travel further for our shopping and use the car more often to do it.

Advantages of importing foods

- A wide range of foods are available in our shops all year round e.g. strawberries at Christmas.
- Less energy is used growing certain crops in poorer countries as there is no need for heating glasshouses etc. (less damage to the environment)

Disadvantages of importing foods

- Its harder to monitor food production standard and conditions for workers in countries far away.
- Taxes on imported foods means farmers in developing countries don't always receive a fair price for their foods.
- Food that has travelled a long distance is less fresh by the time it reaches the shelves
- People do not buy local produce as much so local UK farmers don't make as much money
- Increased road traffic as more food is being transported around the holiday
- There is increased used of fuel for the road transport plus the carbon dioxide emissions related
- The amount of food flown into the UK increases each year which means the UK is not self-sufficient
- Pressure to expand food production has led to the destruction of environments in some poorer countries
- Over 60% of household waste is a result of food packaging
- Fresh spinach looses over 90% of its vitamin C in the first 24 hours of harvest

Examples of imported foods

Pineapple, mango, tomatoes, celery, potatoes, bananas, nuts, sugar, chicken, lamb, beef, fish, oil, cocoa beans, grapes, tea, coffee, rice, soya bean, herbs, spices, olives, capers, avocado, cauliflower, broccoli

Food Packaging

Food packaging
Food is packaged to protect the product during transport and whilst sitting on shelves.

Why is food labelling important?
Symbols on packaging show important information to customers.

Giving farmers a fair price for their products.	Forest Stewardship Council – helping effectively manage forests.	Suitable for home freezing.	Eggs have been produced to the highest standards of food safety.	Vegetarian approved – free from animal products.
This product can be recycled.	A British organisation that promotes and regulates food quality.	Tidy man – do not litter.	Food which abides by the Islamic law. The Islamic way of slaughtering is cutting the throat and draining the blood.	An ethical food label – helping farm animals have a good life.

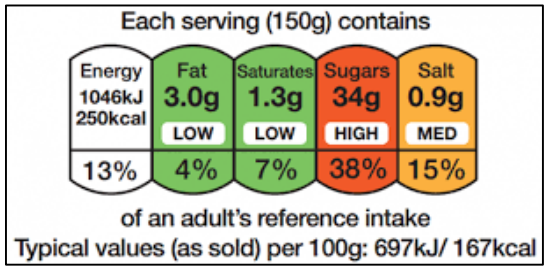
Example exam questions:
Seasonal produce and air miles
What are the advantage of buying locally produced, seasonal produce? (6 marks)
Explain the disadvantages of buying imported foods. (10 marks)
Explain the term 'air miles' (3 marks)
Explain the term 'seasonal produce' (3 marks)
How might a restaurant use the fact they only use

Food packaging
Compare the two dishes and explain which dish is a healthier choice. Use the traffic light system to help you with your answer (6 marks).
Why is it important to include a vegetarian symbol on food packaging of vegetarian products? (2 marks)

Reference intake

You'll see reference intakes referred to on food labels. They show you the maximum amount of calories and nutrients you should eat in a day. Most packaging has a colour coded label on the front to help you make healthy choices.

Reference in take amounts:
Kcal (calories) – 2000
Total Fat -70g
Saturated fat – 20g
Sugar – 90g
Salt – less that 6g



Red means HIGH in that nutrient
Amber means MEDIUM in that nutrient
Green means LOW in that nutrient

Reference intakes are not meant to be targets. They just give you a rough idea of how much energy you should be eating each day, and how much fat, sugar, salt and so on.
The percentages represent how much of your reference intake is in the product, e.g. the product has 3.0g of FAT in it, that is 4% of 70g of fat.

Nutrition

Nutrients

Macro nutrients – needed in large quantities in the diet. The three macro nutrients are: PROTEIN, CARHOHYDRATES, 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, how ever, essential amino acids cant 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 of 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

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.

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).

Practical assessment 2: Tomato and basil quiche

Ingredients
100g plain flour
50g butter or margarine
2tbsp cold water
1 tomato
Handful of basil leaves
2 eggs
125ml semi-skimmed milk
50g cheese

Equipment
Bowl
Weighing scales
Spoon
Jug
Chopping board
knife

Skills
Weighing
measuring
Rubbing in method
Seasoning

1. Pre-heat the oven to 180°C. Rub the butter and flour together until it resembles bread crumbs.

2. Add the water gradually until the pastry comes together into a ball.

3. Roll out the pastry and line your dish.

4. Mix the eggs, milk, mixed herbs and seasoning in a jug.

5. Pour the egg mixture into the pastry shell.

6. Slice the tomatoes and cheese and lay over the top of the tart. Bake in the oven for 30 minutes.

Lemon Drizzle Cupcakes

Ingredients

110g butter

110g sugar

110g self raising flour

2 eggs

Zest of ½ lemon

Drizzle:

Juice of 1 lemon

50g sugar

Equipment

Chopping board, knife, jug, grater, bowl, wooden spoon, cake tin, sieve, scales

Skills

Weighing

1. Beat butter and sugar until pale and creamy.
2. Whisk the eggs in a jug and add the egg little by little.
3. Sift in the flour and lemon zest and fold until combined.
4. Evenly divide your mixture between 6 cupcake cases.
5. Make the drizzle; mix sugar and the lemon juice.
6. When the cakes are ready, prick the top with cocktail stick and pour over the drizzle.

Meatballs

For the meatballs:
250g mince
½ onion
2 tbsp breadcrumbs
1 egg

For the sauce:
1 can chopped tomatoes
1 garlic
½ onion
1 tsp mixed herbs

Optional
200g cooked pasta

Equipment
Knife
Chopping board
Bowl
Baking tray

Skills
Weighing
Chopping
Seasoning
Baking
Frying

For the meatballs:

1. Finely chop the onion and put in a bowl.

2. Add the egg, breadcrumbs and mince. Mix well with your hands.

3. Divide into even round shapes and place on a baking tray with a drizzle of oil. Cook for 20 minutes.

For the sauce:

4. finely chop the onion and garlic.

5. Gently fry for a few minutes. Then add the can of tomato's and herbs.

6. Allow to simmer for 10 minutes. Stir through the meatballs when they are cooked.

Serve with spaghetti and parmesan cheese on top.

Next lesson you will make a pasta dish of your choice.

Chocolate orange cookies

Ingredients

125g butter, softened
100g light brown soft sugar
125g caster sugar
1 egg, lightly beaten
225g self-raising flour
200g chocolate chips
1 orange

Equipment

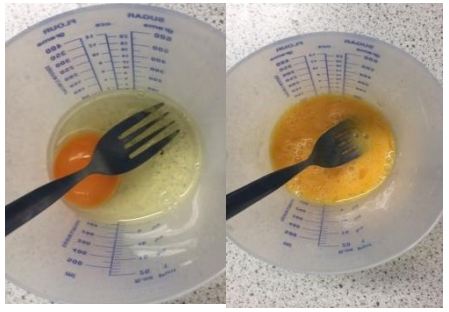
Weighing scales
Bowl
Spoon
Baking tray
jug

Skills

Weighing
Whisking
Shaping
Baking

1. Pre-heat the oven to 190C. Weigh out the butter and the sugar.

2. Cream the butter and sugar together.



3. Mix the egg in a jug and add a little at a time to the butter mixture.

3. Add the flour and chocolate chips and orange zest. Mix well.

4. Split the mixture into 12 even balls, 6 per tray. Bake for 10 minutes until golden on the edges and soft in the middle.

You can change this recipe to make:
-Chocolate orange cookies
-Cranberry and white chocolate cookies
-Peanut butter cookies

Year 8 Summer term Textiles – Making a textile product

Making a textile product

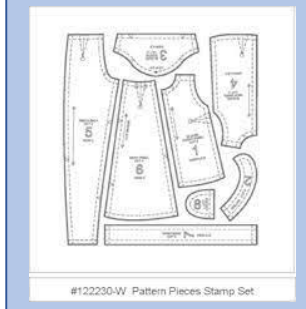
Design brief

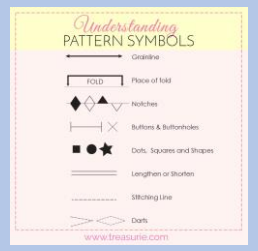
Design a fabric monster that will be added to a CAM toy to keep a child entertained.

This half term you will be making a textile product from the design brief above.
What will you need to consider when designing and making for a child?
How will you know if your product is suitable?

Designers need to think about who will use the product, when and how?

Pattern pieces





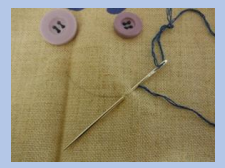
Pattern pieces are usually made from paper and they are like stencils. They allow us to cut out exactly the same shape every time. They are pinned onto fabric and fabric scissors are used to around the paper pattern. Sometimes tailors chalk is used to draw around the pattern piece first then it is cut out
What is tailors chalk? When and why did you use it?
Pattern pieces have symbols on them to tell us to do certain things. Use this link to find out what the symbols mean: https://www.createandcraft.com/gb/sewing-pattern-symbols
https://www.youtube.com/watch?v=ioLMA3N230U – click on this link to see fabric being marked and cut using a paper pattern.

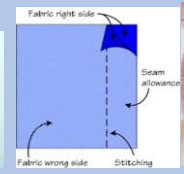
Sewing a seam

For this project you will learn how to make a simple fabric product to go onto the top of your frame. You will use a paper pattern to draw around, tailors chalk to mark the lines, fabric scissors to cut the fabric and a sewing machine to permanently join your fabric. Your fabric monster will be attached to your CAM frame to make a moving toy.

How to make your textile part (this is in your booklet too)

Step 1 Cut out your fabric using your paper pattern x2, one for the front and one for the back
Step 2 Decorate the front and back pieces according to your design using the decorative skills you have learnt this year
Step 3 Cut out any additional pieces you need, for example for arms, legs, hair which will be added on, this may be made from felt.
Step 4 Pin fabric together, good sides facing, add any felt pieces inside and pin them
Step 5 Sew your pieces together on the sewing machine, checking you have selected the correct stitch and it is threaded properly. Leave a small hole.
Step 6 Check your seams are strong then turn your fabric the right way through the hole you have left.
Step 7 Stuff your textile product and attach to your follower by sewing and glue gun.





https://www.instructables.com/how-to-sew-a-seam/ How to produce a seam on the sewing machine

https://www.youtube.com/watch?v=27aXDI6z6eo sewing 2 pieces of fabric together

Careers using this knowledge: Fashion designer, textile designer, tailor, pattern maker, upholsterer, material engineer.

Muscular Strength

'The maximum force, measured in kilograms (Kg) or newtons (N) that can be generated by a muscle or group of muscles'

Having good muscular strength also benefits your overall health. It can include better bone health, lower risk of injury and better cardiovascular fitness. It even promotes healthy body composition and mental health. As far as your athletic performance goes, increased muscular strength also offers multiple other benefits for your competitive advantage.

Muscular strength provides a great benefit in sports that require you to be as strong as possible without having a significant amount of muscle mass *(hypertrophy)*. It is especially useful in situations that require acceleration, power and agility. Muscular strength is also needed in sports that rely on a single powerful execution, making it a great choice for court-based sports like tennis and badminton, water sports and track-and-field sports like athletics.

Laura Kenny

Anthony Joshua

Harry Kane

Roger Federer

Select one athlete from the picture on this page. Explain why these performers may need muscular endurance.

1. .....
.....
.....
.....
.....
2. .....
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.....
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3. .....
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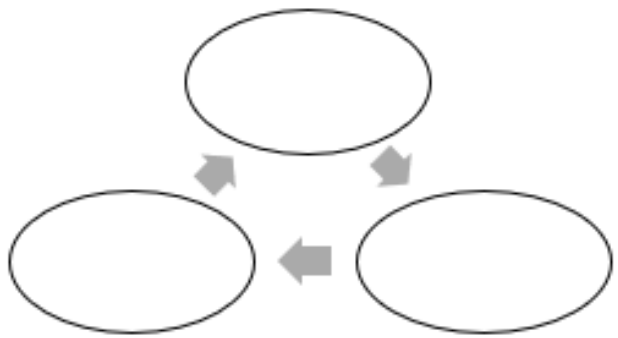
.....

It is important to understand that different sports and sports performers require different aspects of fitness. Many sports need the same types of physical and skill related fitness, however some are unique and require specific components.

Dina Asher-Smith is a British and World Champion sprinter. She needs to have great **muscular endurance** for her races as well as **speed, power and reaction time** to cover as much distance as possible, respond to the starter's pistol and move powerfully out of the blocks to get a good start. Her **muscular strength** is also essential to her performance.

Circuit training sessions could help Dina when she is training for her events. Research what circuit training is and plan 3 exercises Dina could attempt to help her to improve her Muscular strength.



Plyometric training – This training develops sport-specific explosive power and strength.

Weight training – Weight training is a form of interval training and involves using reps and sets of reps.

<u>Key tests and workouts to improve muscular strength</u>

A Grip Dynamometer can be used to measure muscular strength in a person's arm. Using 3 attempts, you should squeeze dynamometer and measure the strength in your grip.

Tricep dips can be used to improve strength in your upper body and arms. Try completing 10 tricep dips each morning before school.

Squats can help improve strength in the lower part of your body, including strengthening your quadriceps, hamstrings and gastrocnemius muscles. Try 20 each day.

Burpees can improve the strength in all areas of your body. They can strengthen the hamstrings, quadriceps, gluteus maximus, abdominals, biceps, triceps, pectorals and deltoids amongst other muscles. Try doing at least 10 per day.

Photosynthesis knowledge organiser

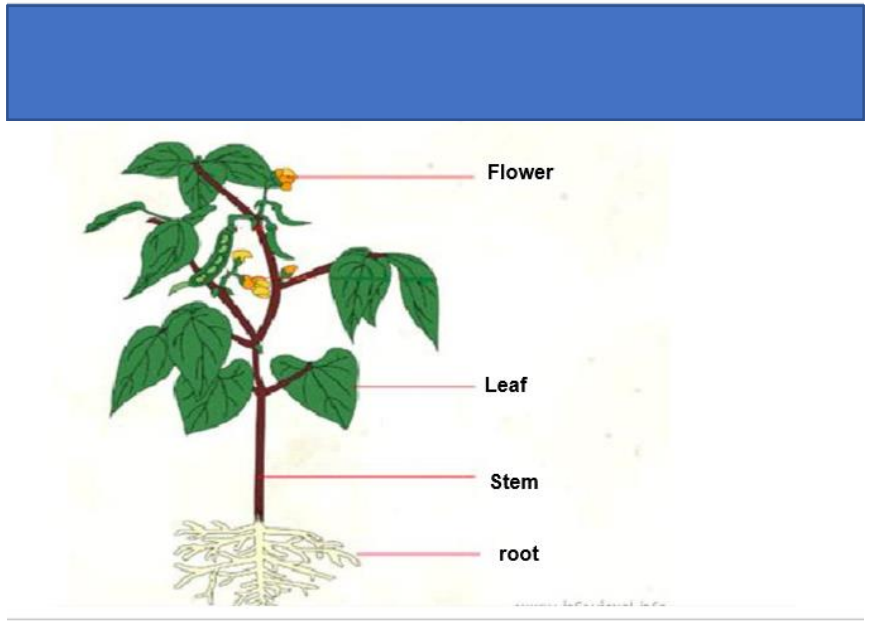
<u>Key points</u>

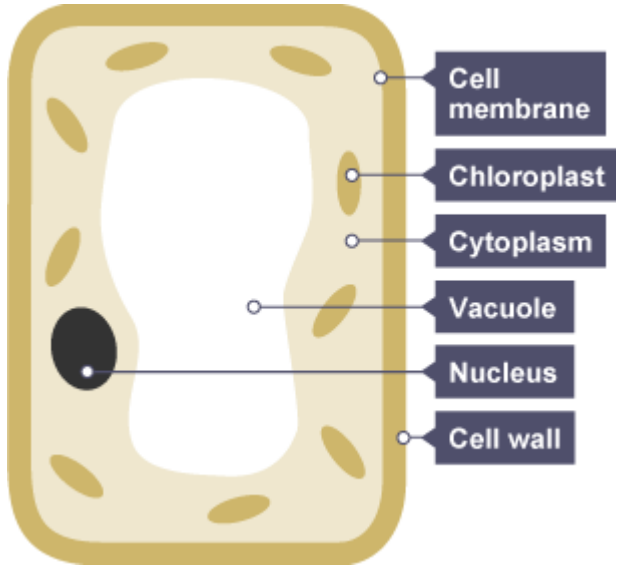
Photosynthesis is a process that occurs in the leaves of a plant and needs both chlorophyll and light energy.

During photosynthesis, the chlorophyll in leaves help convert carbon dioxide and water into the products oxygen and glucose.

The product glucose acts as a vital source of food for the plant.

Carbon dioxide, water and light are all needed for photosynthesis to take place.





What is photosynthesis?

Photosynthesis takes place inside plant cells in small objects called chloroplasts. Chloroplasts contain a green substance called chlorophyll. This absorbs the light energy needed to make photosynthesis happen. Plants and algae can only carry out photosynthesis in the light.

Photosynthesis knowledge organiser

These are the things that plants need for photosynthesis:
•Carbon dioxide
•Water
•Light (a source of energy)
These are the things that plants make by photosynthesis:
•Glucose
•Oxygen
The word equation for photosynthesis in the presence of light and chlorophyll is:

Carbon dioxide + water → glucose + oxygen

Why is photosynthesis important?
Photosynthesis provides organisms with oxygen, a gas that many living things need. Oxygen is a product of photosynthesis and is needed for respiration. All organisms respire to release energy and to stay alive.

Uses of glucose

Glucose is a useful molecule that is made during the process of photosynthesis. The initial use for glucose, when broken down during respiration, is to release energy.

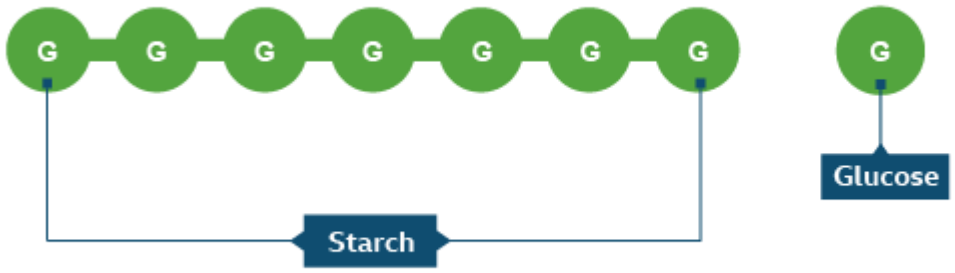
Plants only photosynthesise and synthesise glucose during the day when there is sunlight, but they use glucose for **respiration** all the time, including during the night.

Cellulose

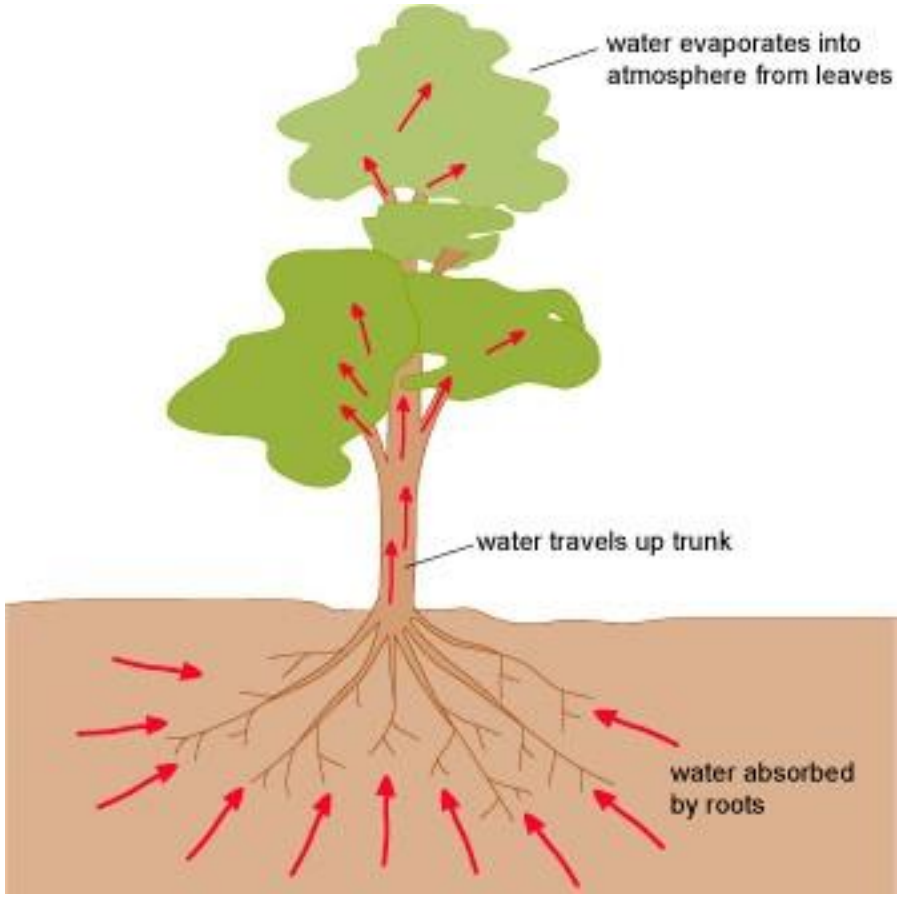
Glucose is used to make cellulose. Cellulose is an example of a natural polymer. Cellulose is the main component found in plant cell walls and this gives the plant cell strength and

Starch

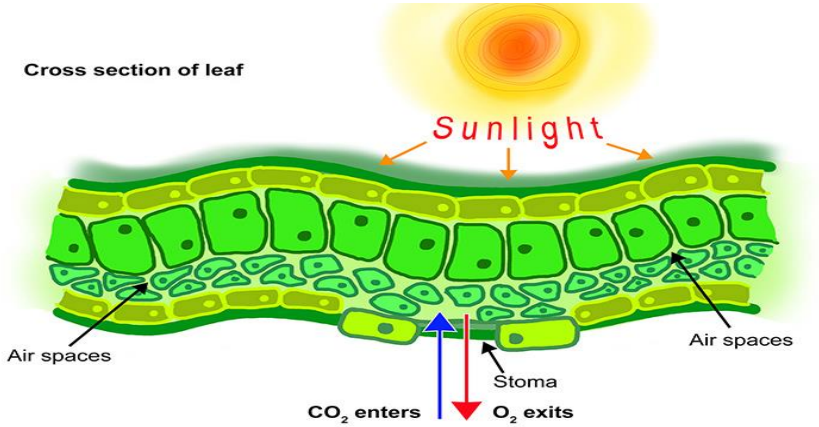
Other uses of glucose produced from photosynthesis is to make the insoluble storage molecule starch. Most plants including rice, potatoes and wheat store their energy as starch. Starch is also a polymer and can be converted back to glucose by the plant when it is needed, for example at night for respiration.

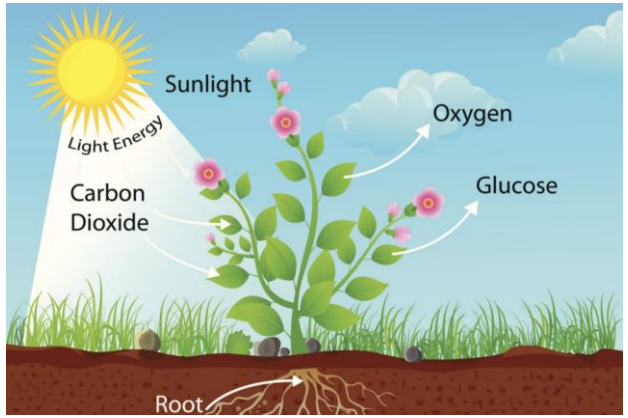


PLANTS ALSO MAKE FATS AND PROTEINS WITH GLUCOSE



Xylem transports water and mineral salts from the roots up to other parts of the plant,





Carbon dioxide diffuses into the leaves of the plant through the stomata
It moves from an area of high to an area of low concentration

YEAR 8 REACTIVITY SERIES & DISPLACEMENT REACTIONS

Metals and acids
Acids react with some metals to produce a salt and hydrogen gas.

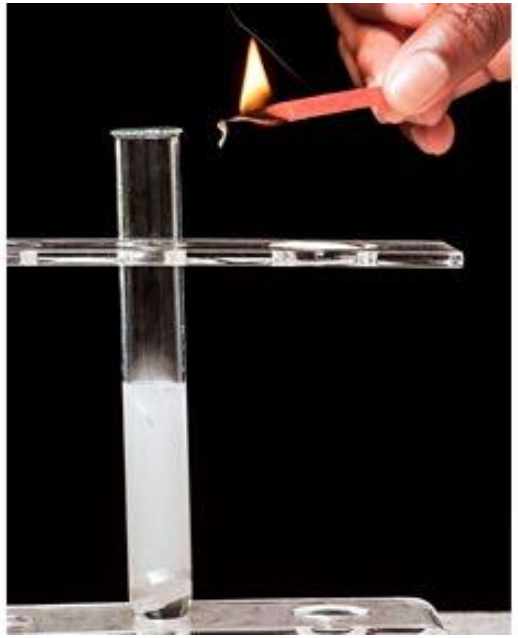
Metal + acid → salt + hydrogen

The abbreviation M.A.S.H. can be used to remember this general reaction.

When a metal is put in acid, it gets smaller and smaller as it gets used up in the chemical reaction.

At the same time, bubbles of gas can be seen. The bubbles produced in the reaction are hydrogen gas.

This can be proven using a burning splint because hydrogen is flammable. When the burning splint is put into the test tube containing hydrogen gas, a small explosion occurs, making a squeaky pop sound. This shows that hydrogen is present.



Increasing reactivity

Potassium	Please
Sodium	Send
Calcium	Charlie's
Magnesium	Monkeys
Aluminium	And
CARBON	CRAZY!
Zinc	Zebras
Iron	In
Lead	Lead
Copper	Cages
Silver	Securely
Gold	Guarded

THE REACTIVITY SERIES (reactivity league table)

YEAR 8 REACTIVITY SERIES & DISPLACEMENT REACTIONS

Increasing reactivity

Potassium	Please
Sodium	Send
Calcium	Charlie's
Magnesium	Monkeys
Aluminium	And
CARBON	**CRAZY!**
Zinc	Zebras
Iron	In
Lead	Lead
Copper	Cages
Silver	Securely
Gold	Guarded

The reactivity of a metal determines the method of extraction. Metals above carbon must be extracted using electrolysis. Metals below carbon can be extracted by reduction using carbon, coke, or charcoal. Gold and silver do not need to be extracted. They occur native (naturally).

	Reactions with water	Reactions with acid
Group 1 metals	*Reactions get more vigorous as you go down the group*	*Reactions get more vigorous as you go down the group*
Group 2 metals	*Do not react with water*	*Observable reactions include fizzing and temperature increases*
Zinc, iron and copper	*Do not react with water*	*Zinc and iron react slowly with acid. Copper does not react with acid.*

Displacement reactions

Displacement reactions involve a metal and a compound of a different metal. In a displacement reaction:
a more reactive metal will **displace** a less reactive metal from its compounds
Displacement reactions are easily seen when a salt of the less reactive metal is in the solution. During the reaction:
the more reactive metal gradually disappears as it forms a solution
the less reactive metal coats the surface of the more reactive metal
Magnesium + copper sulphate → magnesium sulphate + copper

You can investigate the reactivity of metals using displacement reactions. The table shows the results from a series of experiments involving four metals and solutions of their salts. A tick shows where there is a visible reaction and a cross shows where there is no visible reaction.

	Magnesium	Zinc	Iron	Copper
Magnesium sulfate	✗	✗	✗	✗
Zinc sulfate	✓	✗	✗	✗
Iron sulfate	✓	✓	✗	✗
Copper sulfate	✓	✓	✓	✗
Reactions seen	3	2	1	0

YEAR 8 REACTIVITY SERIES & DISPLACEMENT REACTIONS

Extracting iron and copper

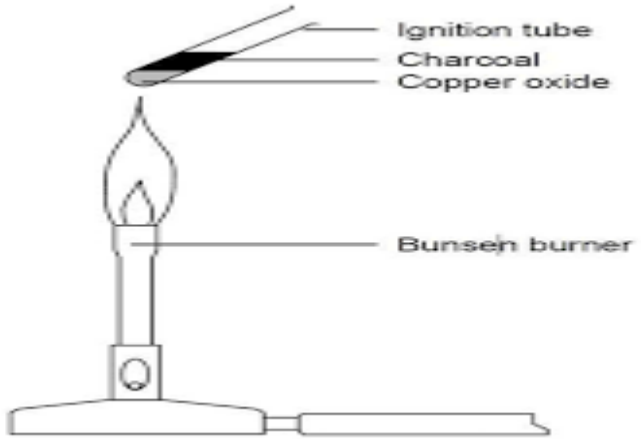
Ores

Unreactivemetals such as gold are found in the Earth's **crust** as the uncombined **elements**. However, most metals are found combined with other elements to form **compounds**.

Most metals are extracted from **ore** found in the Earth's crust. An ore is a rock that contains enough of a metal or a metal compound to make extracting the metal worthwhile.

Extraction methods

The **extraction** method used depends upon the metal's position in the **reactivity series**.



Extracting iron

Iron(III) oxide is reduced to molten iron when it reacts with carbon. One of the products is carbon monoxide:

iron(III) oxide + carbon → iron + carbon monoxide

$Fe_2O_3(s) + 3C(s) \rightarrow 2Fe(l) + 3CO(g)$

This method of extraction works because carbon is more reactive than iron, so it can **displace** iron from iron compounds. Extracting a metal by heating with carbon is cheaper than using electrolysis.

If a metal is less **reactive** than carbon, it can be extracted from its compounds by heating with carbon. Copper is an example of this. Copper mostly occurs as sulfide ores, which are heated in air to convert them to copper(II) oxide. **Molten** copper can be produced from copper oxide by heating with carbon:

Copper oxide + carbon → copper + carbon dioxide

$2CuO(s) + C(s) \rightarrow 2Cu(l) + CO_2(g)$

Copper oxide is **reduced** as carbon is **oxidised**, so this is an example of a **redox** reaction.

FORCES AND MOTION

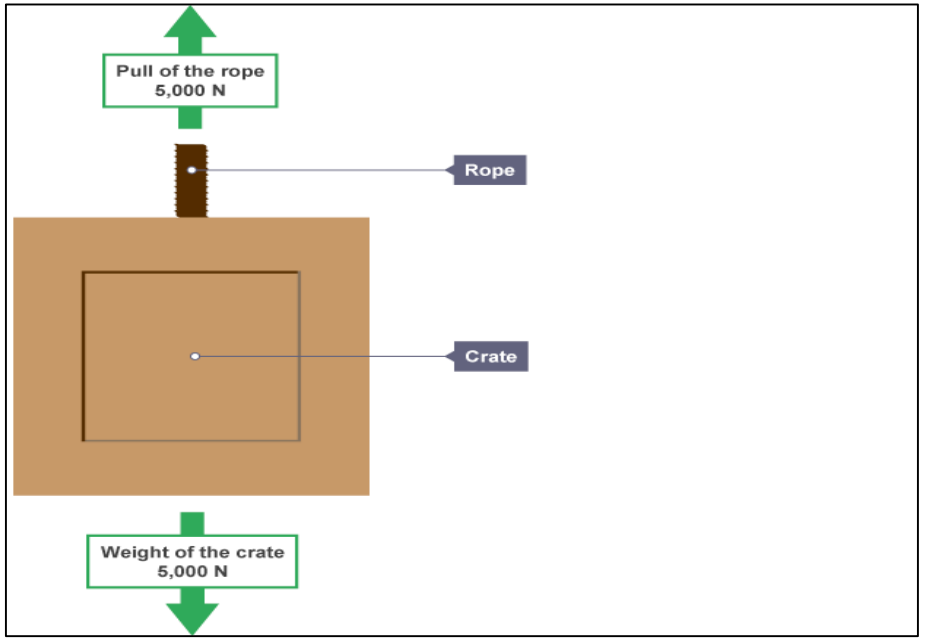
Balanced forces

When two forces acting on an object are equal in size but act in opposite directions, we say that they are **balanced forces**.

If the forces on an object are balanced (or if there are no forces acting on it), this is what happens:

- **a stationary object stays still**
- **a moving object continues to move at the same speed and in the same direction**

Remember that an object can be moving, even if there are no forces acting on it.



Unbalanced forces

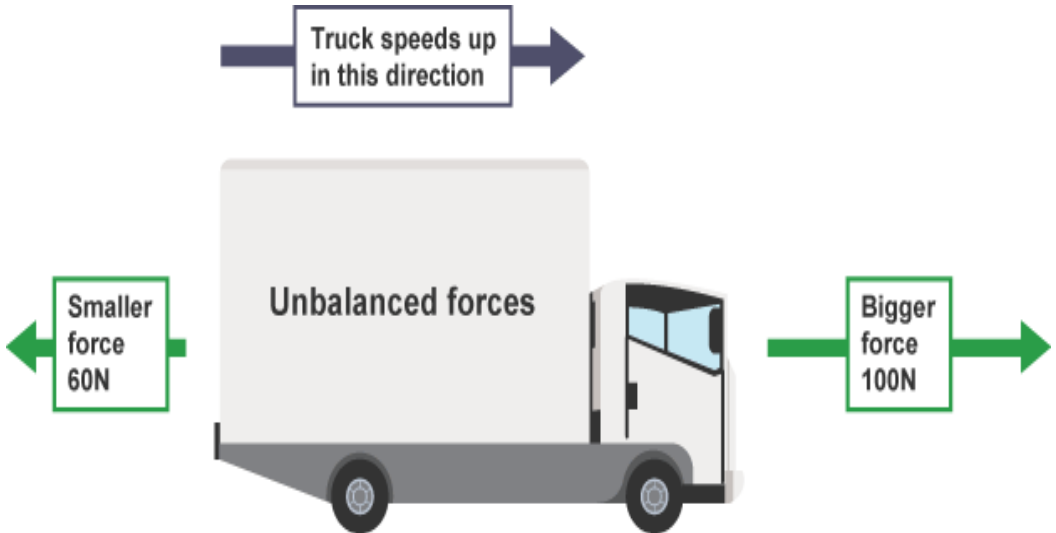
When two forces acting on an object are not equal in size, we say that they are unbalanced forces. The overall force acting on the object is called the **resultant force**. If the forces are balanced, the resultant force is zero.

If the forces on an object are unbalanced, this is what happens:

- a stationary object starts to move in the direction of the resultant force
- a moving object changes speed (accelerates or decelerates) and/or direction in the direction of the resultant force

In the example below, the resultant force is the difference between the two forces:

100 – 60 = 40 N (to the right)



Forces and motion

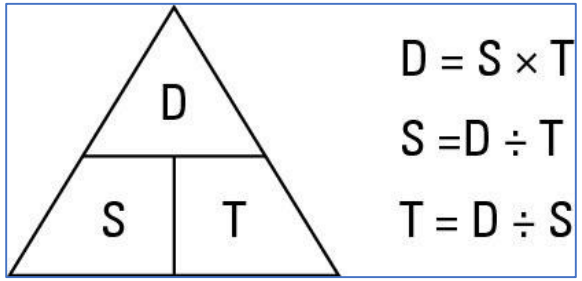
Speed, distance and time

Distance is how far an object moves.. **Speed** is the **rate of change** of distance - it is the distance travelled per unit time

speed = distance/time

distance = speed x time

Average speed is distance divided by time.

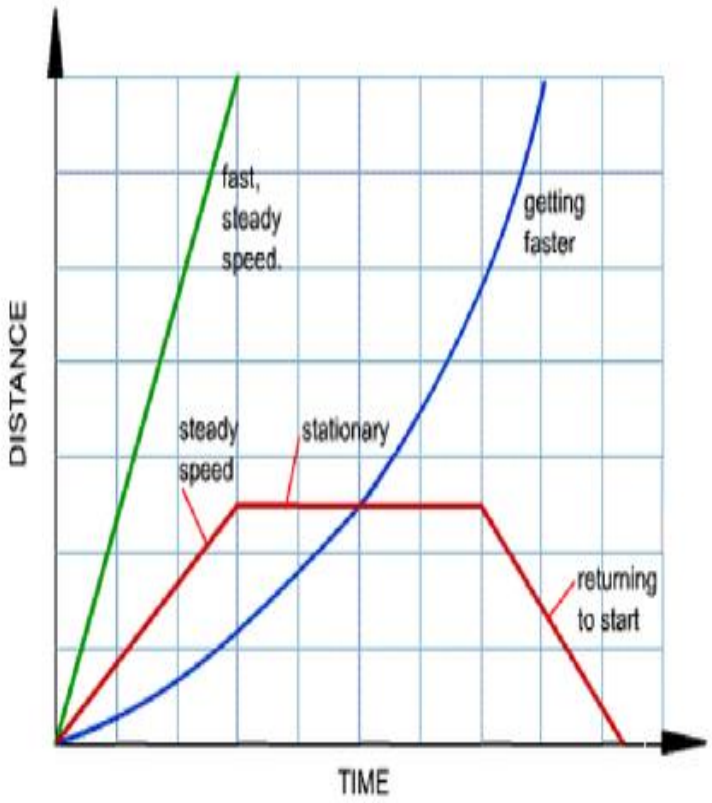


Speed (m/s) = distance (m) ÷ time (s)

Distance = Speed x time

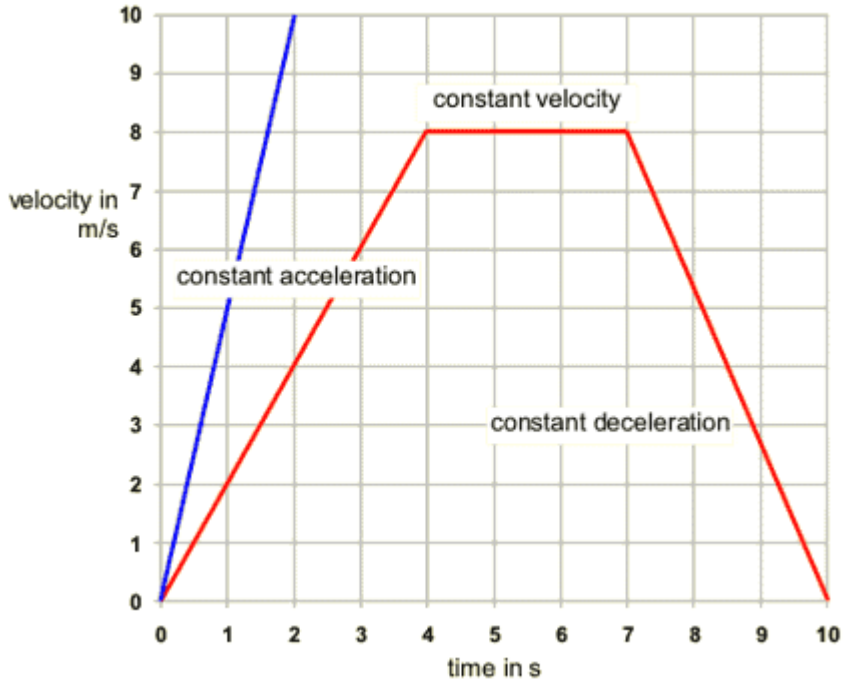
Time = Distance ÷ speed

Distance–time graphs. If an object moves along a straight line, the **distance** travelled can be represented by a **distance–time graph.** In a **distance–time graph**, the gradient of the line is equal to the speed of the object. The greater the gradient (and the steeper the line) the faster the object is moving.



Distance–time graphs

Speed-time graphs (extension)



When speed is increasing we say it is **accelerating.**
We measure acceleration in **m/s²**.
The steeper the gradient, the bigger the acceleration.
As the line is straight, it is a **constant acceleration.**
If the line is horizontal the object is travelling at a constant speed

Knowledge Organiser: Year 8 Summer Term 1 The internet

Summary

The internet is a network of billions of devices that allows you to access resources and connect with other people on our planet. We are getting close to 8 billion people on planet Earth, each human has one or more internet enabled devices . The world of the internet is always active and never takes a break. This allows you to complete assignments, research and homework at any time that suits you, on many devices. The world of internet never sleeps .

How does the internet work ?

Its a large number of computers that are in a **network** all over the world. It relies upon the **wire,** physical cables under our city streets and the cables on the ocean floors and **wireless. Wireless examples include** satellites in orbit around our planet and Wifi/3G/4G/5G —that makes this communication possible.

Computers need a set of rules to have a chat, they are not as smart as humans. Anyone using smart speaker or voice-controlled personal assistant such as Alexa will know the frustrations The **rules** computers use to speak to each are named **protocols.**

Careers include Cloud Computing Engineer, Computer Network Specialist, Information Security Specialist, Computer Support Specialist, Software/Application Developer, Games Designer and Web Developer

Key Vocabulary

Big Data	Lots of data produced from online activity
Http	Tells the computer to use the hyper text transfer **protocol** for communicating with the website
Internet	The internet is a global network of computers.
Internet of Things IoT	Devices that connect to the internet
Protocol	A set of rules or procedures for transmitting data between electronic devices
Smart Devices	A device that is connected using different protocols such as Bluetooth and Wi-Fi..
URL	A website's address .Each address contains the prefix 'http:' which tells the computer to use the hyper text transfer **protocol** for communicating with the website.
World Wide Web	World Wide Web is the part of the internet that can be accessed through websites

Internet Services

Internet Services allows us to access huge amount of information such as text, graphics, sound and software over the

Smart Devices

A **smart device** is an electronic **device**, generally connected to other **devices** or networks via different wireless protocols such as Bluetooth, NFC, Wi-

Internet of Things (IoT)

IoT is short for Internet of Things. The Internet of Things refers to the ever-growing network of physical objects that feature an IP address for internet connectivity, and the communication that occurs between these objects and other Internet-enabled devices and systems.

Big Data

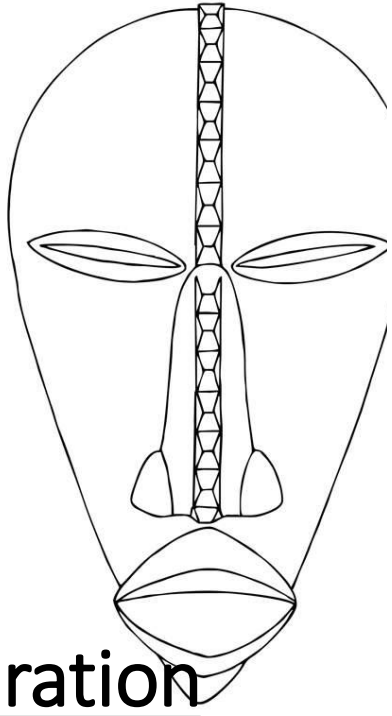
Big data is very large sets of data that are produced by people using the internet, and that can only be stored, understood, and used with the help of special tools and methods: Supermarkets use big data to track user behaviour and target customers with things they like.

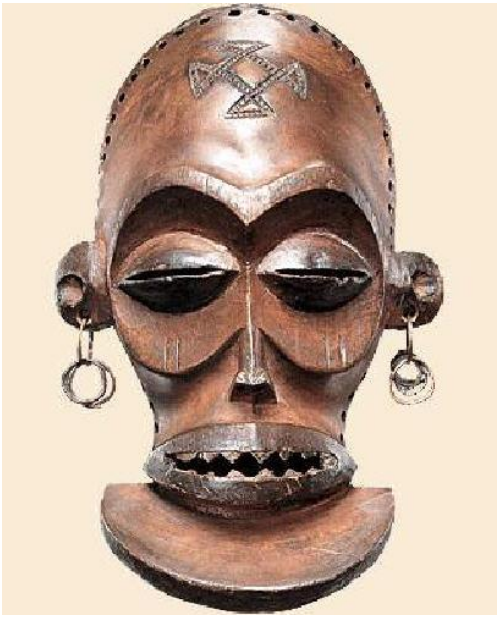
http://bit.ly/2KLZ1I5

KEEP CALM AND GO PRACTICE

BBC Bitesize

African mask inspiration





L.O. Investigate the African craft of mask making, how and why they are created.
Explore West African symbols & meanings

Understand how and why masks are created with some knowledge of the meanings behind some of the symbols.
Create patterns that have been influenced by the African culture and experiment with colour and text.
Think carefully about the patterns, colour and symbols and the composition of them on your mask.

1. In each circle below create a pattern that you could use on your mask. You may want to try some of the patterns above.

Pencil

Pen

Colour

Aim Higher-create your own pattern, think about repetition and how you could use it to create complex patterns

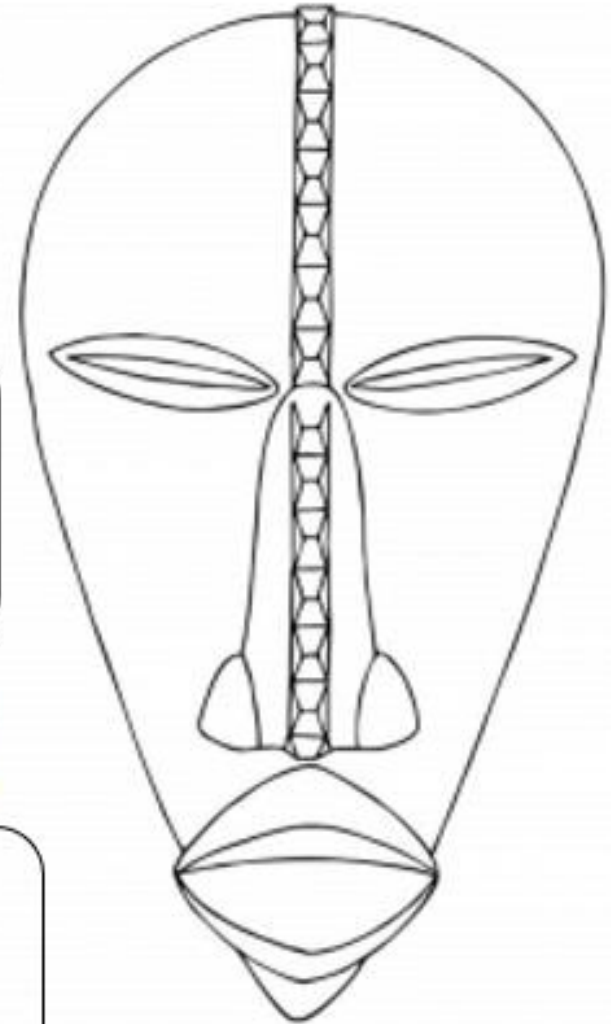
2. Pick 4 colours that you will use on your mask.

2. Try to draw two African symbols from below

4. The masks often expres: feelings or personal qualities. In the spaces below write a word in a style to express its meaning. For example...

ANGER

Aim Higher-create one o your own symbols to put your mask.



Activity: African Mask Planning Sheets

Year 8 Knowledge organiser:
Weather and Climate

Topics covered

- ✓ Weather types
- ✓ Weather vs Climate
- ✓ Measuring weather
- ✓ Rainfall and cloud types
- ✓ High and Low pressures
- ✓ Changing weather/fronts
- ✓ Atlantic storms
- ✓ Climate and climate change
- ✓ Global climates

Key Ideas:

1. I can describe weather in different places
2. I can explain the main causes of different weather and climate
3. I can measure/interpret weather and climate data
4. I can explain how rainfall, air pressure and air masses vary
5. I can explain what happens in Atlantic storms

Skills

- ❑ To interpret weather maps and symbols
- ❑ To use digital mapping to investigate Atlantic Storms/Hurricanes
- ❑ To analyse a range of climate data to describe climate variation
- ❑ To construct/ be familiar with weather measurement techniques
- ❑ To write a detailed piece of extended writing

Places and Environments

- ❖ Plymouth
- ❖ Newcastle
- ❖ The Lake District
- ❖ Wales
- ❖ UK
- ❖ Russia
- ❖ Egypt

Key Terms Used in this Unit

- ❑ Water vapour
- ❑ Climate
- ❑ Troposphere
- ❑ Precipitation
- ❑ Humidity
- ❑ Meteorologist
- ❑ Centigrade
- ❑ Okta's
- ❑ Barometer
- ❑ Anemometer
- ❑ Convectional rainfall
- ❑ Relief Rainfall
- ❑ Frontal Rainfall
- ❑ Cumulus
- ❑ Stratus
- ❑ Cirrus
- ❑ Warm front
- ❑ Cold front
- ❑ Depression
- ❑ Prevailing Wind

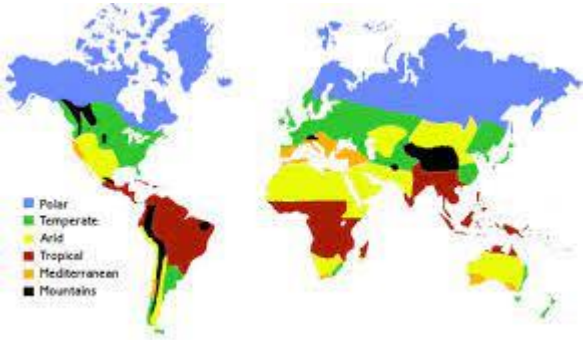
Weather forecasting
What does a weather forecast tell us?

Can you list 5 groups of people who depend on the weather forecast?

How has the weather been over the last week?

Make a note of the weather changes you have seen:

Sunlight hours/Rainfall/Cloud cover/Wind speeds



The world is separated into different climate zones

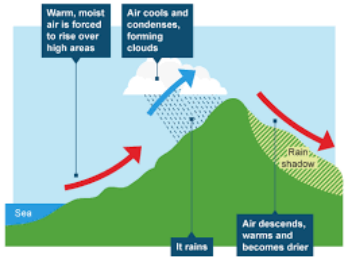
Which climate zone is the UK in?

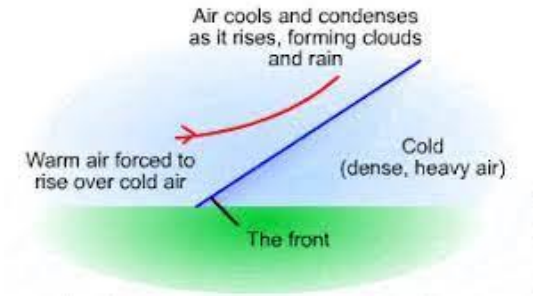
Why do you think the zones are in horizontal bands?

Rainfall – The UK gets a lot of it! We are very close to the Atlantic Ocean compared to other parts of Europe. We are also at a junction where cold air from the North meets warmer air from the south.

This means we have weather 'fronts' or boundaries where they meet and leads to rain. Where air is forced up over mountains we get 'relief' rainfall.

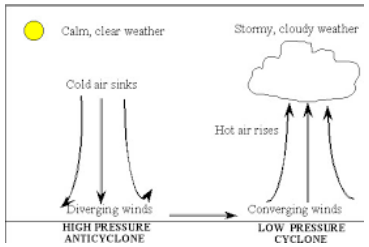
Can you name places in the UK that would get more 'relief' rainfall?





Warm air expands and rises. Cool air sinks.

Which type of air pressure has East Anglia received recently?



Weather recording instruments vary.

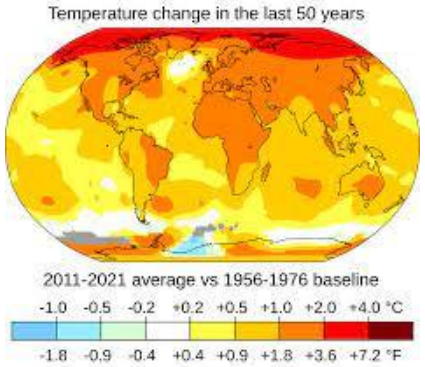
How could you design and make a home made rain gauge?
c

Anemometer	An instrument used to measure wind speed.	
Thermometer	An instrument used to measure temperature.	
Hygrometer	An instrument used to measure humidity = the amount of water vapor in the air.	
Wind Vane	An instrument used to show the direction of the wind.	
Barometer	An instrument used to measure atmospheric pressure = high and low pressure.	
Rain Gauge	An instrument used to measure rain.	

Storms – At certain times we get powerful storms off of the Atlantic.

Do you remember when a storm occurred?

What damage did this cause?



Our global climate is changing as greenhouse gases continue to rise.

The world is gradually warming.

How could this affect people and the environment?

German

Module 1: Ich liebe Ferien! (I love holidays!)

Here is the vocabulary you will need for Stimmt 2, Module 1.

You can hear the German by clicking on the Soundfile links on the electronic version of this Knowledge Organiser.

Früher und heute • Then and today	
Die Stadt ist/war ...	*The town is/was ...*
alt/modern	*old/modern*
klein/groß	*small/big*
schön/industriell	*beautiful/industrial*
historisch/touristisch	*historic/touristy*
laut/ruhig	*noisy/quiet*
Die Stadt hat/hatte ...	*The town has/had ...*
Es gibt/gab ...	*There is/was ...*
einen Strand	*a beach*
einen Marktplatz	*a town square*
einen Olympiapark	*an Olympic park*
einen Hafen	*a harbour*
eine Arena	*an arena*
eine Skatehalle	*a skate hall*
ein Einkaufszentrum	*a shopping centre*
ein Stadion	*a stadium*

Soundfile

In this Module you will learn how to:

- compare places in the past and now
- talk about what you did on holiday
- talk about how you travelled
- talk about the weather
- talk about holidays
- talk about problems on holiday

Wo hast du gewohnt? • Where did you stay?	
Ich habe ... gewohnt.	*I stayed ...*
in einem Hotel	*in a hotel*
in einem Ferienhaus	*in a holiday house*
in einem Wohnwagen	*in a caravan*
in einer Jugendherberge	*in a youth hostel*
auf einem Campingplatz	*on a campsite*
bei Freunden	*with friends*

Soundfile

German

Was hast du gemacht?

• What did you do?

Ich habe viele Sachen gemacht.	*I did a lot of things.*
Ich habe/Wir haben ...	*I/We ...*
Musik gehört.	*listened to music.*
Volleyball gespielt.	*played volleyball.*
einen Bootsausflug gemacht.	*did a boat trip.*
viele Souvenirs gekauft.	*bought lots of souvenirs.*
viel Fisch gegessen.	*ate lots of fish.*
die Kirche gesehen.	*saw the church.*
ein Buch gelesen.	*read a book.*
Ich bin zu Hause geblieben.	*I stayed at home.*

Soundfile

Wohin bist du gefahren?

• Where did you travel to?

Ich bin ... gefahren.	*I travelled ...*
nach Deutschland	*to Germany*
nach Wien	*to Vienna*

Soundfile

Wie bist du gefahren?

• How did you travel?

Ich bin ... gefahren.	*I travelled ...*
mit dem Auto	*by car*
mit dem Reisebus	*by coach*
mit dem Schiff	*by boat*
Ich bin geflogen.	*I flew.*
Ich bin zu Fuß gegangen.	*I walked.*

Soundfile

www.textivate.com
Username: openacademy
Password: surname700
Go to 'my resourses' to find your work.

Mit wem bist du gefahren?

• Who did you travel with?

Ich bin ... gefahren.	*I travelled ...*
mit meiner Familie	*with my family*
mit Freunden	*with friends*

Soundfile

German

Was hast du noch gemacht?
• What else did you do?

Ich bin ... gegangen.	*I went ...*
an den Strand	*to the beach*
in die Stadt	*into town*
windsurfen	*windsurfing*
kitesurfen	*kite surfing*
schwimmen	*swimming*
Ich bin ... gefahren.	*I went ...*
Wakeboard	*wakeboarding*
Snowboard	*snowboarding*
Ski	*skiing*
Banane	*banana boating*
Ich habe Snowtubing gemacht.	*I went snowtubing.*
Ich habe Eistennis gespielt.	*I played ice tennis.*

Soundfile

Wie ist/war das Wetter?
• How is/was the weather?

Es ist/war ...	*It is/was ...*
sonnig	*sunny*
kalt	*cold*
heiß	*hot*
wolkig	*cloudy*
windig	*windy*
neblig	*foggy*
Es regnet.	*It is raining./It rains.*
Es schneit.	*It is snowing./It snows.*
Es donnert und blitzt.	*There is thunder and lightning.*

Soundfile

Oft benutzte Wörter
• High-frequency words

nur	*only*
dort	*there*
zu	*too*
nicht	*not*
gar nicht	*not at all*
sehr	*very*
ungefähr	*approximately*
viel	*a lot*
viele	*lots, many*

Soundfile

Wann war das? • When was that?

in den Ferien	*in the holidays*
im Sommer/Winter	*in summer/winter*
letzten Sommer/Winter	*last summer/winter*
heute	*today*
gestern	*yesterday*
früher	*then, previously*

Strategie 1

Partnerarbeit

Two heads are often better than one when it comes to learning vocabulary. Working with someone else helps you to concentrate for longer and makes learning fun. Here are some activities to try with a partner:

- Play word association. Your partner says a word from Chapter 1 and you say a word that is related to it in some way. Be prepared to justify your thinking!
  - *Winter*
  - *Es schneit.*
- Play hangman or pictionary with the words from these ***Wörter*** pages.
- Beginnings and endings. Your partner says a word and your next word must start with the final letter of his/her word. Make the longest words you can!
  - *war*
  - *ruhig*
- Syllables. Say the first syllable of a word with two or more syllables. Your partner has to finish the word. Make the longest chain of words you can!
  - *win ...*
  - *... dig*
- Tandem testing. Take a section of words from these ***Wörter*** pages and test your partner. Begin by testing German into English and then say the English and ask for the German.

Look at page 132 to remind yourself of the five ***Strategien*** you learned in *Stimmt! 1*.

Read the Strategy Box for ideas on learning German vocabulary.

Soundfile

Year 8 History: Democracy and the Suffrage Movement

Britain prides itself in being a **DEMOCRACY**. This means people have an equal say in who runs the country and how. But in the 1800s it meant something very different to today...

The people were not equally represented through enough **CONSTITUENCIES**

To vote you had to be over 21, own property and **MALE (only 3% of men could vote)**

There were only two main parties: **WHIGS** and **TORIES**

Voting was not anonymous

GENERAL ELECTIONS were held every 7 **YEARS**

The Chartists are an example of a campaign group that tried to change this:

This was a **working-class movement**, which emerged in 1836 and was most active between 1838 and 1848. The aim of the **Chartists** was to gain political rights and influence for the working classes.

Chartists argued more men should be able to vote., MPs should be paid, secret ballot, annual elections, equal-sized electoral districts. They organised huge rallies and petitions to Parliament in the 1840s. Although there was a Chartist riot in Newport in 1839, Britain avoided the revolutions that swept Europe in 1848. Most of the Chartists demands eventually became law.

Timeline of Key Events	
1897	**NUWSS** formed. Millicent Fawcett is leader.
1903	WSPU formed by Emmeline Pankhurst and daughters.
1905	**Militant** Campaign begins
1908	Mass rally in London – 300,000 to 500,000 activists attend. Window smashing using stones with written pleas on them.
1909	**Hunger strike** and **force feeding** starts – Marian Wallace Dunlop becomes the first hunger striker.
1913	**Militant** bomb and **arson** campaigns and increasing arrests which results in the passing of the **"Cat and Mouse" Act.: hunger strikers** temporarily released then rearrested to prevent dying in police custody
1913	Emily Wilding Davison attempts to pin a **Suffragette** scarf onto the King's Horse at the Derby. She is struck by the horse and dies 4 days later.
1914	WW1 starts – **Suffragette** leaders urge women to join the war effort. **NUWSS** continues to campaign for recognition for their work.
1918	The **Representation of the People Act** is passed, allowing men over 21 and women over 30 to vote.

Emmeline Pankhurst – WSPU	Christabel Pankhurst – WSPU	Emily Wilding Davison – WSPU	Millicent Fawcett – NUWSS
Led the WSPU from October 1903. Took more **militant** action such as windows smashing, **arson** and **hunger strikes**. Arrested numerous times, went on **hunger strike** and was force fed. Died in 1928.	Became a speaker for the WSPU in 1905. She trained as a lawyer but could not practice as woman. Arrested with her mother. Fled England in 1912 for fear of being arrested again. Unsuccessfully ran for Parliament in 1918.	Joined WSPU in 1906. Became a **suffragette** full time. Frequently arrested for number of crimes inc. setting fire to post box. By 1911, become increasingly **militant**.	Leading **suffragist** and led **NUWSS**. Played a key role in getting women the vote. Dedicated to using **constitutional** means, and argued that **militancy** was counter-productive.

Year 8 History: WW1

Timeline of Key Events	
28 June 1914	Assassination of Arch-Duke Franz Ferdinand
4 August	Britain declares war on Germany
August to December 1914	Germany's Schlieffen Plan fails to defeat France and Britain quickly; system of trenches is dug from Switzerland to the English Channel: **STALEMATE**
April 1915	Second Battle of Ypres – poison gas used for the first time
31 May-1 June 1916	Battle of Jutland – the only major sea battle of the war proves inconclusive
1 July – Nov	Battle of the Somme
6 April 1917	USA declares war on Germany
March 1918	Russia signs the Treaty of Brest Litovsk with Germany after the Bolshevik Revolution
9 Nov 1918	Kaiser Wilhelm abdicates
11 Nov 1918	Germany signs armistice, ending the war

Why did British men join up in 1914?	
Patriotism	British men were brought up to love their King and country
Social pressure	Fear of being called a coward or being given a white feather by a woman
Sense of adventure	Many British men had never travelled abroad – this was a chance to see the world!
Propaganda	British propaganda posters used very persuasive techniques
Belief in a quick victory	Many men thought that the war would be 'over by Christmas

Long-Term Causes of World War One

Militarism – the arms race between Britain and Germany to build Dreadnaughts resulted in increasing tension and conflict between them

Alliances – the Triple Alliance (Germany, Austria-Hungary and Italy) and Triple Entente (Britain, France and Russia) had agreed to support each other in a war

Imperialism – Britain and France had large empires overseas. Germany wanted an empire too, but most of the available land had already been taken, resulting in tension between the 'great powers'

Short-Term Causes of World War One:

Assassination of Franz Ferdinand – Serbian nationalist Gavrilo Princip shot and killed the heir to the Austro-Hungarian throne, along with his wife, while was visiting Sarajevo. This caused Austria to declare war on Serbia, which led to Russia attacking Austria and a domino effect of other nations joining in...

Which new weapons helped Britain to win the war?

Tanks: First used in 1916, they broke through German defence's and sheltered British troops in getting across **NO MANS LAND**

Poison gas: Although cruel and at the mercy of the weather, it instilled fear into soldiers on both sides

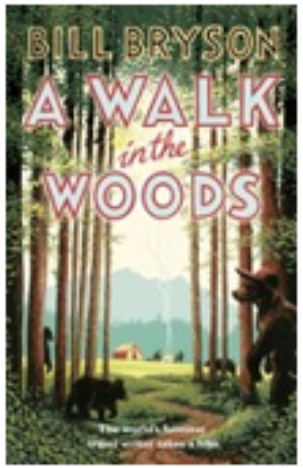
Airplanes: Very useful for reconnaissance and bombing / preventing bombing raids

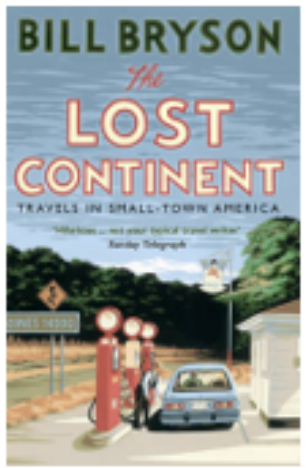
Artillery: Forced Germans to remain in their shelters while the British advanced

Why did Germany surrender in November 1918? American entry into the war, Failed German/Ludendorff offensive, German civilians starving due to the Allied Blockade of German ports. This all put pressure on the Kaiser to surrender.

Activity: Draw a timeline of events. Use the table of key events as a starting point. Try to find sources that link to each event. Augment your timeline with other events during the war.

Recommended Reading





Key terms and spellings

Cynicism	Article
Sarcasm	Blog
Irony	Colloquial
Bathos	Landscape
Anecdote	Synonym
Humour	Atmospheric

Sentence types

Simple – one main clause

Compound – two main clauses joined together by a connective, such as 'and'

Complex – a sentence containing a main clause and at least one subordinate clause

Fragment – a sentence that is incomplete on its own, but can create an impact e.g. Silence.

TIPTOP (paragraphs)

Ti – is for Time

P – is for Place

To – is for Topic

P – is for Person (a new speaker)

Linguistic devices

Simile – a comparison using as, like or as if

Metaphor – a comparison, but more literal than a simile (no words such as 'as', 'like' or 'as if')

Personification – bringing an inanimate object, like a tree, to life e.g. 'the trees danced in the wind'

Alliteration – the same sound at the beginning of each word e.g. slithering silky snakes

Lists – a number of items or reasons, often used to emphasise

Structure – shifts (a change in time, place, person, topic, idea or a change from narrative to dialogue or description); zooms (zooming in on details and giving an in-depth description for the reader); Sentencing and paragraphing for effect (using sentence types to change the pace and impact on the reader's emotions); links and connections (ideas or images that remind the reader of the importance of something).

Tasks

1. Write about a place you would love to visit. What have you learned about it that has made you want to go? Describe the scenery and any other aspects of the place to tell me why it is so wonderful. Try to use a range of vocabulary to help communicate your thoughts, feelings and the way the place looks, smells, sounds and feels.
2. Write a poem about a place you have visited. Consider the feelings you had whilst you were there, as well as the place itself. You should try to incorporate sensory language, as poems are about making the reader or listener feel something about a topic through imagery and sound.
3. Create a leaflet or brochure for a theme park or resort. Use images and persuasive language to encourage them to come to the place. Use headings and subheadings to make the reader interested and entertained.
4. Read the extract on the next page and highlight where the writer has used effective vocabulary and linguistic devices to bring the place to life for the reader.
5. Using the same extract, annotate for structural devices that impact on the reader. Use the box at the bottom of the first page to help you to identify these.
6. Use the work you have done in tasks 4 and 5 to write an analysis of the effects of the writer's language and structure choices on the reader and explain why they are effective. Use quotes to support your points. Use paragraphs and aim higher by making links between each of them.
7. Read the extract on page 3. How does the writer use different forms of humour to entertain the reader? Write to explain, using quotes and naming the specific type of humour that the writer has used (the box at the top of the page will help you to do this).
8. Write your own humourous account of a place you have visited. Try to use as many of the types of humour you have learnt from task 7 as you can.
9. If you can get online, use this link and explore the blog. What makes the blog visually appealing? What types of things does the blogger write about? Consider and answer these questions in writing. https://www.alexinwanderland.com/
10. Create your own blog. You could write about Norwich. Or, if you have access to the internet, you could write it about another 1-2 countries you research. Remember to write as if you are there or have been there recently and remember that your audience will want to know what it would be like for them to visit and to be given some advice on how to navigate the place, understand its culture and know where to go/what to look at. You could also write about the people, attractions and the food.

A Walk in the Woods

Bill Bryson

We hiked till five and camped beside a tranquil spring in a small, grassy clearing in the trees just off the trail. Because it was our first day back on the trail, we were flush for food, including perishables like cheese and bread that had to be eaten before they went off or were shaken to bits in our packs, so we rather gorged ourselves, then sat around chatting idly until persistent and numerous midge-like creatures (no-see-ums, as they are universally known along the trail) drove us into our tents. It was perfect sleeping weather, cool enough to need a bag but warm enough that you could sleep in your underwear, and I was looking forward to a long night's snooze – indeed was enjoying a long night's snooze – when, at some indeterminate dark hour, there was a sound nearby that made my eyes fly open. Normally, I slept through everything – through thunderstorms, through Katz's snoring and noisy midnight pees – so something big enough or distinctive enough to wake me was unusual. There was a sound of undergrowth being disturbed – a click of breaking branches, a weighty pushing through low foliage – and then a kind of large, vaguely irritable snuffling noise.

Bear!

I sat bolt upright. Instantly every neuron in my brain was awake and dashing around frantically, like ants when you disturb their nest. I reached instinctively for my knife, then realised I had left it in my pack, just outside the tent. Nocturnal defence had ceased to be a concern after many successive nights of tranquil woodland repose. There was another noise, quite near.

The Lost Continent

Bill Bryson

Cynicism – seeing the worst in someone or something; to be cynical is the opposite of looking at things positively.	**Irony –** the expression of one's meaning by using language that normally signifies the opposite, typically for humorous or emphatic (clear and forcible expression) effect.
Bathos – anticlimax created by an unintentional lapse in mood from the sublime (excellence) to the trivial (small and unimportant) or ridiculous.	**Sarcasm –** to mock or convey contempt (looking down at someone or something).

I had to drive to Minneapolis once, and I went on a back road just to see the country. But there was nothing to see. It's just flat and hot, and full of corn and soya beans and hogs. Every once in a while, you come across a farm or some dead little town where the liveliest thing is the flies. I remember one long, shimmering stretch where I could see a couple of miles down the highway and there was a brown dot beside the road. As I got closer I saw it was a man sitting on a box by his front yard, in some six-house town with a name like Spigot or Urinal, watching my approach with inordinate interest. He watched me zip past and in the rear-view mirror I could see him still watching me going on down the road until at last I disappeared into a heat haze. The whole thing must have taken about five minutes. I wouldn't be surprised if even now he thinks of me from time to time.

He was wearing a baseball cap. You can always spot an Iowa man because he is wearing a baseball cap advertising John Deere or a feed company, and because the back of his neck has been lasered into deep crevasses by years of driving a John Deere tractor back and forth in a blazing sun. (This does not do his mind a whole lot of good either.) His other distinguishing feature is that he looks ridiculous when he takes off his shirt because his neck and arms are chocolate brown and his torso is as white as a sow's belly. In Iowa it is called a farmer's tan and it is, I believe, a badge of distinction.

YEAR 8 - DEVELOPING GEOMETRY... Angles in parallel lines and polygons

What do I need to be able to do?

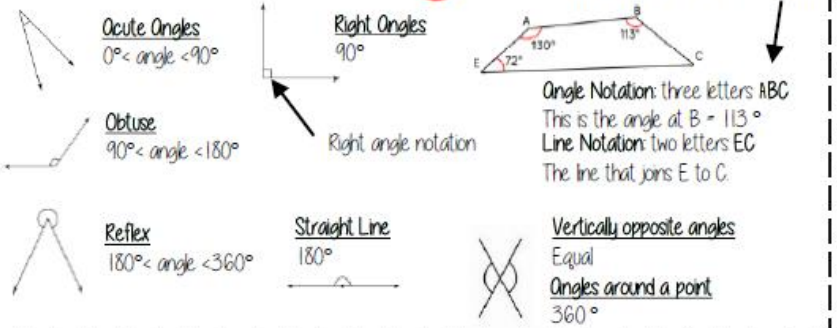
By the end of this unit you should be able to:

- Identify alternate angles
- Identify corresponding angles
- Identify co-interior angles
- Find the sum of interior angles in polygons
- Find the sum of exterior angles in polygons
- Find interior angles in regular polygons

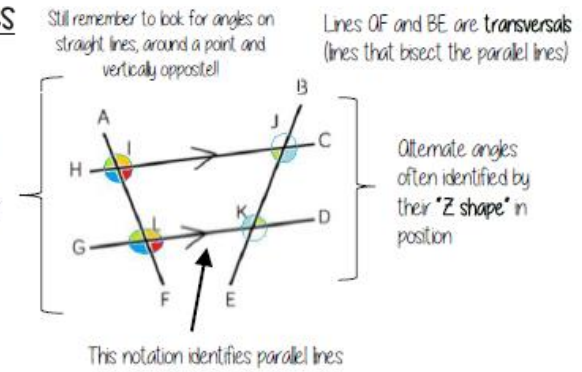
Keywords

Parallel: Straight lines that never meet
Angle: The figure formed by two straight lines meeting (measured in degrees)
Transversal: A line that cuts across two or more other (normally parallel) lines
Isosceles: Two equal size lines and equal size angles (in a triangle or trapezium)
Polygon: A 2D shape made with straight lines
Sum: Addition (total of all the interior angles added together)
Regular polygon: All the sides have equal length, all the interior angles have equal size.

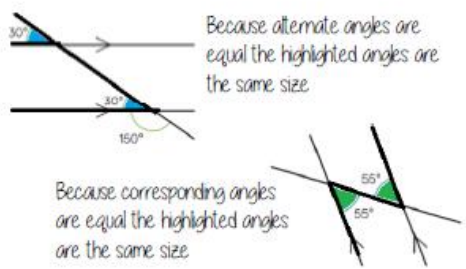
Basic angle rules and notation



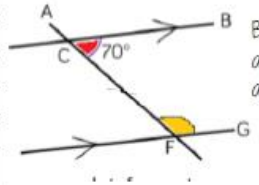
Parallel lines



Alternate/ Corresponding angles

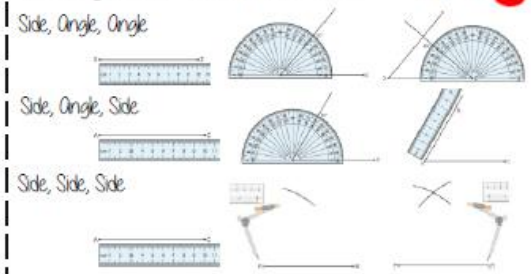


Co-interior angles



Triangles & Quadrilaterals

Link to steps



Parallel lines

Scan here

Triangles

Scan here

Properties of Quadrilaterals

Square
All sides equal size
All angles 90°
Opposite sides are parallel

Rectangle
All angles 90°
Opposite sides are parallel

Rhombus
All sides equal size
Opposite angles are equal

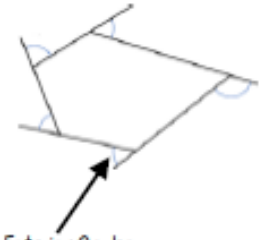
Parallelogram
Opposite sides are parallel
Opposite angles are equal
Co-interior angles

Trapezium
One pair of parallel lines

Kite
No parallel lines
Equal lengths on top sides
Equal lengths on bottom sides
One pair of equal angles

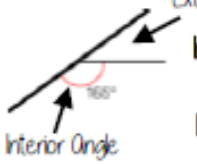
Sum of exterior angles

Exterior angles all add up to 360°



Exterior Angles
Are the angle formed from the straight-line extension at the side of the shape

Using exterior angles



Interior angle + Exterior angle = straight line = 180°
Exterior angle = 180 – 165 = 15°

Number of sides = 360° ÷ exterior angle
Number of sides = 360 ÷ 15 = 24 sides

Sum of interior angles

(number of sides – 2) x 180

Interior Angles
The angles enclosed by the polygon

This is an irregular polygon – the sides and angles are different sizes

Sum of the interior angles = (5 – 2) x 180

This shape can be made from three triangles
Each triangle has 180°

Sum of the interior angles = 3 x 180
= 540°

Remember this is all of the interior angles added together

Missing angles in regular polygons

Exterior angle = 360 ÷ 8 = 45°

Interior angle = $\frac{(8-2) \times 180}{8}$ = $\frac{6 \times 180}{8}$ = 135°

Exterior angles in regular polygons = 360° ÷ number of sides

Interior angles in regular polygons = $\frac{(\text{number of sides} - 2) \times 180}{\text{number of sides}}$

Sum of interior angles

Scan here

Properties of Quadrilaterals

Scan here

A job that relies on geometry: CAD Engineer

A CAD engineer, or computer aided design engineer, creates construction plans for cars, bridges, skyscrapers or other buildings using software systems. Their main responsibilities include designing 2D or 3D images for construction workers to accurately present complex projects, establishing budgets and timelines and analysing the data of certain projects to develop creative solutions to any design issues.

YEAR 8 - DEVELOPING GEOMETRY...

Area of trapezia and Circles

What do I need to be able to do?

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

- Recall area of basic 2D shapes
- Find the area of a trapezium
- Find the area of a circle
- Find the area of compound shapes
- Find the perimeter of compound shapes

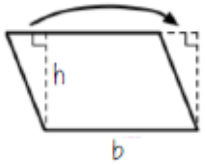
Keywords

Congruent: The same
Area: Space inside a 2D object
Perimeter: Length around the outside of a 2D object
Pi (π): The ratio of a circle's circumference to its diameter.
Perpendicular: At an angle of 90° to a given surface
Formula: A mathematical relationship/ rule given in symbols. E.g. b x h = area of rectangle/ square
Infinity (∞): A number without a given ending (too great to count to the end of the number) – never ends
Sector: A part of the circle enclosed by two radii and an arc.

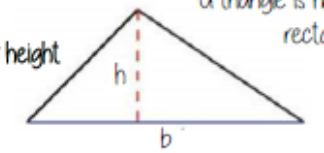
Area – rectangles, triangles, parallelograms

Rectangle
Base x Height

Parallelogram/ Rhombus
Base x Perpendicular height



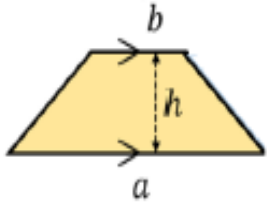
A triangle is half the size of the rectangle it would fit in



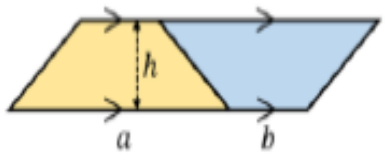
Area of a trapezium

Area of a trapezium

$$\frac{(a+b)\times h}{2}$$



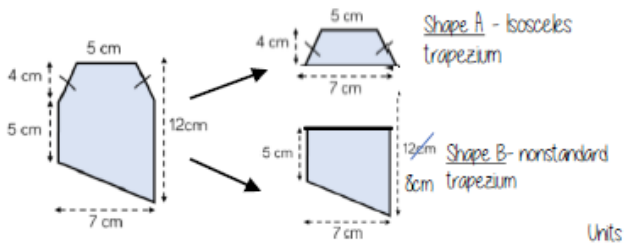
Why?



- Two congruent trapeziums make a parallelogram
- New length (a + b) x height
- Divide by 2 to find area of one

Compound shapes

To find the area compound shapes often need splitting into more manageable shapes first. Identify the shapes and missing sides etc. first.



Shape A + Shape B = total area

$$\frac{(5+7)\times 4}{2} + \frac{(5+8)\times 7}{2} = 24 + 45.5 = 69.5\text{cm}^2$$

Units

Parallelograms

Triangles

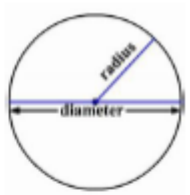
Trapezium

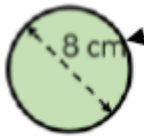
Compound Shapes

Area of a circle (Non-Calculator)

Read the question – leave in terms of π or if $\pi \approx 3$ (provides an estimate for answers)

Area of a circle
$\pi \times \text{radius}^2$





Diameter = 8cm
∴ Radius = 4cm

$\pi \times \text{radius}^2$
$= \pi \times 4^2$
$= \pi \times 16$
$= 16\pi \text{ cm}^2$

Find the area of one quarter of the circle

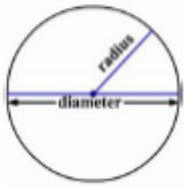
Radius = 4cm

Circle Area = $16\pi \text{ cm}^2$
Quarter = $4\pi \text{ cm}^2$

Area of a circle (Calculator)

How to get π symbol on the calculator

Area of a circle
$\pi \times \text{radius}^2$



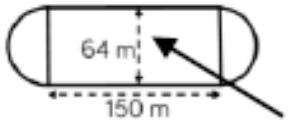
It is important to round your answer suitably – to significant figures or decimal places. This will give you a decimal solution that will go on forever!

Compound shapes including circles

Circumference
$\pi \times$ diameter

Compound shapes are not always area questions. For Perimeter you will need to use the circumference

Spotting diameters and radii



This dimension is also the diameter of the semi circles

Don't need to halve this because there are 2 ends which make the whole circle

Arc lengths = $\pi \times 64$
$= 64\pi$

Arc lengths + Straight lengths = total perimeter

$= 64\pi + 150 + 150$
$= (300 + 64\pi)$ m
OR = 501.1 m

Still remember to split up the compound shape into smaller more manageable individual shapes first

Area of a circle

Scan here

A job that relies on geometry: **Interior Designer**

An interior designer builds plans for living or working spaces from start to finish. Their main duties include sketching design plans according to clients' needs, goals and preferences, sourcing products or materials to use in the space, deciding on prices to complete projects and using computer applications to conduct the design process.

YEAR 8 - DEVELOPING GEOMETRY... Line symmetry and reflection

What do I need to be able to do?

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

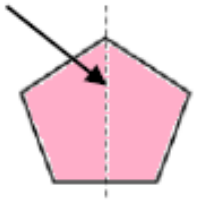
- Recognise line symmetry
- Reflect in a horizontal line
- Reflect in a vertical line
- Reflect in a diagonal line

Keywords

Mirror line: a line that passes through the center of a shape with a mirror image on either side of the line
Line of symmetry: same definition as the mirror line
Reflect: mapping of one object from one position to another of equal distance from a given line.
Vertex: a point where two or more-line segments meet
Perpendicular: lines that cross at 90°
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)

Lines of symmetry

Mirror line (line of reflection)



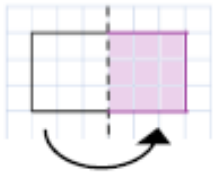
Shapes can have more than one line of symmetry.... This regular polygon (a regular pentagon has 5 lines of symmetry)

Rhombus
two lines of symmetry

Parallelogram
No lines of symmetry

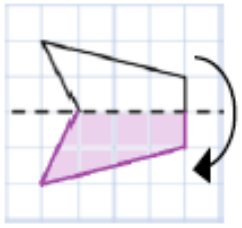
A circle has an infinite amount of lines of symmetry

Reflect horizontally/ vertically (1)



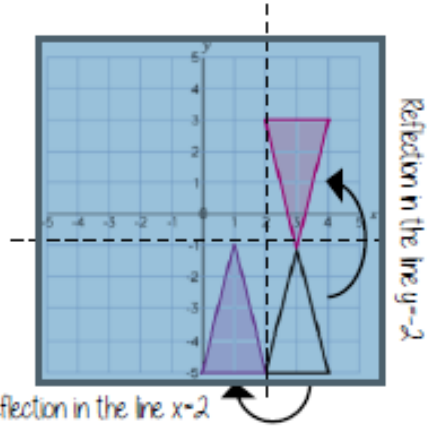
Note: a reflection doubles the area of the original shape

Reflection in a vertical line



Reflection in a horizontal line

Reflection on an axis grid



Reflection in the line y=-2

Reflection in the line x=-2

Reflective Symmetry

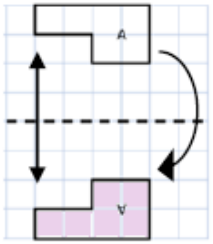
Rotational Symmetry

Vertical Lines

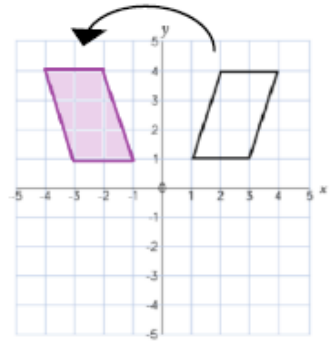
Horinzontal Lines

Reflect horizontally/ vertically (2)

All points need to be the same distance away from the line of reflection



Reflection in the line y axis – this is also a reflection in the line x=0



Lines parallel to the x and y axis

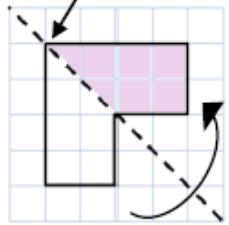
REMEMBER

Lines parallel to the x-axis are y = ____

Lines parallel to the y-axis are x = ____

Reflect Diagonally (1)

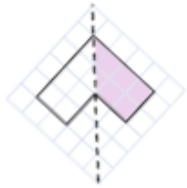
Points on the mirror line don't change position

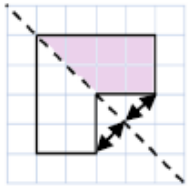


Fold along the line of symmetry to check the direction of the reflection

Turn your image

If you turn your image it becomes a vertical/ horizontal reflection (also good to check your answer this way)



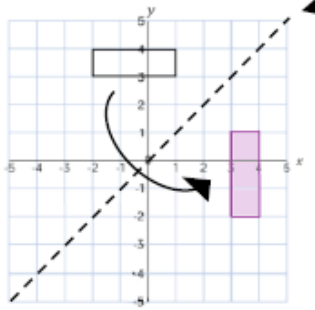


Drawing perpendicular lines

Perpendicular lines to and from the mirror line can help you to plot diagonal reflections

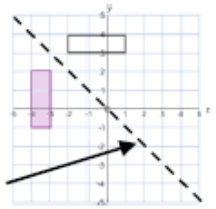
Reflect Diagonally (2)

This is the line y = x (every y coordinate is the same as the x coordinate along this line)



This is the line y = - x

The x and y coordinate have the same value but opposite sign



Turn your image

If you turn your image it becomes a vertical/ horizontal reflection (also good to check your answer this way)

Reflections

Scan here

Perpendicular Lines

Scan here

Parallel Lines

Scan here

A job that relies on geometry: **Fashion Designer**

Fashion designers create and assist in producing different clothing items, shoes and accessories. Their main duties are choosing fabrics, materials, styles, prints and colors, identifying upcoming fashion trends, traveling to fashion shows and deciding on seasonal themes for new product lines.

Year 8 RS: What does it mean to have a good life?

Key words	
Good	To please and be kind.
Evil	Immoral and wicked.
Freedom	The right to act, speak or think as one wants.
Ethics	Moral principles that govern a person's behaviour.
Scripture	Sacred writings of a religion.
Virtue	Behaviour showing high moral standards
Liberal	To be favourable or respectful to individual rights and freedoms

You're only here once, right? You need to live each day as if it's your last. Make the most of every moment and enjoy yourself. Life is too short to be filled with regret, so my plan is to have as much fun and as many laughs as I possibly can!!!

Life is what you make it! I focus on trying to be the best person that I can possibly be. You never know what is around the corner, but if anything sudden ever happened, I would want to know that I'd made a positive impact on the world and that people thought good things about me because you are only here once.

Life is all about give and take, supporting each other in your community. It's important to help and take care of those around you.

Buddhism– What is a good Life.

The Buddha was born in Lumbini, in India, in 563 BC. Before he became the Buddha he was known as Prince Siddhartha Gautama.

Before he was born, Gautama's mother – Queen Maya – had a dream that a white elephant entered her womb. Ten months later she gave birth to her son on a full moon night while on her way home to see her parents. When he was born it is said that he leapt onto the ground and where his feet touched it a lotus flower sprang up. Astrologers predicted he would either be a great ruler or a great religious teacher.
Prince Gautama grew up surrounded by luxury. His father tried to keep him in the palace as he wanted him to rule the kingdom. Astrologers had predicted that if he saw suffering he would become a great religious teacher. Gautama married at the age of 16 and had a son, Rahula. However, he became dissatisfied with his life. Whenever Gautama went out in his chariot, his father sent servants ahead to try to get all the blind, sick and old

people out of sight. Even so, Gautama saw four sights in the picture above. They were to change his life. After seeing the first three of these, Gautama realised that he too would one day grow old and die. He was no longer satisfied with his life of luxury, but felt a great love for ordinary people, and he wanted to help them to overcome their suffering. The last person that Gautama saw was a sadhu, a holy man, who had given up all his possessions to live a spiritual life Gautama was certain that he should do the same. He thought about this for a long time, and then one night, he left his wife and son in the palace.

Humanism– What is a good Life

As with all animals, we are born, some of us reproduce, and we all eventually die. Unlike other animals, we worry about where our lives are going. Many of us can make important choices, which influence how our lives turn out. Within limits, we can choose to work or be idle; we can choose whom to befriend, whether to have children, and what kind of job or career we follow. Throughout history, human beings have asked themselves the question of what is the best way to live. What makes life worthwhile? What, if anything, makes life meaningful? These questions raise further questions of how we should treat others. Humanists believe that we have an obligation to make responsible and informed choices to help our lives and the lives of others go in a worthwhile and fulfilling direction.

We are very small and insignificant in comparison with the vast size and age of the universe; but size is irrelevant to the question of meaning. Some people think that if there is no life after death and if we are limited in time, then life is somehow meaningless and pointless.

As we have seen, Prince Gautama left the palace and went into the city. He saw four sights that changed his life. **An old person, an ill person, a corpse and a holy person.** He realised that life involves suffering. He gave up his life as a prince, and set off to find out why people suffer. He was 29 years old. Channa, his charioteer, drove him out of the city. Then Gautama got out of the chariot. He cut off his hair, took off his fine clothes and, wearing just a simple robe, he set out on the homeless life. For six years Gautama lived a harsh life, training himself to have no food for long periods of time, and eating just enough to survive. It is said that his fasting nearly killed him. He grew so thin that you could see his back-bone through his stomach.

Finally, he realised that this kind of discipline was doing him no good. It had not helped him to find the truth about life, so he gave it up. He went down to the river to wash, where a milkmaid offered him some rice to eat, which he accepted.

The other holy men saw him give up his fast and thought that he was going back to his life of luxury in the palace, so they deserted him. He had not achieved what he had set out to do, but he was still determined to find out how to overcome suffering. Gautama sat under a tree, and said that he would not get up again until he had achieved enlightenment. Sitting there, many images went through his mind, tempting him to give up; other images were frightening, but none of them made him change his mind. He sat under the tree all night, struggling with these temptations. Then, as dawn approached, he is said to have gained enlightenment. From then on, Gautama became known as 'the Buddha'. His followers do not think that he is a god. They describe him as an enlightened human being. In other words, they claim that the Buddha was able to see and understand the truth about life.

Buddhism does not set down rules which everyone must obey all the time out of fear of being punished. There are two reasons for this:

There is no god in Buddhism to reward or punish people, or to set down laws.

No two people are the same, so you need to judge what is right in your own circumstances, not simply obey laws.

Year 8 Spring Term Knowledge Organiser

Disco – 1970's

- ✓ a time signature of 4/4.
- ✓ a fast tempo = 120bpm
- ✓ four-on-the-floor rhythms.
- ✓ guitar driven energy often with syncopated bass lines.
- ✓ luscious orchestral arrangements.
- ✓ vocals with reverb.
- ✓ verse and chorus structure.
- ✓ escapist lyrics about love and dancing.

Hip-Hop – 1980-1990's

1979 is considered the year when rap music became mainstream and it started with a song called 'Rapper's Delight' by the SugarHill Gang. As the genre grew in popularity, it consisted mostly of DJ's trying a hand a rhyming lyrics and branching out of just playing other people's records. America is considered the birthplace of the rap genre, hence why it is still dominated by American artists.

Rap lyrics were initially about dancing, community and music but it gradually became a mouthpiece for political and cultural differences, resulting in a lot of the rap music we hear today talking about injustice, fame and race.

EDM – 2000 -

- ✓ Music made with electronic instruments such as synthesizers or computer programmes with pre-recorded sounds
- ✓ Music made for large audiences, crowds and festivals
- ✓ Loud, fast music with frequent bass drops
- ✓ Repetitive sounds with short melodic or vocal hooks
- ✓ Encompasses sub genres such as drum and bass, techno, trance and house
- ✓ Primarily played or created by DJ's
- ✓ David Guetta, Diplo, Tiesto, Calvin Harris, Avicci

Chords with just a letter e.g. E = MAJOR
To create the major chord – starting note + 4 semitones + 3 semitones

Chords with a letter & m e.g. Am – MINOR
To create a minor chord – starting note + 3 semitones + 4 semitones

Chords with a letter & maj7 e.g. Cmaj7 = MAJOR 7th
To create the major 7th chord – starting note + 4 semitones + 3 semitones + 4 semitones (there should be 4 notes in total)

Chords with a letter & m7 e.g. Bm7 = MINOR 7th
To create a minor 7th chord – starting note + 3 semitones + 4 semitones + 3 semitones

YEAR 8 DRAMA – WORKING WITH TEXT

Meaning can be shown both physically and vocally. The following are skills used by actors to communicate characters' personality and intention – this is known as **Characterisation.**

- **Body Language** – Showing what you feel by the way you stand.
- **Gesture** – how you communicate with your hands and/or arms.
- **Facial expression** – showing what you feel on your face.
- **Voice tone** – the emotion that you are putting into your voice. E.g. an angry tone of voice.
- **Pitch** – how high or low you are speaking.
- **Pace** – how fast or slow you are speaking.
- **Pause** – Allowing breaks in the speaking
- **Accent** – changing the way you speak to show where you are from.
- **Status** – how important your character is. This can be shown by the way you stand, talk, walk etc…

Meaning can also be shown through the **design elements**.

Costume is what the character wears and is used to show more about their personality. It can show their age, status, and the time period the play is set in.

Lighting is used to create atmosphere and show the time of day. This is done using colour, angle, and intensity. For example, a dimly lit stage with a cold blue light may create an atmosphere of mystery or suspense, set in the early evening.

Sound is used to add to the atmosphere, heighten emotions and can also be used to show locations for example a wind blowing and a wolf howling can create an eerie atmosphere.

Set includes the scenery, and anything on the stage which is used to show when and where the play takes place. It is used to create levels and make the performing space look visually interesting.

Norfolk County Council

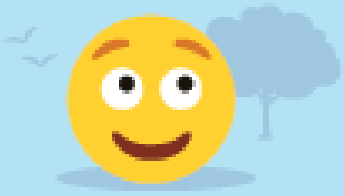
Five Ways to Wellbeing

Activity Sheet

Use the challenges on this sheet to help your child feel better and find ways of managing their own mental wellbeing.

Why not cut them all out and encourage them to choose one or two per day to do. Once they have tried them all they can pick their favourites to do regularly.

Be active

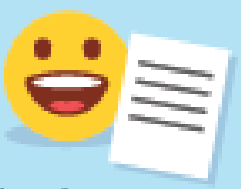


Do a half an hour walk around the local area and write about what you saw when you get back including how it made you feel.

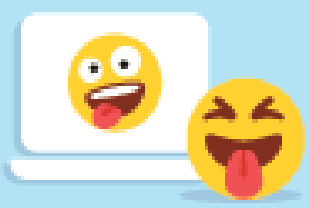
Set up an indoor obstacle course to get your heart rate up

Have a kitchen disco with your household – each pick your favourite songs and do your most energetic dancing together.

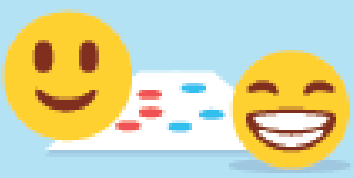
Connect



Write a letter to someone that you haven't seen for a long time. Ask how they are and tell them how you have been feeling. Draw pictures or take photos to print and go with it.



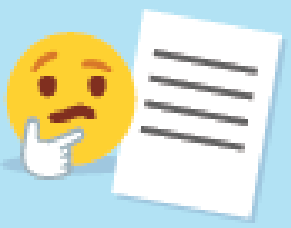
Make contact with a friend from school – ask a parent to help you set up a video call so that you can see each other and talk.



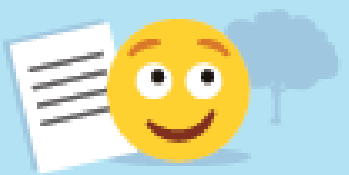
Connect with those you live with by spending time playing a board game together.

Take notice

Sit outside and listen to the birds sing, and notice what other sounds you can hear.



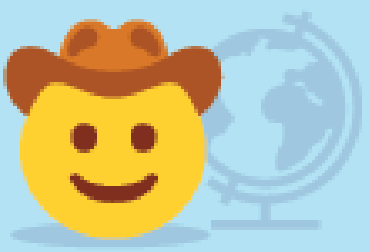
Write a list of the three things you look forward to doing the most when we are allowed to do them again.



Go for a walk in your local park and look at the trees around you noticing what colour the leaves are. Write about what you see and how it made you feel.

Learn

Choose something you are interested in and spend some time reading about it and learning interesting facts to tell people.



Choose a country you might like to visit one day and learn five words from the language

Learn to cook a meal with the person in the household that usually cooks. Help them with the preparation and the clearing up.

Give

Make a homemade card to send to a friend or family member that you can't see at the moment.

Write a list of the things you appreciate most about the people you live with and let them see it.

Help with some of the chores around the house whether it's doing the hoovering or pairing the socks.

If you are worried about a child or young person or would like more information advice and guidance about their mental health and wellbeing visit: https://www.justonenorfolk.nhs.uk/mentalhealth or call 0300 300 0123