



# Knowledge Organisers

Year 7

Summer Half Term 1

*'Practice of what is taught'*

Name: .....

Tutor: .....

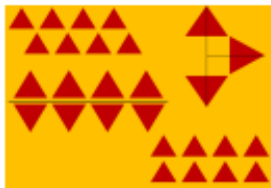
House: .....

# Year 7 - Cultural Arts project

## Key knowledge & skills

**Discuss different cultural arts and crafts.**

**Observational drawing of artefacts from different cultures, looking at how colour, texture and pattern are used.**



**Understanding pattern**—you will be able to recognise patterns and develop your knowledge on how they are created in different ways. You will do this through wax resist techniques.



**Symbolism**—understanding how shapes and imagery can be used to create symbols which have a meaning, sometimes obvious sometimes hidden. Adinkra symbols/Symbolic alphabets are a key example to look at.

**Printing**—learning different ways to print onto fabric/paper. Stencil printing to create blocks of colour.

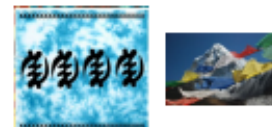


**Tie dyeing** – Using elastic bands, beads and dye to create patterns in fabrics. Understanding different techniques such as pleating, twisting and folding to create different patterns on fabric.



**Hand embroidery**—learning basic stitches such as running stitch, back stitch and more potentially complex stitches such as cross stitch and chain stitch.

**Designing your own work**—being able to understand textile techniques and how they can be combined together to create a fabric final outcome.



### Key terms and techniques

pattern colour textured print  
 bold repeated layered  
 historical recycled cultural  
 clothing natural man made cloth  
 fabric garment mask  
 practical expressive personal  
 symbolic tribal embellishment  
 decorative ceremonial woven  
 embroidered carved sculpted  
 painted sewn

### Key descriptive words

tie dyeing printing dyeing  
 weaving embroidery sewing  
 beading loom stencil printing  
 block printing embellishing  
 crayons dyes drawing inks  
 printing paints needle threads  
 recycling masks designing  
 development recording planning  
 wax resist layering composition  
 pattern sculpting

# Key artefacts and skills



Symbols have been used for centuries. They have been used for ancient alphabets such as hieroglyphics to symbols for human traits/emotions such as Adinkra symbols. They can be applied to all sorts of arts and crafts such as pottery, fabrics, jewellery, furniture and art.



Ceramics is a term used to describe objects made out of clay. Different countries and cultures have used clay to create useable objects such as bowls, cups and vases as well as more decorative ones to commemorate people (sometimes called busts) or hold special items (canopic jars in Ancient Egypt). Clay is often moulded into shapes by hand and then heated to high temperatures to "cook" it so it sets, it can still be fragile though!



Masks are artefacts that can be used for theatrical purposes, such as creating a character on stage. They may be used in ceremonies or rituals to represent animals or spirits. They can be made from a variety of materials and will be decorated differently depending on the culture they come from.



Textiles is a term used to describe materials/fabrics. Fibres are spun and turned into yarns, and these are then woven or fused together to create fabric. They can be decorated using a wide variety of techniques from dyeing to hand embroidery.



Printing is a technique that can be used in lots of different ways. On fabric it can be used to create repeat patterns. You will be learning stencil printing, a technique where you create a hole in paper in a particular shape and then push paint through that to print onto fabric (it can also be done on paper). You can create multi-layered stencils to add more than one colour to a design.

# Computing Knowledge Organiser



**The Castle School**  
ACHIEVE | BELONG | PARTICIPATE

## Topic: Scratch Programming



**Rationale:** Programming is a form of digital literacy and develops problem-solving skills. Scratch is a programming environment that allows you to create games, animations and other simulations.

### Sequence

Sequence the instructions by arranging the blocks of code.

### Selection

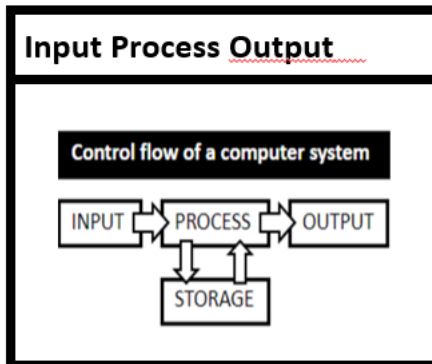
Alternative paths in the code. (If Statements)

### Iteration

Count Controlled and Condition controlled instructions. (Looping)

### Key Words

<b>Sequence</b>	One of the three basic programming constructs. Instructions that are carried one after the other in order.
<b>Selection</b>	Instructions that can evaluate a Boolean expression and branch off to one or more alternative paths.
<b>Iteration (looping)</b>	A selection of code that can be repeated either a set number of times (count-controlled) or a variable number of times based on the evaluation of a Boolean expression (condition-controlled).
<b>Variable</b>	A value that can change depending on conditions or information passed to the program.



### Variable

A value that can change i.e temperature

### Subroutines

A set of instructions that are grouped together

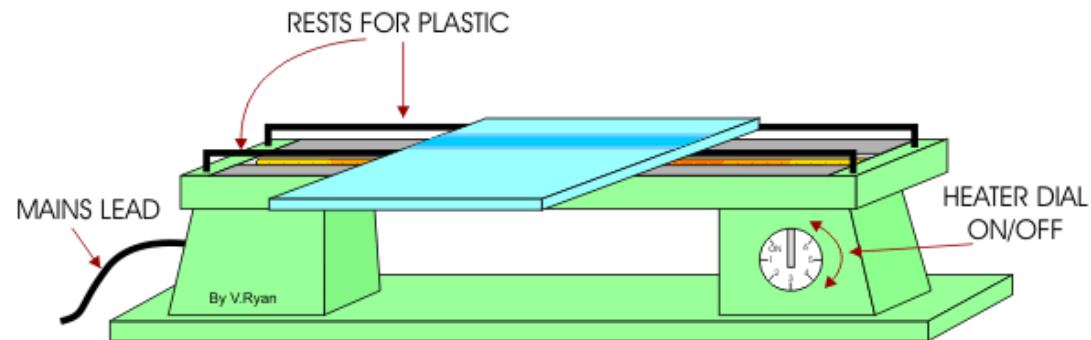
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## Week 2 - The Line Bender

A line bender is a tool used to bend plastic sheets into various shapes. Here's a simple guide on how to use it:

1. **Prepare the Plastic Sheet:** Choose the plastic sheet you want to bend. Make sure it's clean and free of any debris.
2. **Heat the Line Bender:** Turn on the line bender and let it heat up. The heating element will soften the plastic along the line where you want to bend it.
3. **Mark the Bend Line:** Use a marker to draw a line on the plastic sheet where you want the bend to occur. This will help you position the sheet correctly on the line bender.
4. **Position the Plastic Sheet:** Place the plastic sheet on the line bender, aligning the marked line with the heating element. Ensure the sheet is flat and secure.
5. **Heat the Plastic:** Allow the plastic to heat up along the marked line. This usually takes a few minutes, depending on the thickness of the sheet.
6. **Bend the Plastic:** Once the plastic is soft, gently lift and bend it along the heated line. Use a straight edge or a jig to ensure a clean, straight bend.
7. **Cool the Plastic:** Hold the plastic in the desired shape until it cools and hardens. This will set the bend.

Using a line bender is a straightforward process that allows you to create precise bends in plastic sheets for various projects



## Week 4

### High Impact Polystyrene

High Impact Polystyrene, or HIPS, is a special type of plastic that is strong and tough. Imagine a plastic that can be used to make toys, food containers, and even parts of cars – that's HIPS!

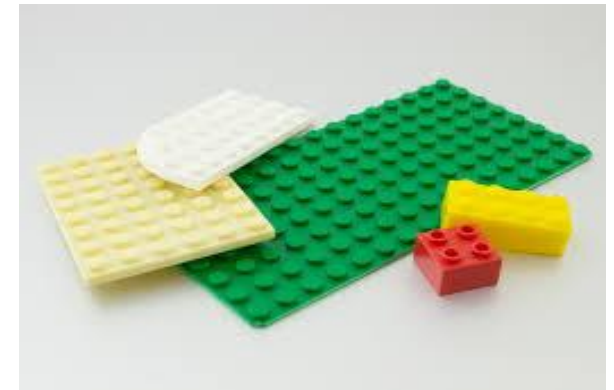
HIPS is made by mixing two materials: polystyrene and rubber. Polystyrene is a kind of plastic that is hard and easy to shape, while rubber is flexible and strong. When these two are combined, they create a material that has the best qualities of both: it's strong like polystyrene and tough like rubber.

One of the coolest things about HIPS is its impact resistance. This means it doesn't break easily when you drop it or hit it. That's why it's used to make things like toy parts, which need to be durable because kids play with them a lot.

It's also used for food packaging, like yogurt cups, because it's safe and can protect the food inside.

HIPS is easy to mould into different shapes, which makes it perfect for making all sorts of products. It can be coloured easily, so you can find HIPS items in many different colours. This makes it great for things like signs and displays in stores.

Another great thing about HIPS is that it can be recycled. This means that after it's used, it can be melted down and made into new products. This helps reduce waste and is better for the environment.



## English – Sparx Reader

You should log on to Sparx reader and spend 30 minutes reading your current book.

### Reading Articles

You will have a reading article each week linking to the whole school theme for that week:

**Week 1:** Democracy

**Week 2:** Values

**Week 3:** Leadership – part 1

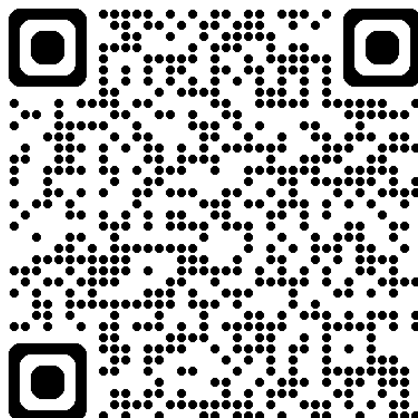
**Week 4:** Leadership – part 2

**Week 5:** Community

Read the article and highlight three words of which you were not sure. Then write the definition and draw an image which will help you remember.

As you read the articles, you will identify that the articles are not in UK English. However, the articles offer some great messages.

Use this QR code to access the reading articles read by a teacher:



## Food

Energy is provided by the food and drinks we consume. Food and drinks contain **macronutrients** – **carbohydrate**, protein and fat which are broken down in the body to provide energy. At least 50% of our energy should come from **starchy** carbohydrates, 15% from protein and **NO MORE** than 35% from fat.

Our body needs energy from food to stay alive, be active, grow and keep warm.

**Energy is measured** in kilojoules or **Kilocalories**

1g carbohydrate (sugar and starch) = **4 kcals of energy**

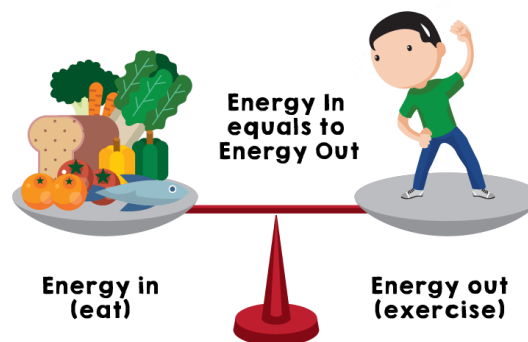
1g protein = **4 kcals of energy**

1g fat = **9 Kcals of energy (energy dense)**

Our **energy requirement** depends on the following:

- Physical activity level (PAL)
- Basal metabolic rate (BMR) the amount of energy (calories) needed to keep your body functioning at rest, also known as your metabolism
- Age
- Sex
- Body size

**BUT the average energy intake in the UK for young adults aged 11-14 years of age per day is 2000 kilocalories for girls and 2220 kilocalories for boys.**



**Energy input** (food)

**Energy output** (activity)

When **too little energy** is consumed over a period of time, the body uses fat stores which leads to **weight loss**. When too much weight is lost, the body will become underweight. People who are very underweight often have health problems including hair loss and developing dry patchy skin.

When **too much energy** is consumed or **not enough energy** is **used** by the body, energy is stored in the body as **fat** over a period. Having too much fat in the body leads to weight gain and may lead to obesity. Being overweight or obese is dangerous for our health and may lead to diseases such as coronary heart diseases, some cancers and diabetes type 2.

**Why is energy needed?** The human body converts the food it consumes into energy to function and stay alive. This energy supply enables the body to do a number of things vital to its survival, including; Maintaining the body's essential functions, enabling physical activity and movement and allowing for growth and repair of tissues.



## Geography - 'What challenges and opportunities does Africa face?'

Week 2 - To know how the people in the Horn of Africa deal with the challenges they face	Week 4 - To know how the people in the Horn of Africa deal with the challenges they face
<p><b>Fair Trade</b> ensures that producers in low-income countries (LICs) receive better prices for their goods, such as cocoa, coffee, and cotton. A <b>nomad</b> is a person who travels from place to place in search of fresh pasture for their animals and does not have a permanent home. There are at least 10 million nomads in the Horn of Africa. Approximately half the population of Somalia are nomads. <b>Piracy</b> is where ships are attacked or robbed at sea. Living on the coast of Somalia means people are at risk of piracy.</p>	<p>Ethiopia, known as the birthplace of coffee, primarily grows this crop on small family farms. However, the income from coffee farming is often uncertain due to competition from other coffee producers. Djibouti, despite being mostly desert with few natural resources, benefits greatly from its strategic location on the Red Sea. This advantageous position allows it to serve as a key port where 50% of the world's container ships pass through, unloading cargo and refuelling.</p>

## History – The Black Death – How did the Black Death impact rural areas like Somerset?

Component	Core knowledge (that you NEED to know)	Key vocab (that you NEED to know and use)
<p><b>Week 1</b> <b>What was life like in Medieval England?</b></p>	<p><b>Peasant</b> homes in the country were small, often just made up of one room. A peasant's hut was called a <b>Cruck House</b> was made of wattle and daub (mud, animal dung and straw) with a thatch roof but no windows. Inside the hut, a third of the area was penned off for the animals, which lived in the hut with the family. A fire burned in a hearth in the centre of the hut, so the air was permanently eye-wateringly smoky. Furniture was maybe a couple of stools, a trunk for bedding, and a few cooking pots.</p> <p><b>Medieval towns</b> were often unhygienic because of the larger populations and the lack of proper sanitation. Modern toilets and plumbing were a long way in the future and waste and <b>sewage</b> was thrown into the streets. Animals such as pigs and sheep roamed and butchers often threw waste meat into the street or river. These unsanitary conditions contributed to the spread of diseases, such as the <b>Black Death</b>.</p>	<p><b>Black Death</b> – A serious and terrible disease which spread through Europe causing death</p> <p><b>Cruck House</b> – house made from mud, animal dung and straw (known as wattle and daub)</p> <p><b>Medieval Villages</b> – Most people who lived in the Middle ages lived in villages and worked on the land.</p> <p><b>Medieval towns</b> – Towns were dirty and overcrowded.</p> <p><b>Peasants</b> – Poor farm workers</p> <p><b>Sewage</b> – Waste leaving our bodies and dirty water</p>

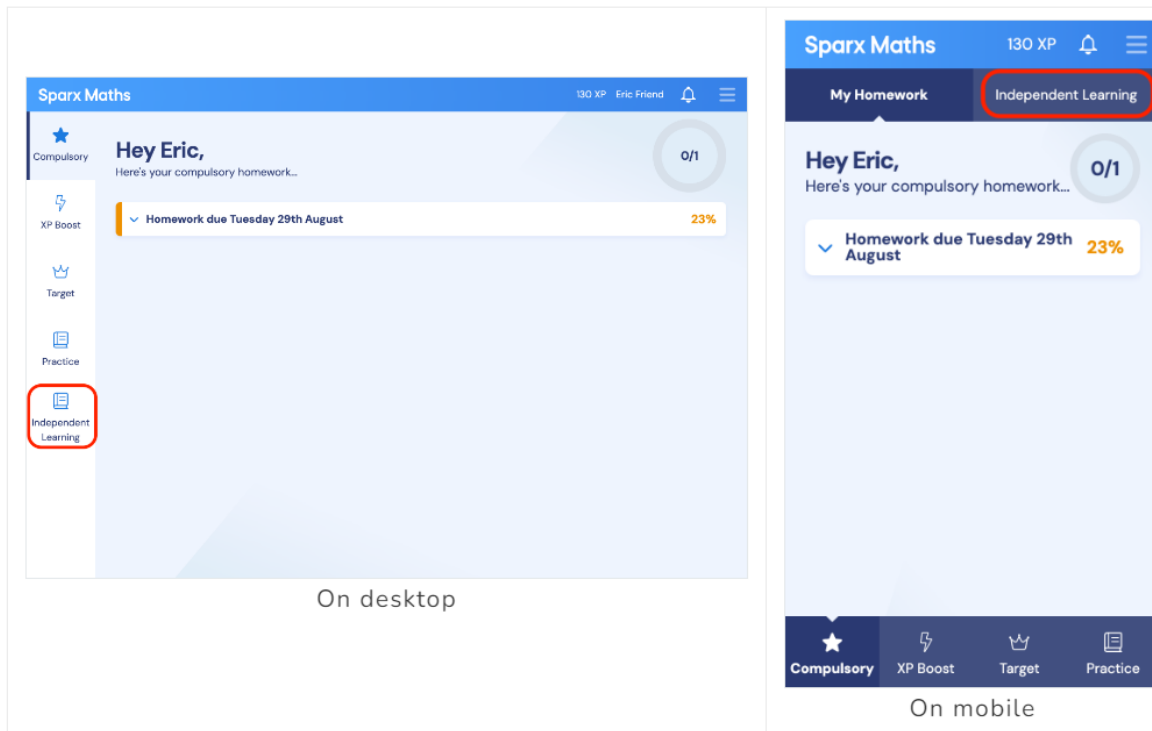
<p><b>Week 3</b></p> <p><b>Who can tell us most about Medieval peasants?</b></p>	<p><b>Archaeologists</b> are people who study historical sites by digging up objects from the ground called <b>artefacts</b>. As well as objects, archaeologists have dug up thousands of skeletons, which belonged to medieval peasants. They discovered that many of the skeletons were those of children, and the bone-joints of adults were worn or deformed. This suggests that many children didn't live to adulthood and that medieval peasants did jobs, which required heavy manual labour.</p> <p>In addition, archaeologists have found other artefacts that tell us about the lives of medieval peasants, such as combs, sewing needles and scythes for cutting corn, as well as pieces of broken pottery.</p>	<p><b>Archaeologist</b> – A person who studies the past by digging up objects from the ground.</p> <p><b>Artefact</b> – Object made by people</p>
<p><b>Week 5</b></p> <p><b>What was the Black Death and how was it caused?</b></p>	<p><b>The Black Death</b> was a serious disease which was passed to humans from rats and fleas. The fleas lived on the rats and sucked their blood, which contained the plague's germs. When the rat died, the fleas jumped onto humans and passed on the deadly disease.</p> <p>The Black Death travelled along the trading routes. Merchants ships frequently had rats on board. The ones which got on in China and India, where it is thought the disease began, transferred the disease to the sailors on board who transferred it to people working at the docks where they landed.</p> <p>We know the Black Death reached Bristol in 1349 and quickly spread across Somerset, wiping out whole communities within weeks.</p> <p>The <b>symptoms</b> of the Black Death were painful <b>buboes</b> which appeared in the person's armpits, neck and groin. The affected person also suffered from vomiting, high temperature, bruising under the skin and muscle spasms. The symptoms normally lasted for five days and in most cases the victim died a painful death.</p>	<p><b>Black Death</b> – A serious disease passed to humans from rats and fleas.</p> <p><b>Bubonic Plague</b> – The most common form of the Black Death</p> <p><b>Buboes</b> – A painful swelling filled with pus and blood.</p> <p><b>Symptoms</b> – the conditions of the illness</p>

# Maths

On a Monday, your Maths task will be set by your teacher. You should log on to Sparx Maths to complete this task. Your practice book has an area for your workings which you need to use as during the homework, Sparx Maths undertakes a bookwork check.

On a Thursday you practice independently on an area where you have a gap in your knowledge.

When logged in to Sparx students will always be able to see the Independent Learning option on the main menu:



# MFL – French

Tu es sportif/sportive? Are you sporty? (present tense –er verbs / extended sentences)				
Present tense –er verb	ball sport	frequency phrase	where?	who with?
<b>Je joue</b> I play  <b>Nous jouons</b> We play	au golf golf au billard snooker au tennis tennis au ping-pong / tennis de table table-tennis au hockey sur glace ice-hockey	tous les jours all the days  souvent often  une fois par jour one time per day  une fois par semaine one time per week	...au centre-ville (at the town-centre)  ...au centre sportif (at the sports centre)  ...dans le parc (in the park)	avec mon frère with my brother avec mon (beau-) père with my (step-) dad
	à la pétanque boules	parfois sometimes  quelquefois sometimes	...à la campagne (at the countryside)  ...à la montagne (at the mountains)  ...à la maison (at home)	avec ma soeur with my sister avec ma (belle-) mère with my (step-) mum
	aux cartes cards aux échecs chess		...chez moi (at the house of me)  ...chez mon ami (at the house of my friend)	avec mes amis/copains with my friends

le / la / les = the    au / à la / aux = to the / at the

## Qu'est-ce que tu fais pendant ton temps libre? What do you do in your free-time?

Quand il fait beau ... (When it is nice)	<b>je fais</b> I do  <b>nous faisons</b> We do	... du skate... (some skating) ... du patin à glace ... (some ice-skating) ...du vélo... (some cycling)	...au centre-ville (at the town-centre)  ...au parc (at the park)	...avec mon copain. (with my male friend)  ...avec mon (beau-) père. (with my (step-)dad)
Quand il fait mauvais... (When it is bad)		...du trampoline ... ( some trampolining)	...au centre sportif (at the sports centre)	
Quand il fait chaud... (when it is hot)		...de la cuisine... (some cooking)  de la natation... (some swimming)	...à la campagne (at the countryside)  ...à la montagne (at the mountains)  ...à la maison (at home)	...avec ma copine. (with my female friend) ...avec ma (belle-) mère. (with my (step-) mum)
Quand il fait froid... (when it is cold)		...de l'équitation ... (some horse-riding)	...chez moi (at the house of me)	...avec mes copains /copines. (with my friends)
Quand il pleut... (when it rains)		...de l'athlétisme... (some athletics)	...chez mon ami (at the house of my friend)	...avec mes parents. (with my parents)
En hiver... (in Winter)		...des randonnées... (some hiking)		
En été... (in Summer)				

le / la / les = the    au / à la / aux = to the / at the

## Comment tu trouves le rugby? How do you find rugby?

Opinion structure	qualifier	adjective / idiom
Je trouve que c'est... (I find that it's )	un peu (a bit)	intéressant (interesting)
	assez (quite)	relaxant (relaxing)
	très (very)	rapide (fast)
	vraiment (really)	marrant (funny)
		amusant (fun)
Je pense que c'est... (I think that it's)		ennuyeux (boring)
	X	une perte de temps (a waste of time)  ennuyeux à mourir (boring to death)

Qu'est-ce que tu aimes faire le week-end?

*(What do you like doing at the week-end?)*

Qu'est-ce que tu aimes faire en hiver?

*(What do you like doing in winter?)*

Du / de la / de l' / des = some

Time phrase	Verb 1	Verb 2 - Infinitive	Detail	Conjunction / verb	Adjective
Quand il pleut When it rains	<b>J'adore</b> <b>I love</b>	<b>bloguer</b> (to blog)		car c'est because it's	facile (easy)  rapide (fast)  marrant (funny)  amusant (fun)  intéressant (interesting)  ennuyeux (boring)
		<b>faire</b> (to do)	du judo (m) (judo)		
de la natation (f) (swimming)					
des randonnées (pl) (hiking)					
Le week-end the weekend	<b>Je déteste</b> <b>I hate</b>				
Le week-end prochain Weekend next	<b>Je vais</b> <b>I am going to</b>	<b>jouer</b> (to play)	au volley (m) (volleyball)		
Demain tomorrow	<b>Je voudrais</b> <b>I would like to</b>		à la pétanque (f) (boules)		
Un jour One day			aux échecs (pl) (chess)		

<p><b>Qu'est-ce que tu fais normalement le week-end?</b> <i>What do you do normally at the weekend?</i></p>	<p>Le week-end <i>At the weekend</i></p>	<p><b>je joue</b> <i>I play / I am playing</i></p>		<p>...<b>au</b> centre-ville <i>(at the town-centre)</i></p>	<p>...avec <b>mon</b> copain. <i>(with my male friend)</i></p>
	<p>Le Samedi <i>On Saturday</i></p>	<p><b>je fais</b> <i>I do / I am doing</i></p>		<p>...<b>au</b> parc <i>(at the park)</i></p>	<p>...avec <b>mon</b> (beau-) père. <i>(with my (step-)dad)</i></p>
<p><b>Qu'est-ce que tu vas faire le week-end prochain?</b> <i>What are you going to do next week-end?</i></p>	<p>Le week-end prochain <i>Next weekend</i></p>	<p><b>je vais jouer</b> <i>I am going to play</i></p>	<p><b>au</b> rugby <b>au</b> tennis <b>à la</b> pétanque <b>aux</b> échecs</p>	<p>...<b>à la</b> campagne <i>(at the countryside)</i></p>	<p>...avec <b>ma</b> copine. <i>(with my female friend)</i></p>
	<p>Demain tomorrow</p>	<p><b>je vais faire</b> <i>I am going to do</i></p>		<p><b>du</b> ski <b>de la</b> natation <b>des</b> randonnées</p>	<p>...<b>à la</b> montagne <i>(at the mountains)</i></p>
<p><b>Il y a un sport que tu voudrais essayer un jour?</b> <i>Is there a sport that you would like to try one day?</i></p>	<p>Un jour <i>One day</i></p>	<p><b>je voudrais jouer</b> <i>I would like to play</i></p>		<p>...chez moi <i>(at my house)</i></p>	<p>...avec <b>mes</b> copains /copines. <i>(with my friends)</i></p>
		<p><b>je voudrais faire</b> <i>I would like to do</i></p>		<p>...chez mon ami <i>(at my friend's house)</i></p>	<p>...avec <b>mes</b> parents. <i>(with my parents)</i></p>

## MFL – German

subject and verb	place	person + verb	location
<p><b>Ich wohne in...</b> <i>I live in....</i></p>	<p><b>England</b> <i>England</i> <b>Ireland</b> <i>Ireland</i> <b>Schottland</b> <i>Scotland</i></p>		
<p><b>Ich komme aus...</b> <i>I come from...</i></p>	<p><b>Deutschland</b> <i>Germany</i> <b>Griechenland</b> <i>Greece</i> <b>Spanien</b> <i>Spain</i> <b>Italien</b> <i>Italy</i></p>		
<p>Mein Vater/ Meine Mutter wohnt in... <i>My mum/dad lives in...</i></p>	<p><b>Frankreich</b> <i>France</i> <b>Österreich</b> <i>Austria</i> <b>die Schweiz (in der Schweiz)</b> <i>Switzerland</i></p>		
	<p><b>Berlin</b> <i>Oestreich</i> <b>Köln</b> <i>Cologne</i></p>	<p><b>Es liegt</b> <i>It is situated</i></p>	<p><b>im Norden von [Deutschland]</b> <i>in the north of [Germany]</i> <b>im Süden von [Deutschland]</b> <i>in the south of [Germany]</i> <b>im Westen von [Deutschland]</b> <i>in the west of [Germany]</i> <b>im Osten von [Deutschland]</b> <i>in the east of [Germany]</i></p>

subject and verb	noun	connective	noun
<b>Es gibt</b> <i>There is</i>	<b>einen Bahnhof</b> <i>a station</i> <b>einen Marktplatz</b> <i>a market square</i> <b>einen Park</b> <i>a park</i> <b>einen Wasserpark</b> <i>a waterpark</i> <b>einen Radweg</b> <i>a cycle path</i>	<b>und</b> <i>and</i>  <b>aber</b> <i>but</i>	<b>keinen Bahnhof</b> <i>no station</i> <b>keinen Marktplatz</b> <i>no market square</i> <b>keinen Park</b> <i>no park</i> <b>keinen Wasserpark</b> <i>no waterpark</i> <b>keinen Radweg</b> <i>no cycle path</i>
	<b>eine Kirche</b> <i>a church</i> <b>eine Imbissstube</b> <i>a snack bar</i> <b>eine Kegelbahn</b> <i>a bowling alley</i> <b>eine Eisbahn</b> <i>a skating rink</i> <b>eine Kunstgalerie</b> <i>an art gallery</i>		<b>keine Kirche</b> <i>no church</i> <b>keine Imbissstube</b> <i>no snack bar</i> <b>keine Kegelbahn</b> <i>no bowling alley</i> <b>keine Eisbahn</b> <i>no skating rink</i> <b>keine Kunstgalerie</b> <i>no art gallery</i>
	<b>ein Kino</b> <i>a cinema</i> <b>ein Schwimmbad</b> <i>a swimming pool</i> <b>ein Schloss</b> <i>a castle</i> <b>ein Stadtzentrum</b> <i>a town centre</i> <b>ein Theater</b> <i>a theatre</i>		<b>kein Kino</b> <i>no cinema</i> <b>kein Schwimmbad</b> <i>no swimming pool</i> <b>kein Schloss</b> <i>no castle</i> <b>kein Stadtzentrum</b> <i>no town centre</i> <b>kein Theater</b> <i>no theatre</i>

subject and verb	indefinite article	adjective	noun
<b>Es gibt</b> <i>There is</i>	einen = a keinen = no	<i>altmodischen</i> <i>interessanten</i> <i>großen</i> <i>kleinen</i> <i>praktischen</i> <i>historischen</i> <i>schönen</i> <i>sauberen</i>	Bahnhof <i>station</i> Marktplatz <i>market square</i> Park <i>sauterne</i> Wasserpark <i>waterpark</i> Radweg <i>cycle path</i>
	eine = a keine = no	<i>altmodische</i> <i>interessante</i> <i>große</i> <i>kleine</i> <i>praktische</i> <i>historische</i> <i>schöne</i> <i>saubere</i>	Kirche <i>church</i> Imbissstube <i>snack bar</i> Kegelbahn <i>bowling alley</i> Eisbahn <i>skating rink</i> Kunstgalerie <i>art gallery</i>
	ein = a kein = no	<i>altmodisches</i> <i>interessantes</i> <i>großes</i> <i>kleines</i> <i>praktisches</i> <i>historisches</i> <i>schönes</i> <i>sauberes</i>	Kino <i>cinema</i> Schwimmbad <i>swimming pool</i> Schloss <i>castle</i> Stadtzentrum <i>town centre</i> Theater <i>theatre</i>

Imperfect tense (past)	noun	Connective	Imperfect tense (past)	Adjective
<b>Es gab</b> <i>There was</i>  <b>Es hatte</b> <i>It had</i>  <b>Die Stadt hatte</b> <i>The town had</i>	<b>einen Bahnhof</b> <i>a station</i> <b>einen Marktplatz</b> <i>a market square</i> <b>einen Strand</b> <i>a beach</i> <b>einen Wasserpark</b> <i>a waterpark</i> <b>einen Radweg</b> <i>a cycle path</i> <b>einen Olympiapark</b> <i>an Olympic park</i> <b>einen Hafen</b> <i>a harbour</i>  <b>eine Kirche</b> <i>a church</i> <b>eine Imbissstube</b> <i>a snack bar</i> <b>eine Kegelbahn</b> <i>a bowling alley</i> <b>eine Eisbahn</b> <i>a skating rink</i> <b>eine Kunstgalerie</b> <i>an art gallery</i>  <b>ein Kino</b> <i>a cinema</i> <b>ein Schwimmbad</b> <i>a swimming pool</i> <b>ein Schloss</b> <i>a castle</i> <b>ein Stadtzentrum</b> <i>a town centre</i> <b>ein Theater</b> <i>a theatre</i> <b>ein Einkaufszentrum</b> <i>a shopping centre</i> <b>ein Stadion</b> <i>a stadium</i>	<b>und</b> <i>and</i>  <b>aber</b> <i>but</i>	<b>Es war</b> <i>It was</i>  <b>Die Stadt war</b> <i>The town was</i>	<b>alt</b> <i>old</i> <b>modern</b> <i>modern</i> <b>historisch</b> <i>historic</i> <b>touristisch</b> <i>touristic</i> <b>klein</b> <i>small</i> <b>groß</b> <i>big</i> <b>schön</b> <i>beautiful</i> <b>laut</b> <i>noisy / loud</i> <b>ruhig</b> <i>quiet</i> <b>industriell</b> <i>industrial</i>

Conditional	noun	Connective	Conditional	Adjective
<b>Es gäbe</b> <i>There would be...</i>  <b>Es hätte</b> <i>It would have</i>  <b>Die Stadt hätte</b> <i>The town would have</i>	<b>einen Bahnhof</b> <i>a station</i> <b>einen Marktplatz</b> <i>a market square</i> <b>einen Strand</b> <i>a beach</i> <b>einen Wasserpark</b> <i>a waterpark</i> <b>einen Radweg</b> <i>a cycle path</i> <b>einen Olympiapark</b> <i>an Olympic park</i> <b>einen Hafen</b> <i>a harbour</i>  <b>eine Kirche</b> <i>a church</i> <b>eine Imbissstube</b> <i>a snack bar</i> <b>eine Kegelbahn</b> <i>a bowling alley</i> <b>eine Eisbahn</b> <i>a skating rink</i> <b>eine Kunstgalerie</b> <i>an art gallery</i>  <b>ein Kino</b> <i>a cinema</i> <b>ein Schwimmbad</b> <i>a swimming pool</i> <b>ein Schloss</b> <i>a castle</i> <b>ein Stadtzentrum</b> <i>a town centre</i> <b>ein Theater</b> <i>a theatre</i> <b>ein Einkaufszentrum</b> <i>a shopping centre</i> <b>ein Stadion</b> <i>a stadium</i>	<b>und</b> <i>and</i>  <b>aber</b> <i>but</i>	<b>Es wäre</b> <i>It would be</i>  <b>Die Stadt wäre</b> <i>The town would be</i>	<b>alt</b> <i>old</i> <b>modern</b> <i>modern</i> <b>historisch</b> <i>historic</i> <b>touristisch</b> <i>touristic</i> <b>klein</b> <i>small</i> <b>groß</b> <i>big</i> <b>schön</b> <i>beautiful</i> <b>laut</b> <i>noisy / loud</i> <b>ruhig</b> <i>quiet</i> <b>industriell</b> <i>industrial</i>



Imperfect tense	place
<b>Ich war in...</b> <i>I was in...</i>  <b>Ich wohnte in...</b> <i>I lived in...</i>  <b>Mein Vater/          Meine Mutter war in...</b> <i>My mum/dad was in...</i>  <b>Meine Eltern waren in...</b> <i>My parents were in...</i>	<b>England</b> <i>England</i> <b>Ireland</b> <i>Ireland</i> <b>Schottland</b> <i>Scotland</i> <b>Deutschland</b> <i>Germany</i> <b>Griechenland</b> <i>Greece</i> <b>Spanien</b> <i>Spain</i> <b>Italien</b> <i>Italy</i> <b>Frankreich</b> <i>France</i> <b>Österreich</b> <i>Austria</i> <b>die Schweiz (in der Schweiz)</b> <i>Switzerland</i>  <b>Berlin</b> <i>Berlin</i> <b>Köln</b> <i>Cologne</i>

## MFL – Mandarin

Was wirst du in den Sommerferien machen? <i>What will you do in the summer holidays?</i>	
<b>Ich werde</b> <i>I will</i> <b>Du wirst</b> <i>you will</i> <b>Er wird</b> <i>He will</i> <b>Sie wird</b> <i>She will</i> <b>es wird</b> <i>it will</i> <b>wir werden</b> <i>we will</i> <b>ihr werdet</b> <i>you will (plural)</i>  <b>Sie werden</b> <i>they will</i>  <b>Man kann</b> <i>You can</i>	<b>segeln</b> <i>sail</i> <b>klettern</b> <i>climb</i> <b>an den Strand gehen</b> <i>go to the beach</i> <b>wandern</b> <i>hike</i> <b>im See baden</b> <i>bathe in the lake</i> <b>tauchen</b> <i>dive</i> <b>windsurfen</b> <i>windsurf</i> <b>rodeln</b> <i>toboggan</i> <b>im Meer schwimmen</b> <i>swim in the sea</i>  <b>Souvenirs kaufen</b> <i>buy souvenirs</i> <b>nach Interlaken fahren</b> <i>travel to Interlaken</i> <b>und</b> <i>and</i> <b>zwei Wochen bleiben</b> <i>stay for two weeks</i> <b>ein Picknick machen</b> <i>have a picnic</i> <b>das Schloss besuchen</b> <i>visit the castle</i> <b>meine Oma besuchen</b> <i>visit my grandma</i> <b>Tennis spielen</b> <i>play tennis</i>

<b>Was möchten Sie?</b> <i>What would you like?</i>			
<b>Ich möchte</b> <i>I'd like</i>	<b>einmal</b> <i>a portion of</i>	<b>Bratwurst</b> <i>fried sausage</i>	<b>bitte</b> <i>please</i>
	<b>zweimal</b> <i>two portions of</i>	<b>Hamburger</b> <i>hamburgers</i>	
<b>dreimal</b> <i>three portions of</i>	<b>Pizza</b> <i>pizza</i>		
<b>Ich hätte gern</b> <i>I'd like</i>	<b>Salat</b> <i>salad</i>	<b>Pommes</b> <i>chips</i>	
	<b>ein</b> <i>a/one</i>	<b>Eis</b> <i>ice-cream</i>	
	<b>eine</b> <i>a/one</i>	<b>Mineralwasser</b> <i>mineral water</i>	
		<b>Cola</b> <i>coke</i>	
		<b>Tasse Tee</b> <i>cup of tea</i>	

MFL – Mandarin

wǒ xīng qī yī shàng wǎng  
我星期一上网。

I surf the internet on Mondays.

Who	Days of the week	Sports/hobbies
wǒ I 我 I	xīng qī yī Monday 星期 <u>一</u> Monday	tī zú qiú 踢足球
nǐ you 你 you	xīng qī èr Tuesday 星期 <u>二</u> Tuesday	Play football
tā she 她 she	xīng qī sān Wednesday 星期 <u>三</u> Wednesday	dǎ lán qiú 打篮球
tā he 他 he	xīng qī sì Thursday 星期 <u>四</u> Thursday	Play basketball
bà bà Dad 爸爸 Dad	xīng qī wǔ Friday 星期 <u>五</u> Friday	dǎ ping pāng qiú 打乒乓球
mā mā Mum 妈妈 Mum	xīng qī liù Saturday 星期 <u>六</u> Saturday	Play table tennis
gē gē Older brother 哥哥 Older brother	xīng qī rì Sunday 星期 <u>日</u> Sunday	dǎ wǎng qiú 打网球
jiě jiě Older sister 姐姐 Older sister	xīng qī tiān Sunday 星期 <u>天</u> Sunday	pǎo bù 跑步
dì dì Younger brother 弟弟 Younger brother		run
mèi mèi Younger sister 妹妹 Younger sister		yóu yǒng 游泳
		Swim
		wán ér huá bǎn 玩儿滑板
		To skateboard

wǒ zuó tiān tí le zú qiú  
我昨天踢了足球。

I played football yesterday.

Who	Past time	Sports/hobbies
wǒ I 我 I	zuó tiān yesterday 昨天 yesterday	tī le zú qiú 踢了足球 Played football
nǐ you 你 you	shàng gè xīng qī yī 上个星期一 last Monday	dǎ le lán qiú 打了篮球 Played basketball
tā she 她 she	tā he 他 he	dǎ le pīng pāng qiú 打了乒乓球 Played table tennis
bà ba Dad 爸爸 Dad	shàng gè xīng qī èr 上个星期二 Last Tuesday	dǎ le wǎng qiú 打了网球 Played tennis
mā ma Mum 妈妈 Mum	shàng gè xīng qī 上个星期 Last week	pǎo le bù 跑了步 ran
gē ge 哥哥 Older brother	shàng zhōu 上周 Last week	yóu le yǒng 游了泳 Swam
jiě jie 姐姐 Older sister	dì dì 弟弟 Younger brother	wán ér le huà bǎn 玩儿了滑板 skateboarded
mèi mèi 妹妹 Younger sister		

wǒ míng tiān yào tī zú qiú。  
我明天要踢足球。

I **will** play football tomorrow.

Who	future time	Future tense indicator	Sports/hobbies
wǒ 我 I	míng tiān 明天 tomorrow	yào <b>要</b> will	tī zú qiú 踢足球 Play football
nǐ 你 you			dǎ lán qiú 打篮球 Play basketball
tā 她 she	xià gè xīng qī yī 下个星期一 next Monday		dǎ ping pāng qiú 打乒乓球 Play table tennis
tā 他 he			dǎ wǎng qiú 打网球 Play tennis
bà bà 爸爸 Dad	xià gè xīng qī èr 下个星期二 next Tuesday		pǎo bù 跑步 run
mā mā 妈妈 Mum			yóu yǒng 游泳 Swim
gē gē 哥哥 Older brother	xià gè xīng qī 下个星期 next week		wán ér huá bǎn 玩儿滑板 skateboard
jiě jiě 姐姐 Older sister	xià zhōu 下周 next week		
dì dì 弟弟 Younger brother			
mèi mèi 妹妹 Younger sister			

wǒ hé bà bà yì qǐ tí zú qiú。 I with dad together play football.

WHO	with	WHO	together	Activities
wǒ 我	hé 和	péng yǒu 朋友	yì qǐ 一起	shàng wǎng 上网。
péng yǒu 朋友		lǐ lǐ 丽丽		dǎ ping pāng qiú 打乒乓球。
lǐ lǐ 丽丽		tā 他		dǎ wǎng qiú 打网球。
tā 他		tā 她		kàn diàn shì 看电视。
tā 她	gēn 跟	bà bà 爸爸	yì qǐ 一起	tīng yīn yuè 听音乐。
bà bà 爸爸		gē gē 哥哥		kàn diàn yǐng 看电影。
gē gē 哥哥		dì dì 弟弟		tí zú qiú 踢足球。
dì dì 弟弟		mā mā 妈妈		
mā mā 妈妈		jiě jiě 姐姐		
jiě jiě 姐姐		mèi mèi 妹妹		
mèi mèi 妹妹				

nǐ hé shéi yì qǐ tí zú qiú?  
Q: 你和 **谁** 一起踢足球?

wǒ hé péng yǒu yì qǐ tí zú qiú。  
A: 我和 朋友 一起踢足球。

# MFL - Spanish

Y7 HT5 SB1		¿Tienes mascotas? Do you have any pets?		¿Cómo se llama? What is his/her name?		¿Cuántos años tiene? How old is he?	
VERB	NOUN	VERB	NOUN	VERB		NOUN	NOUN
<b>yo tengo</b> = I have  <b>En casa yo tengo</b> = At home I have  <b>Mi amigo tiene...</b> = My friend has  <b>Mi primo tiene...</b> = My cousin has  <b>Mi madrastra tiene...</b> = My step-mum has  <b>Mi abuelo tiene...</b> = My grandfather has	<b>un caballo</b> = a horse  <b>un conejo</b> = a rabbit  <b>un gato</b> = a cat  <b>un hamster</b> = a hamster  <b>un loro</b> = a parrot  <b>un pájaro</b> = a bird  <b>un perro</b> = a dog  <b>un pez</b> = a fish  <b>un ratón</b> = a mouse  <b>una araña</b> = a spider  <b>una cobaya</b> = a guinea pig  <b>una rata</b> = a rat  <b>una serpiente</b> = a snake  <b>una tortuga</b> = a tortoise	<b>que se llama</b> = that's called	<b>Cervantes</b>  <b>Darwin</b>  <b>Rocky</b>  <b>Aslam</b>  <b>Currito</b>    <b>Luz</b>  <b>Chispita</b>  <b>Afortunada</b>	<b>y</b> = and	<b>él tiene</b> = he has  <b>ella tiene</b> = she has	<b>un - 1</b>    <b>dos</b> = 2 <b>tres</b> = 3 <b>cuatro</b> = 4 <b>cinco</b> = 5 <b>seis</b> = 6 <b>siete</b> = 7 <b>ocho</b> = 8 <b>nueve</b> = 9 <b>diez</b> = 10 <b>once</b> = 11 <b>doce</b> = 12 <b>trece</b> = 13 <b>catorce</b> = 14 <b>quince</b> = 15 <b>dieciséis</b> = 16 <b>diecisiete</b> = 17 <b>dieciocho</b> = 18 <b>diecinueve</b> = 19 <b>veinte</b> = 20	<b>año</b> = year        <b>años</b> = years
	<b>No tengo mascotas = I don't have pets</b>						

Y7 HT5 SB2		¿Cómo es tu mascota? What is your pet look like?								
POSSESSIVE	NOUN	VERB	ADJECTIVE	CONN'	INTENSIFIER	ADJECTIVE (Build)	CONN'	ADJECTIVE (Character)		
<b>Mi</b> = <u>my</u>	<b>caballo</b> = horse  <b>conejo</b> = rabbit  <b>gato</b> = cat  <b>hamster</b> = hamster  <b>loro</b> = parrot  <b>pájaro</b> = bird  <b>perro</b> = dog  <b>pez</b> = fish  <b>ratón</b> = mouse	<b>es</b> = <u>is</u>	<b>amarillo</b> = yellow <b>blanco</b> = white <b>morado</b> = purple <b>negro</b> = black <b>rojo</b> = red	<b>y</b> = and	<b>un poco</b> = a bit  <b>bastante</b> = quite  <b>muy</b> = very  <b>extremadamente</b> = extremely  <b>demasiado</b> = too	<b>bonito</b> = handsome  <b>delgado</b> = slim  <b>feo</b> = ugly  <b>gordo</b> = fat  <b>grande</b> = big  <b>guapa</b> = pretty <b>musculosa</b> = muscular <b>pequeña</b> = small	<b>también</b> = also	<b>divertido</b> = fun <b>gracioso</b> = funny <b>generoso</b> = generous <b>simpático</b> = nice <b>trabajador</b> = hard-working		
	<b>Su</b> = His / Her		<b>araña</b> = spider  <b>cobaya</b> = guinea pig  <b>rata</b> = rat  <b>serpiente</b> = snake  <b>tortuga</b> = tortoise		<b>azul</b> = blue  <b>rosa</b> = pink  <b>marrón</b> = brown  <b>naranja</b> = orange  <b>verde</b> = green	<b>tiene</b>  <b>= it has</b>		<b>el pelo</b>  <b>= the hair</b>	<b>fuerte</b> = strong <b>inteligente</b> = intelligent <b>paciente</b> = patient  <b>aburrida</b> = boring <b>antipática</b> = mean <b>perezosa</b> = lazy <b>terca</b> = stubborn <b>tonta</b> = silly	<b>corto</b> = short <b>largo</b> = long <b>rapado</b> = very short  <b>liso</b> = straight <b>ondulado</b> = wavy <b>rizado</b> = curly
					<b>amarilla</b> = yellow <b>blanca</b> = white <b>morada</b> = purple <b>negra</b> = black <b>roja</b> = red					

Y7 HT5 SB3		¿Qué mascota te gustaría tener en el futuro? What pet would you like to have in the future?				
TIME PHRASE	VERB	NOUN	CONN'	OPINION VERB	VERB	ADJECTIVE
Cuando sea mayor = When I'm older	me gustaría tener = I would like to have	un burro = a donkey un cerdo = a pig un pato = a duck un pollo = a chick	porque = because	creo que = I believe that	sería = it would be	aburrido = boring divertido = fun egoísta = selfish emocionante = exciting entretenido = entertaining estresante = stressful gracioso = funny guay = cool loco = crazy peligroso = dangerous tonto = silly
	no me gustaría tener = I would not like to have	un delfín = a dolphin un elefante = an elephant un león = a lion un mono = a monkey un pingüino = a penguin un tigre = a tiger				
En el futuro = In the future	me encantaría tener = I would love to have  preferiría tener = I would prefer to have  odiaría tener = I would hate to have	una abeja = a bee una gallina = a chicken una nutria = an otter una oveja = a sheep una vaca = a cow		en mi opinión = in my opinión  pienso que = I think that		

Y7 HT5 SB4		¿Qué te gusta hacer con tu mascota? What do you like doing with your pet?						
OPINION PHRASE	VERB- ACTIVITY		CONN'	VERB- OPINION	VERB	INTENS'	ADJECTIVE	
Me encanta = I love	bailar = to dance	con mi = with my	porque = because	pienso que = I think that	es = it is	un poco = a bit	activo = active emocionante = exciting entretenido = entertaining guay = cool importante = important interesante = interesting práctico = practical relajante = relaxing sano = healthy útil = useful	
Me flipa = I'm crazy about	cantar = to sing							
Me gusta = I like	correr = to run							
Me gusta mucho = I really like	escuchar música = to listen to music							
Prefiero = I prefer	ir a la piscina = to go swimming							
No me gusta = I don't like	ir a la playa = to go to the beach							
Odio = I hate	ir al parque = to go to the park							
	ir a la playa = to go to the beach							
	jugar a la pelota = to play with the ball							
	sacar fotos = to take photos							
	ver la televisión = to watch TV							
				en mi opinión = in my opinión	no es = it is not	bastante = quite  muy = very  extremadamente = extremely  demasiado = too	aburrido = boring complicado = complicated difícil = difficult estresante = stressful estúpido = stupid inútil = useless malsano = unhealthy peligroso = dangerous	



# Music

## What Makes a Good Song? Exploring Popular Songs and Musical Arrangements

### A. Popular Song Structure

**SONG STRUCTURE** – How a song is made up of or divided into different sections (see below) and the order in which these sections occur. To work out the structure of a song, it's helpful to analyse the **LYRICS** and listen to a recording for the song (for instrumental sections).

**INTRO** – often shortened to 'intro', the first section of a song which sets the mood of the song and is sometimes, but not always, an instrumental section using the song's chord pattern.

**VERSES** – songs normally have several verses. Verses introduce the song's theme and have the same melody but different lyrics for each verse which helps develop the song's narrative and story. Songs made up entirely of verses are called **STROPHIC**.

**LINK** – a optional short section often used to join different parts of a song together, often instrumental, and sometimes joins verses together or appears at other points within a song.

**PRE-CHORUS** – an optional section of music that occurs before the **CHORUS** which helps the music move forward and "prepare" for what is to come.

**CHORUS** – occurs several times within a song and contains the most memorable **HOOK/RIFF**. The chorus relays the message of the song and is repeated with the same melody and lyrics each time it is heard. In popular songs, the chorus is often repeated several times towards the end of the song.

**MIDDLE 8/BRIDGE** – a section (often 8 bars in length) that provides contrasting musical material often featuring an instrumental or vocal solo using new musical material allowing the performer to display their technical skill on their instrument or voice.

**CODA/OUTRO** – The final section of a popular song which brings it to an end (Coda is Italian for "tail"!)

### B. Key Words

**LYRICS** – The words of a song, usually consisting of **VERSES** and a **CHORUS**.

**HOOK** – A 'musical hook' is usually the 'catchy bit' of the song that you will remember. It is often short and used and repeated in different places throughout the piece. Hooks can be either **MELODIC, RHYTHMIC** or **VERBAL/LYRICAL**.

**RIFF** – A repeated musical pattern often used in the introduction and instrumental breaks in a song or piece of music. Riffs can be rhythmic, melodic or lyrical, short and repeated.

**MELODY** – The main tune of the song often sung by the **LEAD SINGER**.


**COUNTER-MELODY** – An 'extra' melody often performed 'on top of' the main melody that 'fits' with it a **DESCANT** or **INSTRUMENTAL SOLO**.

**TEXTURE** – The layers that make up a song e.g., *Melody, Counter-Melody, Hooks/Riffs, Chords, Accompaniment, Bass Line*.

### C. Lead Sheet Notation and Arrangements

A **LEAD SHEET** is a form of musical **NOTATION** that contains only the essential elements of a popular song such as the **MELODY, LYRICS, RIFFS, CHORDS** (often as guitar chord symbols) and **BASS LINE**; it is not as developed as a **FULL SCORE ARRANGEMENT** and is open to interpretation by performers who need to use and adapt the given elements to create their own musical **ARRANGEMENT**: their "version" of an existing song.

**COVER (VERSION)** – A new performance, remake or recording by someone other than the original artist or composer of the song.

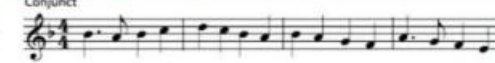


### D. Conjunct and Disjunct Melodic Motion


**CONJUNCT MELODIC MOTION** – Melodies which move mainly by step or use notes which are next to or close to one another.

**DISJUNCT MELODIC MOTION** – Melodies which move mainly by leap or use notes which are not next to or close to one another.

**MELODIC RANGE** – The distance between the lowest and highest pitched notes in a melody.




### E. Song Timbre and Sonority (Instruments that are used to Accompany Songs)



Pop Bands often feature a **DRUM KIT** and **PERCUSSION** to provide the rhythm along with **ELECTRIC GUITARS (LEAD GUITAR, RHYTHM GUITAR and BASS GUITAR)** and **KEYBOARDS**. Sometimes **ACOUSTIC INSTRUMENTS** are used such as the **PIANO** or **ACOUSTIC GUITAR**. **ORCHESTRAL INSTRUMENTS** are often found in pop songs such as the **STRINGS, SAXOPHONE, TROMBONE** and **TRUMPET**.

Singers are essential to a pop song - **LEAD SINGER** – Often the "frontline" member of the band (most famous) who sings most of the melody line to the song. **BACKING SINGERS** support the lead singer providing **HARMONY** or a **COUNTER-MELODY** (a melody that is often higher in pitch and different, but still 'fits with' the main melody) and do not sing all the time but just at certain points within a pop song e.g. in the chorus.



**DR SMITH: BUILDING ON WHAT YOU ALREADY KNOW**

**D**ynamics - volume

**R**hythm - how long notes last and how they are grouped together in a pattern

**S**tructure - the different sections in a piece of music (AB, ABA, verse/chorus)

**M**elody - the tune or most important layer in a piece of music. In pop songs the singer has the melody.

**M**etre is the time signature, always put at the beginning of a piece of music. It tells us how many beats are in a bar.

**I**strumentation - what instruments are used

**A**rticulation - the way you play your instrument - staccato - detached and spikey, legato - playing smoothly.

**T**exture - the different layers happening within a piece.

-Monophonic - a single unaccompanied line of music, one layer. -Homophonic - multiple layers of music but everything moves in chunks, the same rhythm. -

Polyphonic - multiple layers of music doing different

things. **T**empo – speed. **T**onality - what key is the piece in -Major gives a happy feel -Minor makes the music seem sadder.

**H**armony – more than one note at the same time

# Pop Song

Harmony - Chords

Challenge: Use fingers 1, 3, and 5 when playing chords on piano



**C Major Scale**

**C Major triads (3 note chords)**

Guitar

Ukulele

Piano



Use this QR code to help you understand



disability awareness



## Child on child abuse

**Which of the following are part of child on child abuse?  
Two are not correct**

- Physical abuse
- Sexual abuse
- Parental abuse
- Emotional abuse
- Financial abuse
- Online abuse
- Coercive control

### British Values

- Democracy
- Rule of law
- Celebration of other faiths and beliefs
- Individual Liberty

Protection of your rights and the right of others you work with.

### Examples

- Equality and Human Rights
- Personal Development
- Respect and Dignity
- Rights, choice, consent and individuality
- Values and principles

# Religion and Worldviews - What did the Buddha teach about suffering?

## Week 1 - Who was the Buddha? The Story of Siddhartha

Once upon a time, in a beautiful kingdom called Kapilavastu, there was a prince named Siddhartha. He lived in a grand palace with his father, King Suddhodana, and his mother, Queen Maya. Siddhartha had everything he could ever want – delicious food, fine clothes, and lots of toys. He was surrounded by music, dancing, and laughter. But even with all this luxury, Siddhartha felt that something was missing.

One day, when Siddhartha was a young man, he decided to leave the palace and see the world outside. He went on a journey and saw four things that changed his life forever. These are known as the **Four Sights**. First, he saw an old man, bent with age. Then, he saw a sick person, suffering from illness. Next, he saw a dead body, reminding him that life is not forever. Finally, he saw a monk who had given up everything to find peace.

These sights made Siddhartha think deeply about life. He realised that no matter how rich or powerful someone is, everyone experiences aging, sickness, and death. He wanted to find a way to end this suffering, not just for himself, but for everyone. Siddhartha decided to leave his life of luxury and become an **ascetic**. This means he gave up all his possessions and lived a very simple life. He wandered through forests, meditated, and ate very little. He hoped that by doing this, he would find the answers he was looking for. But after many years, he still hadn't found the peace he sought.

One day, Siddhartha remembered a time when he was a child, sitting under a tree and feeling calm and happy. He realised that neither extreme luxury nor extreme hardship had brought him peace. He decided to follow a new path, which he called the **Middle Way**. This path was about finding balance – not too much, not too little. Siddhartha sat under a Bodhi tree and meditated deeply. He vowed not to get up until he found the truth. After many days and nights, he finally understood the nature of suffering and how to overcome it. He reached **enlightenment** and became the Buddha, which means "the Awakened One."

The Buddha spent the rest of his life teaching others about the Middle Way and how to find peace and happiness. His teachings are still followed by millions of people around the world today.

## Week 3 - What are the three refuges and how do they help Buddhists?

In Buddhism, people take refuge in three things to help them find peace and happiness. These are called the **Three Refuges** or the **Three Jewels**. They are:

1. **The Buddha:** This means taking refuge in the Buddha, who showed the way to enlightenment.
2. **The Dharma:** This means taking refuge in the Buddha's teachings, which guide people on how to live a good life.
3. **The Sangha:** This means taking refuge in the community of people who follow the Buddha's teachings and support each other.

The Three Refuges are like a raft that helps people cross a river. Imagine you are on one side of a river, and you want to get to the other side where it's peaceful and safe. The river is full of strong currents and dangers, representing the difficulties and suffering in life. The raft, made of the Buddha, the Dharma, and the Sangha, helps you cross the river safely. Once you reach the other side, you don't need the raft anymore, but it was essential to help you get there.

One day, after Siddhartha had become the Buddha, he was walking through a village. He saw a farmer working hard in the fields. The farmer looked tired and unhappy. The Buddha approached the farmer and asked, "Why do you look so sad?" The farmer replied, "I work all day in the hot sun, but no matter how hard I work, I still struggle to feed my family. I worry about the future and feel like I can never find peace."

The Buddha listened carefully and then told the farmer a story. "Once, there was a man who was shot by an arrow. He was in great pain and suffering. Instead of pulling out the arrow, he started asking questions like, 'Who shot this arrow? What kind of wood is it made from? What kind of feathers are these?' But these questions didn't help him. What he needed to do was remove the arrow to stop the pain."

The Buddha explained, "In the same way, we often focus on things that don't help us. We worry about the past and the future, but what we need to do is understand our suffering and find a way to overcome it. By following the Three Refuges – the Buddha, the Dharma, and the Sangha – we can find the path to peace and happiness."

The farmer thanked the Buddha and decided to follow his teachings. Over time, he found that his worries lessened, and he felt more at peace.

### **Week 5 - How can gaining enlightenment help us understand suffering?**

Imagine feeling completely peaceful and happy all the time. If you are a Buddhist and become enlightened, it might feel like you have no more worries or fears. You understand the world in a special way, and you feel connected to everything around you. It's like having a calm and clear mind, no matter what happens. When the Buddha became enlightened, he understood the truth about life and suffering. He realized that all living beings experience suffering, but there is a way to end it. He discovered the **Four Noble Truths**:

1. **The Truth of Suffering:** Everyone experiences suffering in life.
2. **The Truth of the Cause of Suffering:** Suffering is caused by our desires and attachments.
3. **The Truth of the End of Suffering:** It's possible to end suffering.
4. **The Truth of the Path to End Suffering:** By following the **Eightfold Path**, we can end suffering and find peace.

The lotus flower is a beautiful symbol in Buddhism. It grows in muddy water, but it rises above the mud to bloom in the sunlight. This is like enlightenment. Even though we might experience difficulties and suffering (the mud), we can rise above them and find peace and happiness (the blooming flower). The lotus flower reminds us that we can overcome challenges and become enlightened.

Experiencing suffering is important because it helps us understand what causes it and how to overcome it. Just like the Buddha saw the Four Sights and realised that everyone suffers, we also need to recognize our own suffering. By understanding our struggles, we can learn to let go of our desires and attachments and follow the path to enlightenment. Suffering teaches us valuable lessons and helps us grow stronger and wiser.

# Physics

Week 1 - How does a wave travel?

A wave is the transfer of energy with no overall transfer of matter

There are 2 different types of waves:

## 1. Transverse waves

In transverse waves particles vibrate up and down. The direction of the wave is from left to right. Therefore, transverse waves are defined as 'a wave where particles travel at a right angle to the direction of the wave.'

Examples of transverse waves include:

Light waves, water ripples, x-rays, radio waves, microwaves.

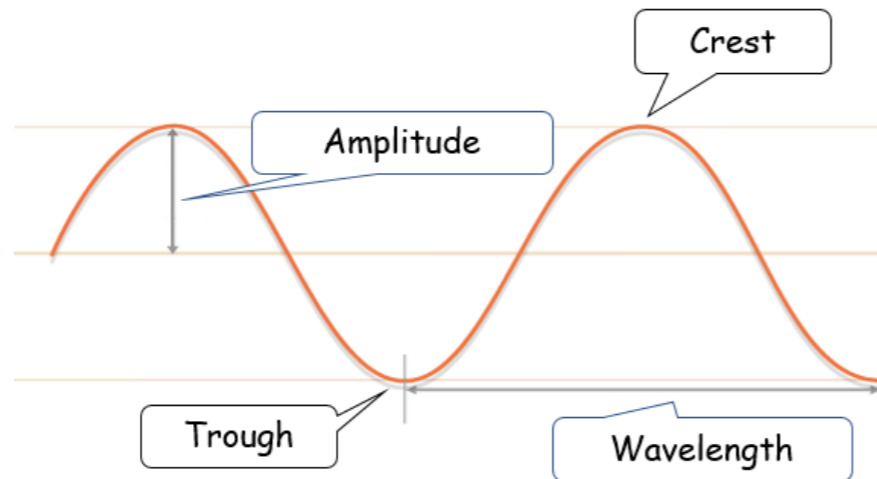
## 2. Longitudinal waves

In longitudinal waves particles vibrate back and forth, the direction of the wave goes from left to right. Therefore, longitudinal waves are defined as 'a wave where particles move parallel to the direction of the wave.'

Examples of longitudinal waves

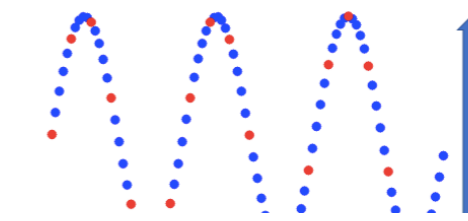
Sound waves, seismic waves (shock waves from earthquakes)

Labelling a transverse wave:



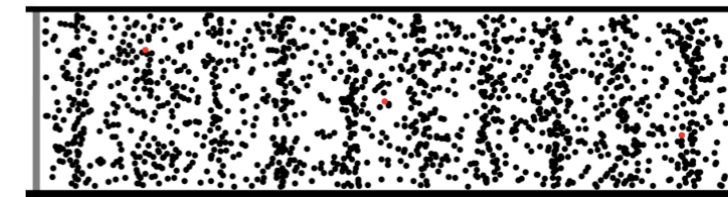
Frequency is the number of complete waves per second. Frequency is measured in hertz (Hz).

## Transverse waves...



.. Particles move at a right angle to the direction of the wave.

## Longitudinal waves



.. Particles move parallel to the direction of the wave.



Crest – highest point in a wave  
Trough – lowest point in a wave  
Amplitude – distance from the centre line to a crest or trough (measured in metres)  
Wavelength – length of one full wave (easiest to measure from one peak to the next. Or from one trough to the next (measured in meters).

Sounds are made by something **vibrating**.

The vibrations push the air particles, these particles then collide with (bump into) neighbouring particles, passing along the sound wave.

Examples:

- When you speak, vocal cords vibrate.
- When you play a guitar, the strings vibrate.
- When a tuning fork is tapped, the prongs vibrate to make a note.

**Amplitude (m)** – shows the intensity (loudness) of the sound.

The bigger the amplitude, the louder the sound.

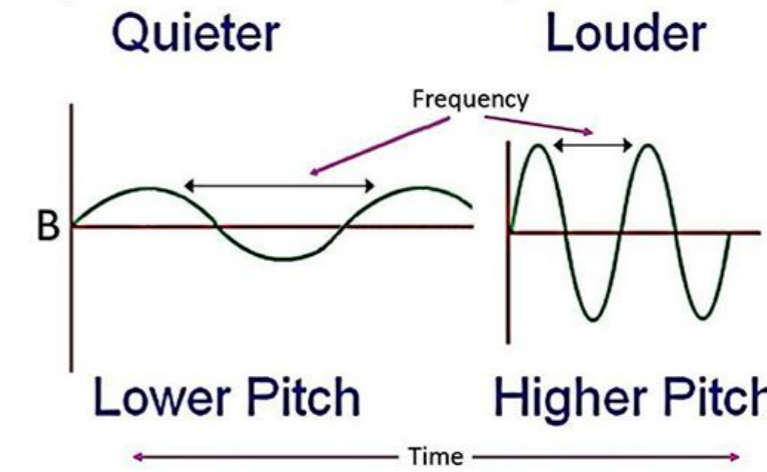
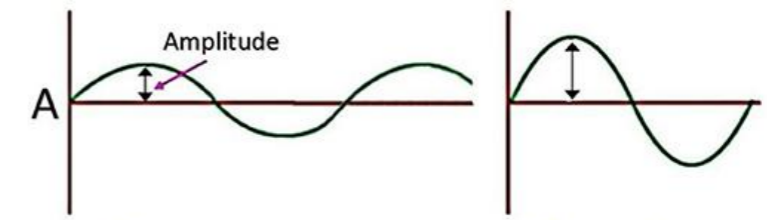
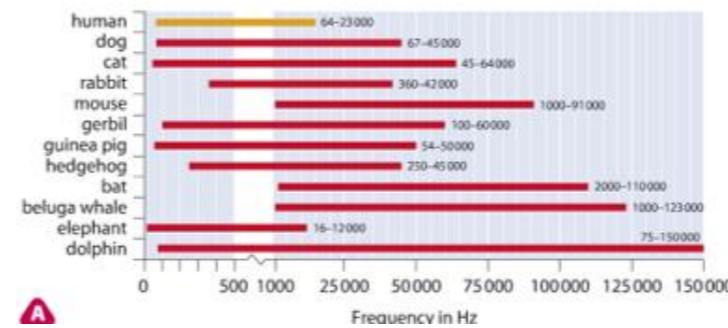
**Wavelength (m)** – shows the pitch of the sound.

The shorter the wavelength the higher the pitch of the sound.

Different animals can hear different frequencies of sound.

Humans have a hearing range between 20Hz to 20,000Hz

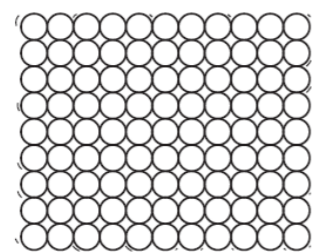
(although this can vary between individuals)



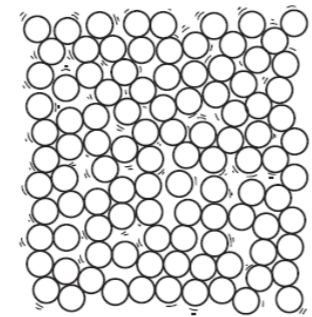
**Week 2 - How does sound travel?**

The speed of sound in air 340 m/s

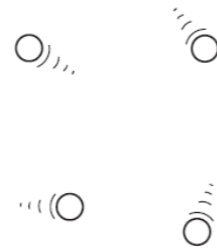
Sound travels at different speeds through different types of material. Sound travels fastest in solids as the particles are close together so particles can easily collide and pass on the vibrations. Sound travels slowest in gases because the particles are very spread out.



Particles in a **solid** are very close together. They are held together with strong bonds. Sound vibrations can move very quickly through solids because the particles are close to each other and bump into each other often. It is easy for the vibrations to be passed on.



Particles in a **liquid** are close together. They are able to move about. Sound vibrations move more slowly than in a solid because the particles are a bit further apart and do not bump into each other quite as often.



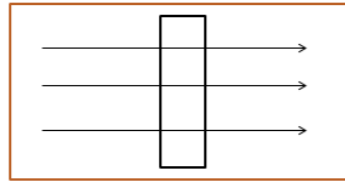
In a **gas** the particles are very far apart. They can move easily in all directions. The particles do not bump into each other very often, so it is more difficult for vibrations to be passed on. Sound vibrations travel more slowly in a gas than they do in solids and liquids.

Remember sound waves are longitudinal waves.

**Luminous** sources are objects that give off light. **Non-luminous** objects do not give off light.

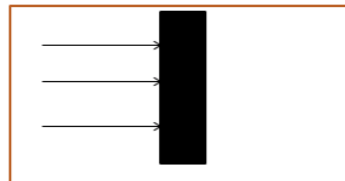
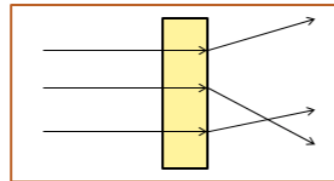
Light travels in rays. Light travels from the luminous objects to a person's eye.

Objects can be **transparent**, **translucent** or **opaque**.



**Transparent** – these are materials which let all of the light straight through.

**Translucent** – these materials let light through but it is randomly scattered.

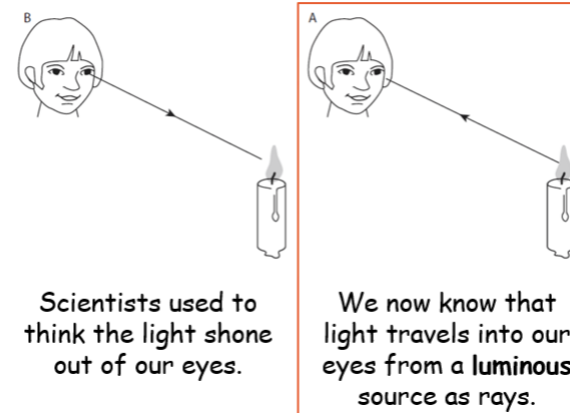


**Opaque** – these materials let no light through.

Examples:

Transparent	Translucent	Opaque
Clear glass	Frosted glass	Wood
Wine glass	Tracing paper	Book
Air	Cling film	Brick
Clean water	Marble	Steel
		Pencil

**The Direction of Light**



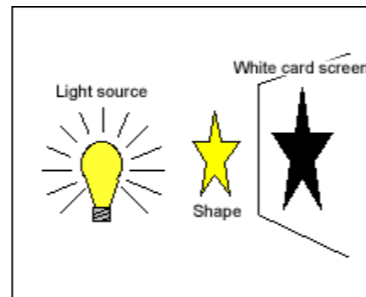
Scientists used to think the light shone out of our eyes.

We now know that light travels into our eyes from a luminous source as rays.

Arrows are always needed on light rays to show the direction light is travelling

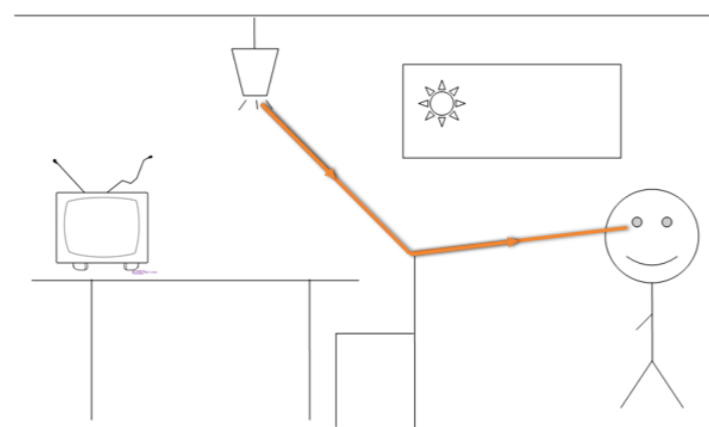
**Week 3 - What is light?**

Shadows form behind opaque objects because light cannot travel through them. **Light travels in a straight line** so cannot bend around them. Shadows are the absence of light.

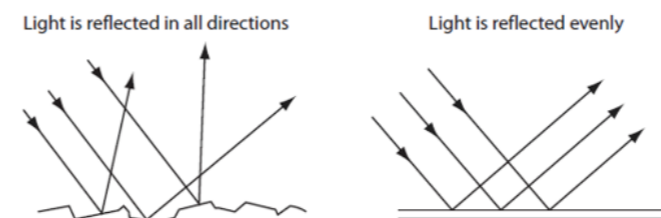


Light travels at approximately 300,000,000m/s!  
Remember light is a transverse wave.

Light from luminous sources bounces off (reflects off) opaque objects. Meaning we can see them:



Light scatters in different directions when it reflects off rough surfaces. A mirror has a very smooth surface so it reflects light evenly.





Heat can transfer by **conduction, convection** or **radiation**.

### 1. Conduction

An object that easily allows heat to pass through is known as a good **thermal conductor** e.g. copper, aluminium (and other metals)

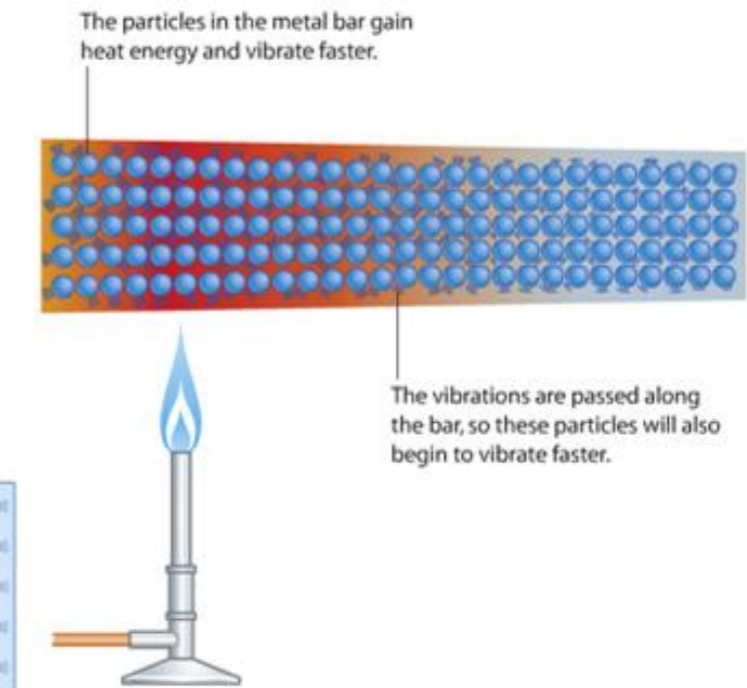
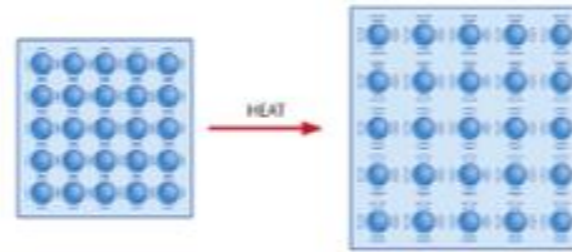
An object that does not easily allow heat to pass through is known as a **thermal insulator** e.g. plastic, wood, rubber.

Heat transfers by conduction through solid conductors. When particles in solid conductors are heated the energy transferred causes the particles to vibrate faster (gain kinetic energy).

As the particles vibrate they collide into the particles next to them, causing the energy to pass through the solid.

Air is a poor conductor because particles in gas are spread out. Therefore, it's hard for the particles to collide and pass on the vibrations.

Metals also expand when they are heated..  
As the particles vibrate more, they need more space to move around in and so the solid will expand. When a solid expands it has the same mass but it takes up more space. Its density will decrease.



Heat energy is also known as thermal energy.

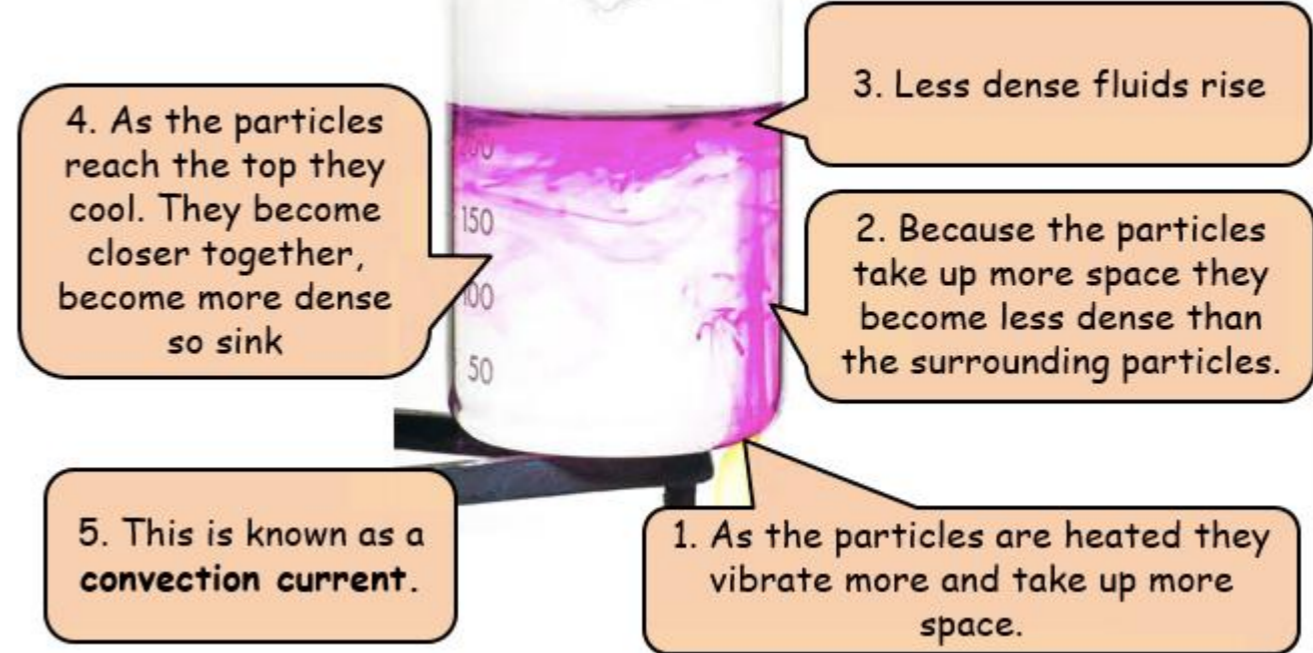
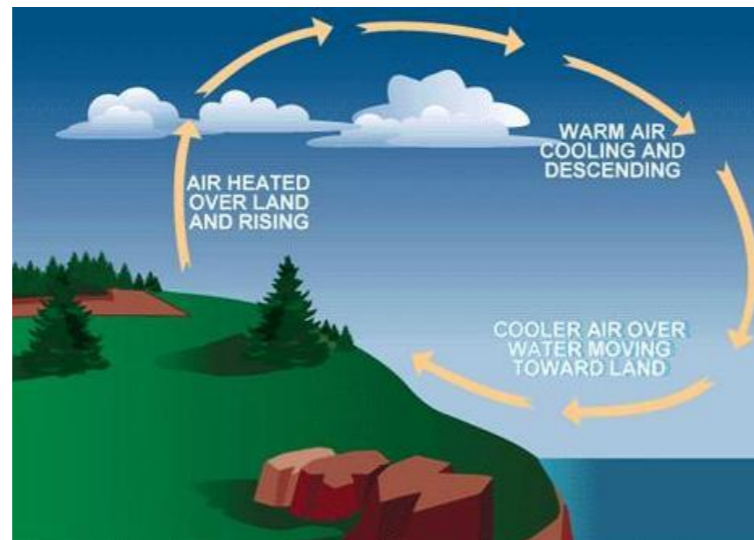
Week 4 - How is heat transferred?

### 2. Convection

Heat cannot travel by conduction well through fluids (liquids and gases).

Heat transfers through fluids by **convection**.

Example:

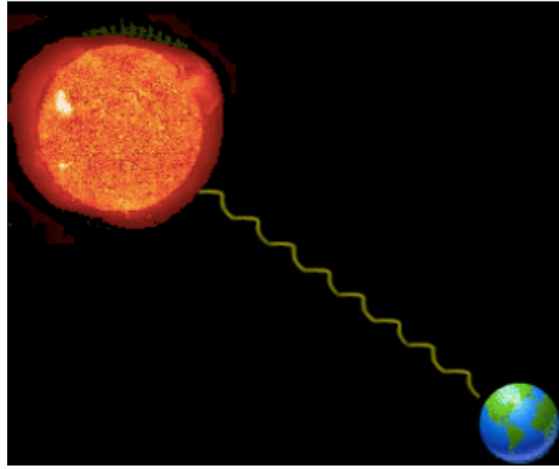


### 3. Radiation

Thermal radiation does not require particles, it transfers heat via a wave (**infrared**). We can't see infrared only feel it as heat.

All hot objects emit infrared radiation – including us!

Special infrared cameras can sense this infrared energy, and produce a picture for us to see.



- There are no particles in space (it is a vacuum) so conduction and convection won't work
- Heat from the sun travels via infrared radiation



When radiation hits something, it can be absorbed or reflected.  
Light coloured, shiny materials reflect the most radiation.  
Dull, dark, matt objects absorb the most radiation

**Energy** is defined as “something that is needed to make things happen or change”  
Energy is always measured in **Joules (J)**

Energy stores include:

- Chemical (e.g. stored in fuels, foods, batteries)
- Kinetic (stored in anything that is moving)
- Thermal (stored in anything hot)
- Strain/Elastic potential (stored in stretched springs, or stretched elastic objects)
- Gravitational potential (stored in anything above ground level)
- Nuclear (stored in the nucleus of atoms)

Energy transfers include:

- Mechanical (transferred when a force makes something move)
- Heating (transferred via conduction, convection and radiation – see next lesson)
- Light (Transferred by anything giving off light)
- Sound (Transferred by anything giving off sound)
- Electrical (Transferred where there is electricity e.g. around a circuit)

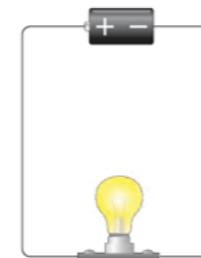
The law of conservation of energy:

Energy cannot be created or destroyed it can only be stored or transferred.

## Energy transfer diagrams

When processes happen energy can be transferred from one form to another.

This can be shown on an energy transfer diagram.



Chemical → Electrical → Light

Week 5 - What is energy?