

Puberty

Everyone experiences puberty. Young people, male and female, as they grow into adults will experience puberty. Though this can start at different times for each person.

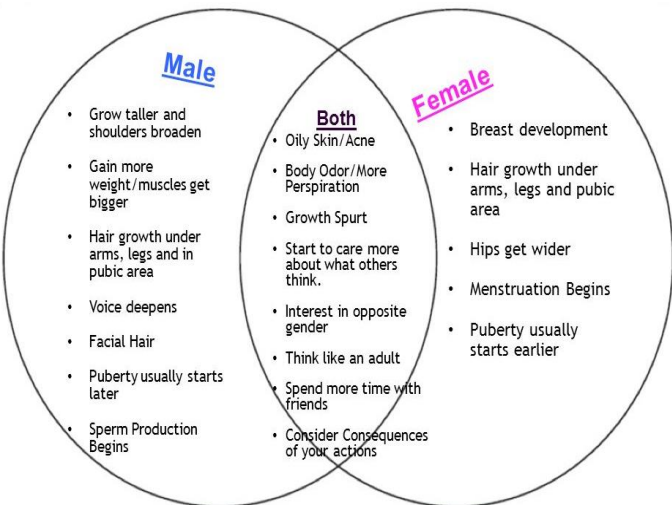
Puberty starts at different times for different people, and it starts when the body is ready.

For girls this is usually between ages 8 and 13. For boys this is usually between ages 9 and 15.

Puberty may continue into the early 20s.

Puberty is the process through which the body changes from that of a child to an adult.

This change is caused by changing hormones, which are special chemicals in the body.

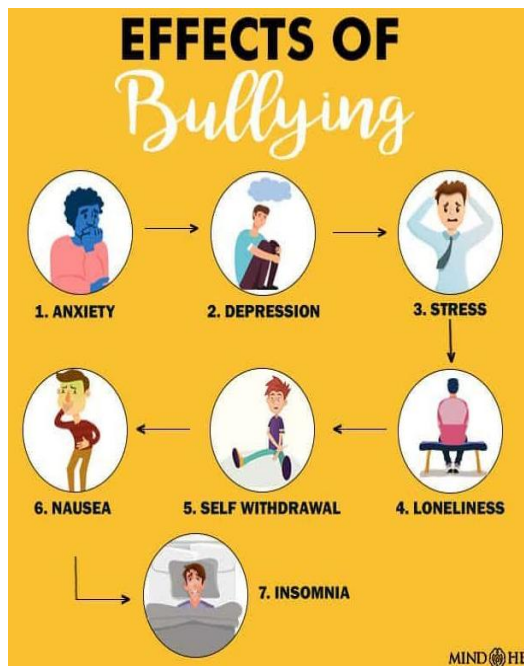


Healthy Relationships

Y7 – P4L

Bullying

Bullying is intentionally harmful behaviour that is often repeated over time. Bullying can occur anywhere and to anyone. It can happen online or face-to-face in schools, workplaces and in the



How to practice empathy

1. Watch & Listen: What is happening? Ask yourself, "How does the person feel?" "How can you tell?" "What do their words say?" "What does their body language say?" "Does what they say match their body language?"

2. Remember: Have you felt the same way? Ask yourself, "When did something like this happen to you?"

3. Imagine: Imagine how you might feel.

4. Ask: Find out how the person is feeling. You could ask them: "Are you OK? What happened to you? How do you feel? How are you doing?"

5. Show you care.

Qualities of a good friend:

Safe	Listened to
Valued	Like your opinion doesn't matter
Happy	Respected
Accepted	Judged for what you do or what you like

Families

There are various different types of family in the UK.

Nuclear family - a family unit consisting of two adults and any number of children living together.

Extended family - grandparents, aunts, uncles, and cousins, either all living nearby or within the same household.

Reconstituted family - also known as a blended family or step family.

Single parent family - consists of a parent not living with a partner, who has most of the day-to-day responsibilities for raising the children.

Same-sex family - same-sex marriage was legalised in 2014. Their children may be adopted or be the biological children of one member of the couple.

Boundaries and Consent

We all have **boundaries** depending on how well we know someone.

We have **different boundaries** for what is **safe** or **comfortable** for us to do with our family, with our friends or with other people we know.

What is meant by 'consent'?

Consent is about agreeing to let something happen

What should happen if consent for something is not given?

If consent isn't given, then that thing should not happen

Once someone has given consent, can that consent always be assumed (e.g., if someone agrees to lend their friend a pencil, does their friend need to ask again if they want to borrow it again a week later?)

Any person who has given consent always has the right to change their mind. It is as important to understand about gaining consent as about giving consent.

WHAT HAPPENS IF I DON'T LOOK AFTER MY TEETH?

Answer: If you don't brush your teeth properly twice a day the risk of tooth decay is higher. Tooth decay can hurt and make your teeth look black or brown.



WHY IS THERE BLOOD WHEN I BRUSH?

Answer: Your gums may bleed because you are not brushing your teeth and gums well enough. Plaque causes your gums to be red and swollen, which makes them bleed, especially when brushing.



HOW OFTEN SHOULD I GO TO THE DENTIST?

Answer: It depends on how healthy your teeth are. If you have healthy teeth you may only need a check-up every 12 months but if you have had holes in your teeth you may need to go back every 3 or 6 months.



The way to lead a good life...

1. Serve others
2. Be generous to the less fortunate
3. Treat everyone equally
4. Live honestly and work hard
5. Keep God in heart and mind at all times



- **Founded in 15th century CE in Punjab, what is now India and Pakistan.**
- **Approximately 25 million followers worldwide and ever-growing.**
- **The word 'Sikh' comes from the Punjabi verb 'Sikhana' meaning 'to learn' Thus, a Sikh is one who learns.**

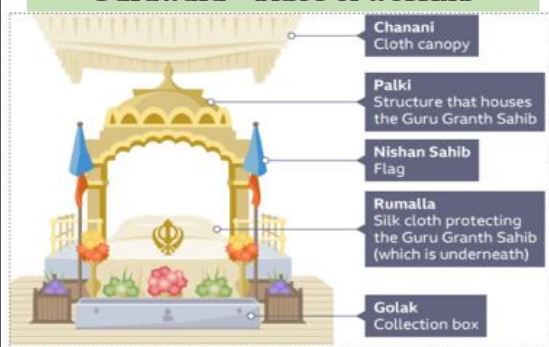
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Sikhism

The Ten Gurus

- **Guru Nanak** – founder of Sikhism.
- **Guru Angad** – taught people to read script that Nanak used to record hymns.
- **Guru Amar Das** – helped to recognise religion city that became Amritsar.
- **Guru Arjun Dev** – built the Golden Temple.
- **Guru Hargobind** – freed 52 prisoners of conscience and designed Sikh flag (Nishan Sahib)
- **Guru Har Raj** – collected rare species of plants. An expert in medicine.
- **Guru Har Krishan** – died as a child serving people with disease.
- **Guru Tegh Bahadur** – led large non-violent protest new laws. Executed in 1675 defending right of non-Muslims to practise faith.
- **Guru Gobind Singh** – finalised Sikh scriptures and founded Khalsa in 1699 – a dedicated religious group that Sikhs can join.
- **All Gurus achieved liberation - Mukti**

Gurdwara – place of worship



The 5 K's – show dedication to faith.



Key Words

Guru – moving from darkness (gu) to light (ru).

Khanda – Sikh double-edged sword symbol.

The Guru Granth Sahib – Sikh holy scripture.

Gurdwara – Sikh place of worship.

Reincarnation – cycle of life, death and rebirth.

Sewa – acting selflessly and helping others.

Sangat – gather together.

Langar – free kitchen

Khalsa – collective body of all initiated Sikhs.

Waheguru – word for God meaning wonderful enlightener.

Eternal – beyond time.

Transcendent – outside times and space

Nirguna – beyond all qualities and forms.

Sargun – God is within the world able to have qualities.

Sikh Virtues



- A) **LOVE** - God loves creation. Humanity was created by God so should be treated with respect and dignity.
- B) **COMPASSION AND PATIENCE** - Help others in times of suffering. Human race is united. Tolerance and patience for all in society.
- C) **TRUTH AND TRUTHFUL LIVING** - Live an honest life and deal with injustice in society. This will allow closeness with God.
- D) **CONTENTMENT** - Everything is Hukam (God's will). Be content and not focus on material possessions or personal gain.
- E) **HUMILITY AND SELF-CONTROL** - Everyone is equal and important to God. Pray and meditate regularly to remain focused on God.
- F) **WISDOM AND COURAGE** - Live a good life and learn about God and Sikh beliefs. Maintain the strength and courage to stay focused.

The Mool Mantar

There is only One God. Their name is Truth. They are The Creator. They are without fear and hatred. They are Timeless, Unborn and Self-existent. They are known by the grace of the Guru.

- A short verse written by Guru Nanak.
- Describes qualities of God beginning with Ek Onkaar (Ik Onkaar): God is one.
- First verse in the Guru Granth Sahib (holy book).
- Referred to as the creed of the Sikhs.
- Recited daily as part of the morning prayers.

Scan the QR code to find out more about the Sikh religion



Online Safety

Y7

P4L

Define: **E-Safety**

Strategies and systems to help people stay safe online.

Define: **Digital Citizenship**

Accepted ways on behaving whilst engaging in online activity.

Define: **Cyber Bullying**

The use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature

Define: **Hacking**

Gaining access to systems and computers which you do not have permission to access. Can be for malicious purposes.

Define: **Grooming**

When someone uses the internet to trick, force or pressure a young person into doing something they wouldn't normally do, this could be sexual behavior or radical beliefs.

Define: **Digital Footprint**

The information about a particular person that exists on the internet as a result of their online activity. It can not be deleted.

10 strategies for staying safe online

1. Don't post any personal information online – like your address, email address or mobile number.
2. Think carefully before posting pictures or videos of yourself. Once you've put a picture of yourself online most people can see it and may be able to download it, it's not just yours anymore.
3. Keep your privacy settings as high as possible.
4. Never give out your passwords.
5. Don't befriend people you don't know.
6. Don't meet up with people you've met online. Speak to your parent or carer about people suggesting you do.
7. Remember that not everyone online is who they say they are
8. Think carefully about what you say before you post something online.
9. Respect other people's views, even if you don't agree with someone else's views doesn't mean you need to be rude.
10. If you see something online that makes you feel uncomfortable, unsafe or worried; leave the website, turn off your computer if you want to and tell a trusted adult immediately.

Digital Footprints and Online Behaviour

A person's digital footprint cannot be deleted and can be accessed at any time through a simple social media or search engine search.

To promote a positive digital footprint there are 5 simple rules:

1. **Would you want your grandmother to see it?**
Is that photo/video/comment appropriate for the wider public audience? Would you want a future partner or employer to see it? Once something is online it stays forever.
2. **Do you really think that is private?**
Just because your privacy settings are high doesn't mean that someone else can't repost or screenshot what you have posted.
3. **Would you say it to someone's face?**
If you wouldn't say it to someone face, don't say it online. Portray yourself in a positive way as this may be seen by future friends, partners or employers.
4. **Is this your work to publish/use?**
Reposting or using someone else's work is fine if you credit the original owner creator. If you don't it is plagiarism.
5. **Would you want someone to do it to you?**
How would you feel if someone posted a picture of you or made a comments about you that you didn't like or want online?

Online Behaviour and the Law

- **The Computer Misuse Act 1990** says you can't impersonate or steal someone else's identity online. This means that writing a status on social media pretending to be your friend is technically against the law as it creating fake profiles or websites.
- It is a criminal offence under the **Communications Act 2003** to send messages using any public electronic communications network, such as Twitter or Facebook, which are grossly offensive or of an indecent, obscene or menacing character.
- It is a criminal offence under the **Criminal Justice and Courts Act 2015** for someone to disclose private sexual images of you online or offline without your consent with the effect of causing you distress. This is more commonly known as 'revenge porn'.
- There are a range of other offences which the police can investigate including harassment, harassment when someone fears violence, and stalking under the **Protection from Harassment Act 1997**.

Each case will be taken on an individual basis looking at context and evidence to determine if a crime has been committed. If you believe you have been the victim of a crime screen shot the evidence and speak to the police.

Where to get more help and support

- Parents and trusted family.
- School Staff and Wellbeing Team
- Directly to the police.
- Report any inappropriate behaviour to the website.
- NSPCC - <https://www.nspcc.org.uk>
- Childline - Helpline: 0800 1111 (24 hours, every day) / <https://www.childline.org.uk>
- CEOPS - <https://www.ceop.police.uk/safety-centre/>

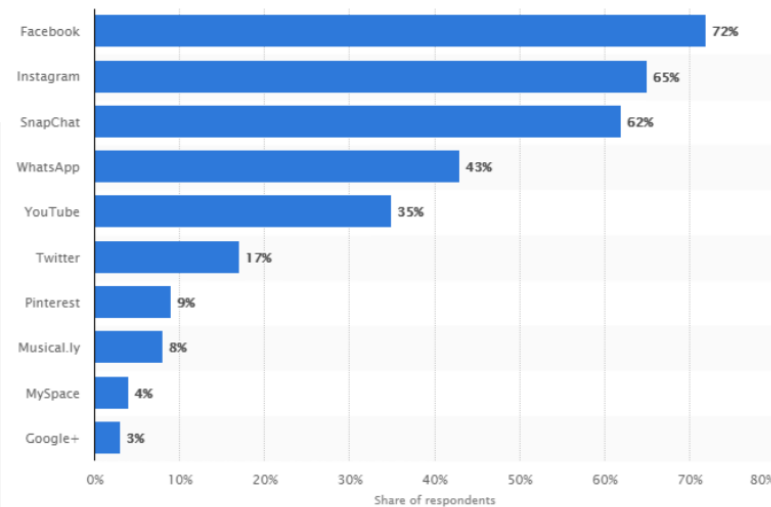
Define: **Social Media**

Websites and applications that enable users to create and share content or to participate in social networking.

Top tips for staying safe on Social media

1. Use a strong password. The longer it is, the more secure it will be.
2. Use a different password for each of your social media accounts.
3. If you have social media apps on your phone, be sure to password protect your device.
4. Be selective with friend requests. If you don't know the person, don't accept their request. It could be a fake account.
5. Click links with caution. Social media accounts are regularly hacked.
6. Be careful about what you share. Don't reveal sensitive personal information ie: home address, financial information, phone number.
7. Become familiar with the privacy policies of the social media channels you use and customize your privacy settings to control who sees what.
8. Remember to log off when you're done.
9. Report any inappropriate behavior to the site.

Social media sites or apps used by children (12- 15) in the UK in 2018



Age Restrictions On Social Media



These are in the websites terms and conditions and are not legal restrictions.

Define: **WhatsApp**

WhatsApp is a messenger app for smartphones. WhatsApp uses the internet to send messages, images, audio or video. The service is very similar to text messaging services, however, because WhatsApp uses the internet to send messages, the cost of using WhatsApp is significantly less than texting.

Define: **YouTube**

YouTube is a video sharing service where users can watch, like, share, comment and upload their own videos. Users can search for and watch videos. Create a personal YouTube channel. Upload videos to your channel. Like/Comment/share other YouTube videos. Users can subscribe/follow other YouTube channels and users. Create playlists to organize videos and group videos together

Define: **Twitter**

Twitter is known as a micro-blogging site. Blogging has been around for some time. Usually blogging consists of people setting up basic websites where they write about whatever they want, whether it be politics, sport, cooking, fashion etc. Posting a message is known as a tweet. People make connections by following other people's twitter feeds. Once you click follow, anything that person or organisation says will appear on your timeline.

Define: **TBH**

short for To Be Honest — is a polling app that lets your friends answer questions anonymously. Essentially it is a big popularity contest, where people received "gems" when they are picked in a poll.

Define: **Facebook**

Facebook is a website which allows users, who sign-up for free profiles, to connect with friends, work colleagues or people they don't know, online. It allows users to share pictures, music, videos, and articles, as well as their own thoughts and opinions with however many people they like.

Define: **Snapchat**

Snapchat is a mobile messaging application used to share photos, videos, text, and drawings. It's free to download the app and free to send messages using it. There is one feature that makes Snapchat different from other forms of texting and photo sharing: the messages disappear from the recipient's phone after a few seconds.

Define: **Instagram**

At its most basic, Instagram is a social networking app which allows its users to share pictures and videos with their friends. Once a user snaps a picture, Instagram filters – of which there are dozens – can transform images in a manner reminiscent of old-fashioned Polaroid prints.

Define: **TikTok (formally Musical.ly)**

TikTok is an app for creating, sharing and discovering short music videos (15 sec), think Karaoke for the digital age. It used by young people as an outlet to express themselves through singing, dancing, comedy, and lip-syncing.

Key Words

Vector Image



- Is created in graphics packages and **consist of shapes called objects**.
- Even if an object in a vector graphic is quite large, it doesn't need a lot of computer memory. Therefore the **file size of a vector graphic is often very small**.
- **Are scalable** - i.e. when you resize them, they do not lose quality.

Bitmap (raster) Image



- Is composed of **many tiny parts, called pixels**. The pixels are often many different colours.
- It is **possible to edit each individual pixel**.
- Since the computer has to store information about every single pixel in the image, **the file size of a bitmap graphic is often quite large**.
- **Are NOT scalable** - i.e. when you resize a bitmap graphic, it tends to lose quality.

Compression



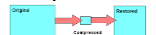
- Used to **reduce a files size** so it can be uploaded/downloaded or transferred more quickly.

Lossless Compression



- Takes advantage of the limitations of the human eye and **removes data that cannot be seen**. **Losing quality**.
- Data is lost and **is not added back when the file is uncompressed**.

Lossy Compression



- **Reduces file size with no loss of data or image quality**.
- Data is not lost and is added back when the file is uncompressed.
- Cannot compress to as small a file as a lossy method does.

Manipulation



- **Transforming or altering an asset** using methods/techniques to achieve desired results.

Composition



- Is the result of **2 or more images that have been combined** or overlaid.

Layer



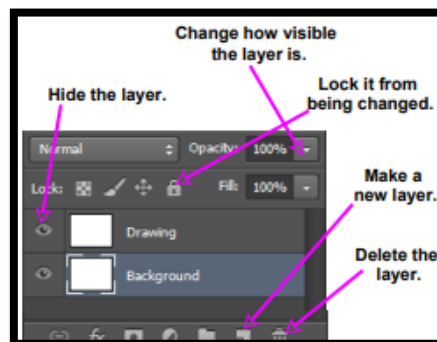
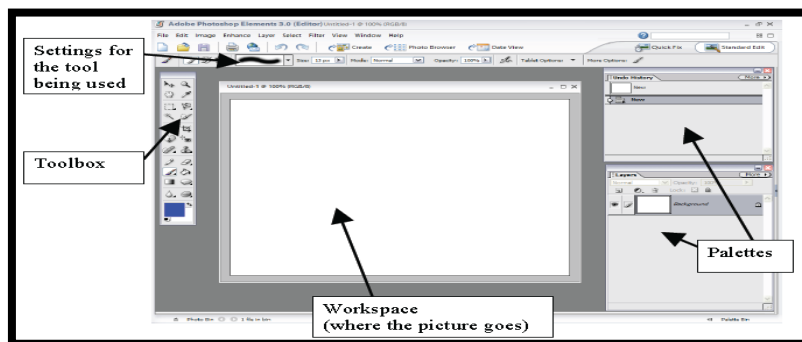
- Photoshop layers are like **sheets of stacked acetate**.
- **Transparent areas on a layer let you see layers below**. You use layers to perform tasks such as compositing multiple images, adding text to an image, or adding shapes.

Why someone might use Photoshop/Photopea to manipulate an image.

- **To improve it in some way, e.g. by removing a spot from a supermodel's nose!**
- **To use as proof that something actually happened, e.g. UFO flying over your house!**
- **To provoke a shock reaction.**
- **To create a piece of art.**

File Types.

- **. BMP - Microsoft file type, not usually compressed, so large files, widely accepted.**
- **. GIF (Lossy) - Graphics Interchange Format, limited to 256 colours, keeps transparency.**
- **. JPG (Lossy) - Joint Photographic Experts Group, does not keep transparency.**
- **. PNG (Lossless) - Portable Network Graphic, good for images in colour, larger file size than a jpeg, keeps transparency.**
- **. TIFF (Lossless) - Tagged Image File Format, not used on the WWW due to its very large file size, file standard in printing.**



Shortcuts

Ctrl + D	Deselect
Ctrl + T	Free transform
Ctrl + alt + z	Go backwards a step
Ctrl + "+" (or use +)	Zoom in and out

Year 7 Coasts

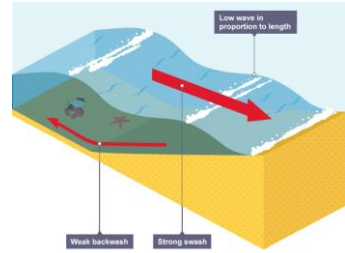
What are coasts and why are they important?

A **coast** is where the land meets the sea. They can all be different with some having tall cliffs made of rock and others being flatter land covered in sand or pebbles.

Peoples are high along the coast as there are many opportunities for jobs and trade with tourism, ship building and importing and exporting products into the UK.

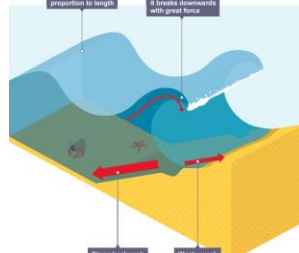
Constructive Waves

- strong **swash** and weak **backwash**
- the strong swash brings sediments to build up the beach
- the waves are low and further apart



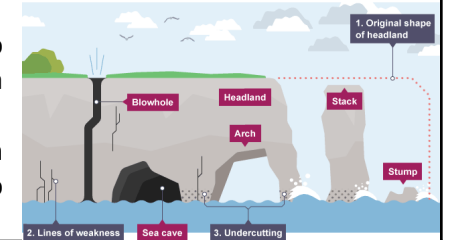
Destructive Waves

- weak **swash** and strong **backwash**
- the strong backwash removes **sediment** from the beach
- the waves are steep and close together



Cave, Arch, Stack, Stump

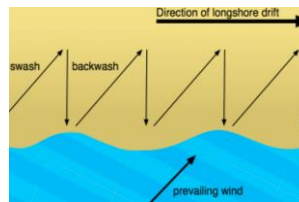
1. There is a crack fault in the headland
2. Hydraulic action erodes the crack and makes it larger to make a cave
3. Hydraulic action continues to erode inside of the cave through until it breaks through the other side of the headland, and this leaves behind an arch
4. The arch is unsupported so collapses into the sea and leaves a stack (column of rock on its own)
5. Erosion continues on the bottom of the stack and it collapses to leave a stump



Coastal Processes

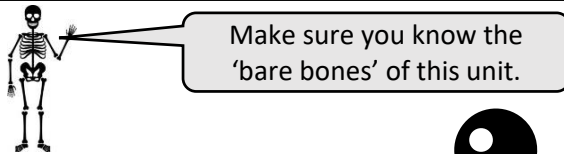
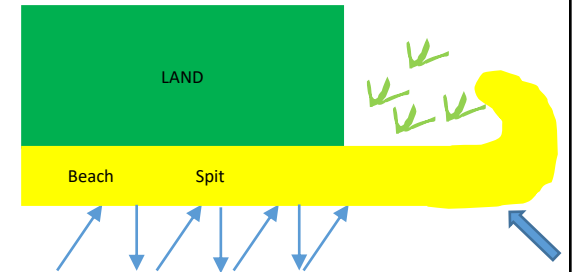
- **Corrasion** – rocks thrown at the cliff
- **Abrasion** – rocks rubbing off the cliff/ground
- **Attrition** – rocks hitting off each other in the waves
- **Hydraulic Action** – water and air forced into cracks causing small explosions and rocks to break away
- **Solution** – salt in the sea water dissolves rocks

Long shore drift Swash moves forwards at an angle due to the prevailing coming in at an angle. This causes the swash to move forward at an angle. Gravity causes the backwash to go straight back. This repeats and sediment is moved along the coast.



Spits

1. **Longshore drift** moves sediment along the coast
2. There is a gap in the land or a river estuary blocking the movement of sediment and the longshore drift continues and **deposits sediment**
3. A **spit** (a long finger of sand) grows out into the sea
4. The end of the **spit curves** due to change in the wind
5. A **saltmarsh** forms behind the spit



Make sure you know the 'bare bones' of this unit.

Keywords

Tides - regular rise and fall of sea levels

Swash – forward movement of the waves

Backwash – backward movement of the wave as it pulls back out to sea

Coastal Processes – how the waves breakdown (erode), move (transport) and drop (deposit) sediment along the coast

Sediment – sand and broken down rocks

Erosion – how the waves break down rocks

Transportation – how waves move the sediment

Deposition – waves lose their energy and drop the sediment

Salt Marsh – a wetland area of a coast which can be covered by the rising tide and then visible in a lower tide

Hard Engineering – man made methods of reducing coastal erosion

Soft Engineering – more natural looking methods of reducing coastal erosion

Headlands and Bays



Waves approach a **discordant coastline** (hard rock and soft rock)



Hydraulic action erodes the soft rock and a **bay** that curves in land forms. The hard rock is the **headland** and is less easy to erode; therefore it points out into the sea.



There is **wave refraction** (waves spread out and loose energy) . Sediment (sand) is deposited to create a beach in the bay.

Coastal Management

Sea Walls – curved concrete wall takes the waves energy

✓ Last over 30 years

✗ Expensive at £5,000 per square meter

Groynes - Wood barriers stop longshore drift, beach build ups and protect the cliffs from erosion.

✓ Beach made is good for tourism

✗ £5,000 each and easily damaged

Beach nourishment - Sand added to the beach, waves take out energy on beach protecting the cliffs

✓ Beach for tourists

✗ Only works if you have groynes to trap the sand

Managed Retreat – allowing low value areas of land to be eroded naturally

✓ Creates wetland habitats for wildlife

✗ Farmland and some homes area lost as erosion continues

Year 7 International Development



Make sure you know the 'bare bones' (the basics) of this unit.

Keywords:

- Development** – is the improvement of a country based on their economy and the lives of people
- Development Indicator** – something we use to tell us about the level of development in a country
- Birth Rate** – the number of live births born per 1,000 people
- Death Rate** – the number of deaths per 1,000 people
- Life expectancy** – the average age a person is expected to live to
- Literacy rate** – the number of people who can read and write
- Access to clean water** – the percentage of people that can read and write
- GNI** – Gross National Income is the total amount of money a country makes from what they do in their country and abroad
- Colonialism** – where HICs once ruled over less developed areas to exploit them and use their resources
- Trade** – countries buying and selling between them
- Land locked** – where a country has no coastline and is surrounded by other countries
- LIC** – Less Developed Country (poor)
- NEE** – Newly Emerging Economy (economy is improving)
- HIC** – High Income Country (wealthy)
- Aid** – help given from one country to another
- Fair Trade** – farmers receive a fair price for the products they grow

What is development?

We study development to understand the progress a country is making. It is important to remember not all countries are the same and many countries are trying to improve their development and progress.

Development indicators can help us decide how developed a country is:

- Social** – life expectancy, birth rate, death rate, literacy rates, access to clean water
- Economic** – GNI - a country might have a higher GNI but wealth is not shared equally

Causes of Uneven Development

- Physical** (not caused by people) – hot/dry climate makes it hard for crops, natural disasters means constant repairs so it is harder to improve. Being land locked makes it difficult to trade
- Economic** – trade. HIC sell high tech products earning more money. LICs sell cheap products that do not make as much money.
- Historical** (things in the past) – colonialism. HICs took over LICs and exploited them for their resources. They did not invest money back into the countries and left them underdeveloped.

LIC – Democratic Republic Congo

DR Congo should be one of the richest countries in the world due to its minerals – oil, diamonds, uranium, coltan and rich soil. However, it is land locked and 60% is covered in rainforest making trade difficult as it is hard to build roads and they are far from the coast to sell their products. Also, they were once ruled by Belgium and they did not invest the money back into DR Congo.



NEE – Nigeria has experienced rapid economic growth in a short time.



Physical reasons for development – on the coast it has a wide deep port which allows it to trade all over the world. It has access to oil which it can export; this earns them £10 billion every year.

Human reasons for development – Nollywood is the 2nd biggest employer in Nigeria and worth \$50b to their economy. Also, it has two international airports for trade

HIC – UK

The UK is a HIC due to its industrial past. jobs in the manufacturing industry increased as factories were built, and urbanisation occurred. The UK, due to it being an island, was able to export the products it manufactures all over the world to make money. Since then, the UK has shifted towards a global economy with it being connected to businesses all over the world; this has created higher skilled and well-paid jobs.



Bottom Up Aid - small scale aid projects which target the people who need the help the most, it goes direct to locals from the charity.

E.g. Comic Relief in the DR Congo spent £390,000 on improving schools

- ☺ Locals felt involved and it met their needs
- ☺ It will improve literacy rates and allow children to get well paid jobs in the future
- ☹ Not all parents want their children involved as they need them work and earn
- ☹ The money did not allow them to improve schools in all villages so some missed out



Top Down Aid - large scale aid projects where the government are involved, they spend the money on projects to improve the country

E.g. Inga Dam in DR Congo –\$80b dam to create Hydro Electric Power

- ☺ Largest energy providing project in Africa will improve energy supply
- ☺ Energy can be used by local mines which will boost their work and earn more money
- ☹ 90% of people are not connected to the energy network so will not benefit
- ☹ 35,000 people will have to move so they can build the dam



Fair Trade

HIC countries import a lot of their food from LIC countries. They want to pay the lowest price they can but this means that farmers are not getting paid fairly for the products they make and the work they do. Fair trade means that farmers receive a guaranteed and fair price for their products so they can improve their lives.



FAIRTRADE

Year 7 Topic 12 Graphs Student Knowledge Organiser

Key words and definitions

Co-ordinate – values that show an exact position. First number tells you how far along, second number how far up or down

Mid points – a point that divides a line segment in two equal parts

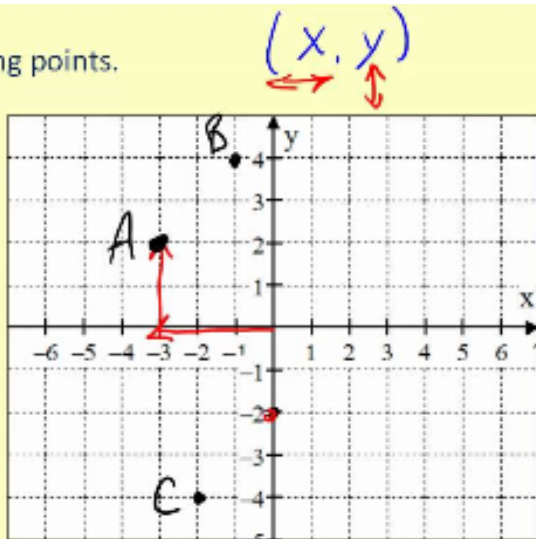
Straight line graphs – plotting a constant rate of change between two variables

Distance-time graphs – describes a journey where the gradient will give the speed.

Plotting co-ordinates

Plot the following points.

1. A(-3, 2)
2. B(-1, 4)
3. C(-2, -4)
4. D(0, -2)
5. E(3, 0)



Drawing a straight line graph

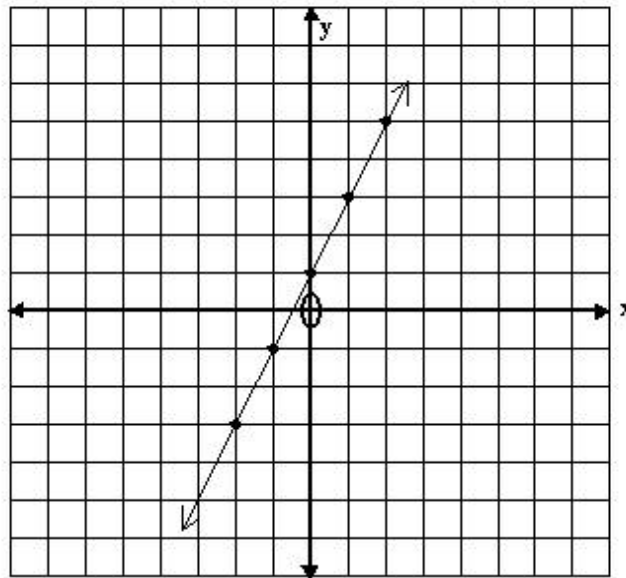
e.g. $y = 2x + 1$

x	$2x + 1$	y
-2	$2(-2) + 1$	-3
-1	$2(-1) + 1$	-1
0	$2(0) + 1$	1
1	$2(1) + 1$	3
2	$2(2) + 1$	5

Choose values for x.

Calculated y values

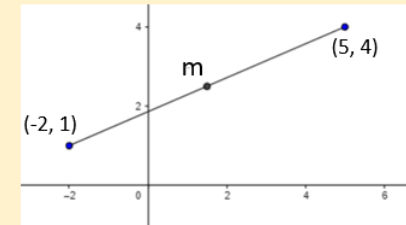
The points to plot are:
 (-2, -3) (-1, -1) (0, 1)
 (1, 3) (2, 5)



Finding a mid-point

Midpoint Formula

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

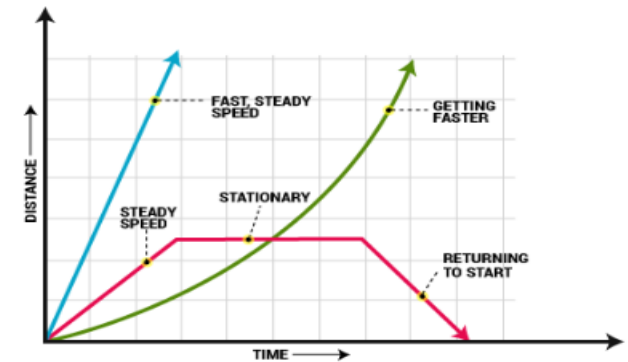


$$m = \left(\frac{-2 + 5}{2}, \frac{1 + 4}{2} \right)$$

$$= \left(\frac{3}{2}, \frac{5}{2} \right)$$

$$= (1.5, 2.5)$$

Distance time graphs



Hegarty Maths Links

Co-ordinate – 199

Mid points – 200

Straight line graphs – 201, 205, 206, 207

Distance-time graphs – 874, 875, 876

Coordinates and midpoints

Reasoning a David uses this rule to generate coordinates.

The x -coordinate is always 1, no matter what the y -coordinate is.

Which of these coordinate pairs satisfy David's rule?

(1, 5), (5, 1), (1, 1), (-1, 3), (1, 0), (1, 4), (3, 1), (1, 2)

b Draw a coordinate grid from -5 to +5 on both axes. Plot the points from part **a** that satisfy David's rule.

Reflect What do you notice about the points you have plotted?

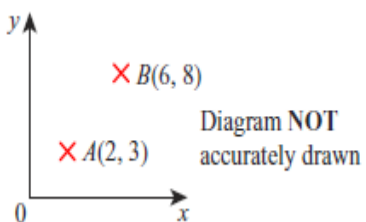
c Charlie uses this rule to generate coordinates.

The x -coordinate is always 3, for any y -coordinate.

Charlie generates the coordinates (3, 0), (3, -2), (3, 4) and (3, 2).

Where do you expect these points to be on the grid?

d Plot the points on the same grid. Were you correct?



The point A has coordinates (2, 3).

The point B has coordinates (6, 8).

M is the midpoint of the line AB .

Find the coordinates of M . (2 marks)

June 2014, Q1, IMA0/2H

Work out the midpoints of the line segments with these start and end points.

a (3, 5) and (7, 9) **b** (2, 7) and (5, 10)

c (-3, 4) and (1, 6) **d** (-2, -5) and (0, 3)



Straight line graphs

a Copy and complete the tables of values for these straight-line graphs.

i

x	-3	-2	-1	0	1	2	3
$y = x + 1$			0	1			

ii

x	-3	-2	-1	0	1	2	3
$y = 2x - 3$			-5	-3			

b Draw a coordinate grid with -3 to +3 on the x -axis and -8 to +8 on the y -axis.

Draw and label the graphs of $y = x + 1$ and $y = 2x - 3$, using your tables of values from part **a**.

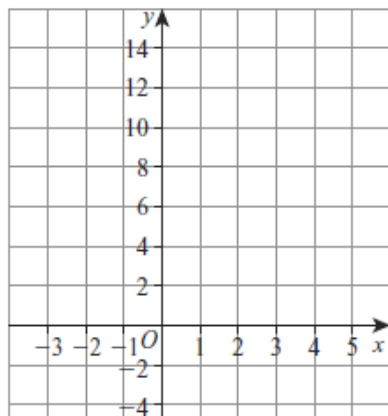
Draw and label these straight-line graphs for $x = -3$ to +3. Copy the coordinate grid from **Q6**. Draw all four graphs on the same grid.

- a** $y = 3x - 2$ **b** $y = 2x + 4$
c $y = 4x - 6$ **d** $y = 0.5x + 1$

a Complete the table of values for $y = 2x + 2$

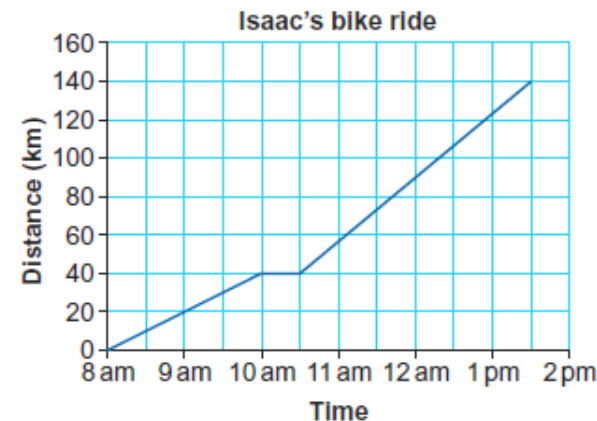
x	-2	-1	0	1	2	3	4
y	-2				6		

b On the grid, draw the graph of $y = 2x + 2$ (4 marks)



Distance time graphs

This distance-time graph shows Isaac's journey on his bicycle



- a** How far did Isaac ride his bike on the first part of the journey?
b At what time did he stop to rest?
c How long did the first part of his journey take?
d What was his average speed on the first part of the journey?
e How many minutes did Isaac rest for?
f How long did the last part of his journey take?
g How far did he ride on the last part of the journey?
h What was his average speed for the last part of the journey?

Year 7 Topic 11 Sequences Student Knowledge Organiser

Key words and definitions

Sequence – a list of numbers or patterns in a special order

Pattern – things arranged following a rule

nth term – a formula to help you find any term in a sequence

Position-to-term – this is another way of saying the nth term

Term-to-term – find the next number in a sequence if you know the previous one

Linear – a sequence which increase/decrease by the same amount each time

Using a term-to-term rule

Find the next term in the sequence 28, 37, 46, 55, 64, ...

① ② ③ ④ ⑤ ⑥

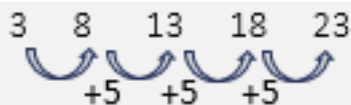
28, 37, 46, 55, 64, 73, ...

+9 +9 +9 +9 +9

← ARITHMETIC SEQUENCE

Answer 73

nth term of a linear sequence



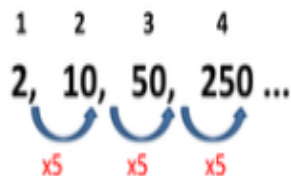
1. Find the *difference* between each term:
5
2. Always put 'n' next to it (n = term number)
5n
3. Add or subtract to get the first term in the sequence?
5 - 2 = 3

The n^{th} term is **$5n - 2$**

Geometric sequence

A geometric sequence is one where to get from one term to the next you multiply by the same number each time. This number is called the **common ratio, r**.

Eg



r=5

Sequences from patterns



Shape number	1	2	3	4	5	6	7	8	9	10	50
Number of matchsticks	3	5	7	9	11	13	15	17	19	21	101
Function rule	Number of matchsticks = Shape number \times <u>2</u> + <u>1</u>										

Finding missing terms

Find the missing terms and rule for: 48, __, 70, __, 92

48 \rightarrow 70 (2 jumps!) gives us: Add 22

So our rule for **one jump** is half this \rightarrow Add 11 (common diff = +11)

Number after 48 $\rightarrow 48 + 11 =$ **59**

[CHECK: $59 + 11 = 70$!]

Number after 70 $\rightarrow 70 + 11 =$ **81**

Hegarty Maths Links

Pattern – 196

Term-to-term – 197

nth-term – 198

Geometric sequences – 264

Year 7 Topic 11 Sequences Practice Questions

Term to term rules

Write down the next two terms in each sequence.

- a** 1.5, 2, 2.5, 3, , **b** $-\frac{2}{3}, -\frac{1}{3}, 0, \frac{1}{3}, \square, \square$
c 3.5, 2.7, 1.9, 1.1, , **d** -1.5, -2.5, -3.5, -4.5, ,
e $\frac{3}{5}, -\frac{1}{5}, -1, -1\frac{4}{5}, \square, \square$ **f** -10.6, -9.9, -9.2, -8.5, ,

Use the first term and the term-to-term rule to generate the first five terms of each sequence.

- a** start at 3 and add 0.4 **b** start at 10 and subtract 0.2 **c** start at 7 and add 3
d start at 7 and add 2 **e** start at -3 and add 2 **f** start at -7 and subtract 5

In a Fibonacci sequence, the term-to-term rule is 'add the two previous terms to get the next one'. Write the next 3 terms in each Fibonacci sequence.

- a** 1, 1, 2, 3, 5, ... **b** 3, 3, 6, 9, 15, ... **c** 5, 5, 10, 15, 25, ...

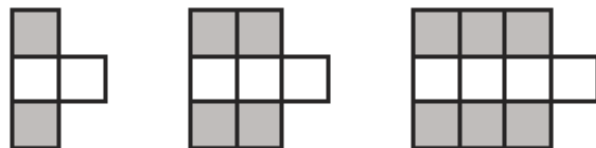
Patterns

Here are some patterns made from white centimetre squares and grey centimetre squares.

- a** Draw pattern 4.
b Find the number of grey squares in Pattern 6.

A pattern has 20 grey squares.

- c** Work out how many white squares there are in this pattern.



Pattern 1 Pattern 2 Pattern 3 (4 marks)

Patterns and nth term

Here is a pattern made from dots.



- a** Draw the next pattern in the sequence.
b Copy and complete this table for the numbers of dots used to make the patterns.

Pattern number	1	2	3	4	5	6
Number of dots						

- c** Write, in terms of n , the number of dots needed for pattern n .
d How many dots are needed for pattern 30?

nth term

Find the n th term for each sequence.

- a** 2, 5, 8, 11, 14, 17, ... **b** 2, 6, 10, 14, 18, 22, ... **c** 2, 7, 12, 17, 22, 27, ...
d 5, 7, 9, 11, 13, 15, ... **e** 19, 17, 15, 13, 11, 9, ... **f** 20, 18, 16, 14, 12, 10, ...

For each sequence, explain whether each number in the brackets is a term in the sequence or not.

- a** 2, 5, 8, 11, 14, ... (50, 66) **b** 5, 8, 11, 14, 17, ... (50, 62)
c 1, 5, 9, 13, 17, ... (101, 150) **d** 4, 9, 14, 19, 24, ... (168, 169)
e 40, 35, 30, 25, 20, ... (85, 4) **f** 5, 11, 17, 23, 29, ... (119, 72)

Q6a hint Work out the n th term
 $\square n - \square = 50$
 $n = \square$

Using the n th term given, find the 20th term.

- a** $2n$ **b** $3n + 1$ **c** $11 - 3n$

Q7 hint Use a function machine to help you visualise.

Find the n th term for each sequence. Use it to work out the 10th term.

- a** 1, 3, 5, 7, ... **b** 3, 6, 9, 12, ... **c** 10, 8, 6, 4, ... **d** 3, 7, 11, 15, ...

Find the first term over 100 for each sequence.

- a** 9, 18, 27, 36, 45, ... **b** 7, 10, 13, 16, 19, ...
c 4, 9, 14, 19, 24, ... **d** 10, 15, 20, 25, 30, ...

Q9 hint
 Solve n th term = 100

Year 7 Topic 9 Equations Student Knowledge Organiser

Key words and definitions

Equation – a statement that two things are equal, each side of equals sign

Substitution – replacing an unknown with a number

Unknown – a number we do not know, usually shown by a letter

Solve – find the value of a variable that makes an equation true

Expand – multiply out the brackets

Inverse – doing the opposite function

Substitution

Evaluate $3a - 2b$, for $a = 10$ and $b = 4$

$$3a - 2b \quad (a = 10 \quad b = 4)$$

$$= 3(10) - 2(4)$$

$$= 30 - 8$$

$$= 22 \quad \checkmark$$

Simple equations

Solve the equation $x - 3 = 7$

$$\underbrace{x-3}_{\triangle} = \underbrace{7}_{\triangle}$$

Visualise the equation as balanced scales.

$$\underbrace{x-3+3}_{\triangle} = \underbrace{7+3}_{\triangle}$$

The inverse of -3 is $+3$. Do this to both sides to keep the equation balanced.

$$x = 7 + 3$$

$$x = 10$$

$$\text{Check: } x - 3 = 10 - 3 = 7 \quad \checkmark$$

3 term equations

Solve the equation $3a + 7 = 13$

$$3a + 7 - 7 = 13 - 7$$

Subtract 7 from both sides.

$$a \rightarrow \boxed{\times 3} \rightarrow \boxed{+7} \rightarrow 13$$

$$\square \leftarrow \boxed{-7} \leftarrow \boxed{-7} \leftarrow 13$$

$$3a = 6$$

$$\frac{3a}{3} = \frac{6}{3}$$

$$a = 2$$

Divide both sides by 3.

$$\square \leftarrow \boxed{\div 3} \leftarrow \boxed{-7} \leftarrow 13$$

$$\text{Check: } 3a + 7 = 3 \times 2 + 7 = 13 \quad \checkmark$$

Equations with brackets

$$2(4p + 1) = 18$$

{Use Distributive Law}

$$8p + 2 = 18$$

{Subtract 2 from both sides}

$$8p + 2 - 2 = 18 - 2$$

$$8p = 16$$

{Divide both sides by 8}

$$\frac{8p}{8} = \frac{16}{8}$$

$$p = 2$$

Unknown on both sides

Solve $4d + 17 = 8d - 3$

$$\underbrace{4d+17}_{-4d} = \underbrace{8d-3}_{-4d}$$

Visualise the equation as balanced scales. Subtract $4d$ from both sides.

$$17 = 4d - 3$$

The inverse of -3 is $+3$. Do this to both sides.

$$17 + 3 = 4d - 3 + 3$$

$$20 = 4d$$

Divide both sides by 4.

$$5 = d$$

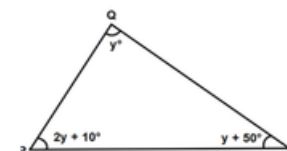
$$d = 5$$

$$\text{Check: LHS} = 4d + 17 = 4 \times 5 + 17 = 37$$

$$\text{RHS} = 8d - 3 = 8 \times 5 - 3 = 37 \quad \checkmark$$

Forming and solving equations

PQR is a triangle. Form and solve an equation to find the value of y .



What do the angles in a triangle add up to?

$$180$$

How can we write an equation for this?

$$2y + 10 + y + y + 50 = 180$$

Can we collect like terms?

$$4y + 60 = 180$$

$$4y = 120$$

$$y = 30$$

Hegarty Maths Links

Solve equations – 177, 178, 179, 180, 181, 182, 183

Solve unknowns on both sides – 184, 185, 186

Set up and solve – 176, 188

Simple equations

Solve

a $a + 3 = 4$
 c $15 = g + 4$
 e $11 = k - 6$

b $c - 6 = 4$
 d $21 + h = 23$
 f $l - 7 = 14$

Solve

a $4h = 40$ b $3m = 15$

3 term equations

Solve these equations.

a $2a + 1 = 5$
 c $3a + 2 = 8$
 e $7f - 12 = 9$
 g $3a + 1 = 8$
 i $8t + 2 = -3$

b $2a - 1 = 5$
 d $3a + 5 = 4$
 f $-5c + 12 = 2$
 h $2p - 4 = -5$

Equations with brackets

Expand and solve

a $5(a - 5) = 70$ b $6(b + 5) = 30$
 c $3(d - 5) = 15$ d $3(2d - 5) = 27$
 e $4(m - 4) = 12$ f $9(b - 11) = 9$
 g $7(4 - c) = 35$ h $-2(e + 2) = -10$
 i $-3(7 - f) = -3$

Solve

a $\frac{3c + 4}{3} = 2$
 b $\frac{4g - 5}{5} = 3$
 c $\frac{5g + 7}{4} = 6$

Unknowns on both sides

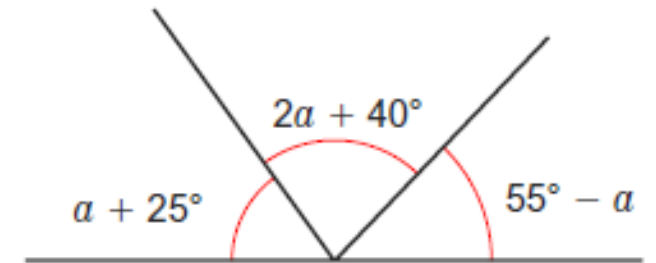
Solve these equations.

a $2a + 9 = a + 5$ b $8b + 9 = 3b + 14$ c $4d + 17 = 8d - 3$
 d $6v - 7 = 3v + 7$ e $3e = 7e - 18$ f $2h + 7 = 8h - 1$

Solve these equations.

a $40 - 3x = 1$ b $9 - 5x = 3x + 1$ c $1 - 6x = 9 - 7x$
 d $8 + 3x = 1 - 4x$ e $13 - 2x = 3 - 7x$ f $3 - 9x = 5 - 6x$

Form and solve



Find the value of a .

Reasoning The length of a rectangle is 3 cm greater than its width. The perimeter of the rectangle is 54 cm. Find its length.

Year 7 Topic 10 Shapes and angles Student Knowledge Organiser

Key words and definitions

Triangle – a three sided shape

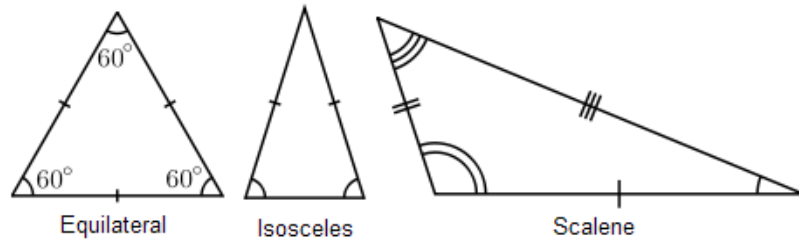
Quadrilateral – a general name for a four sided shape

Parallel lines – lines which never meet, they stay the same distance apart

Plan view – looking down on an object from above

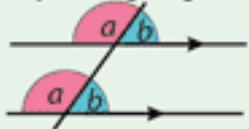
Elevation – view from the front or side of an object

Types of triangles



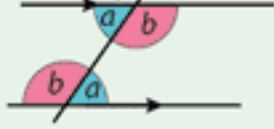
Angles in parallel lines

Corresponding Angles



Corresponding angles are equal. They can be found in F shapes.

Alternate Angles

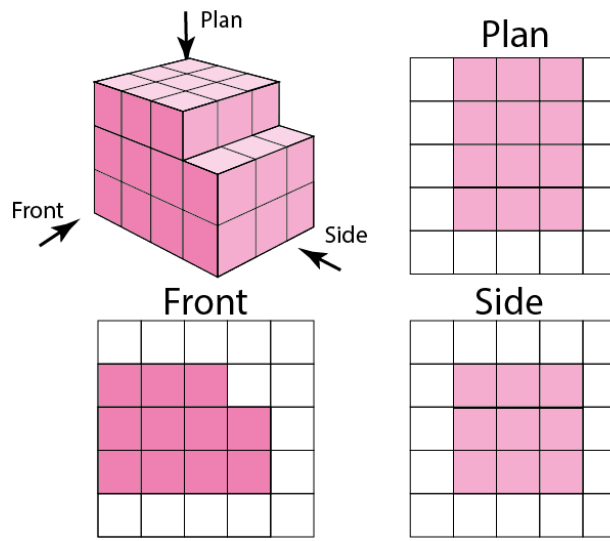


Alternate angles are equal. They can be found in Z shapes.

Types of special quadrilaterals

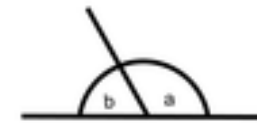
Quadrilateral	Properties	
Rectangle	4 right angles and opposite sides equal	
Square	4 right angles and 4 equal sides	
Parallelogram	Two pairs of parallel sides and opposite sides equal	
Rhombus	Parallelogram with 4 equal sides	
Trapezium	Two sides are parallel	
Kite	Two pairs of adjacent sides of the same length	

Plans and elevations



Angle facts

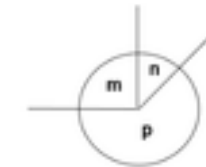
The angles on a straight line add up to 180° .
 $a + b = 180^\circ$



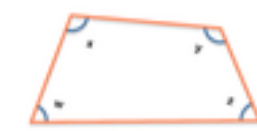
The angles in a triangle add up to 180° .
 $a + b + c = 180^\circ$



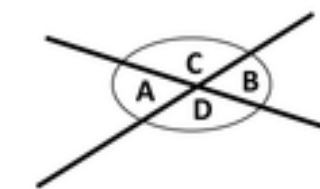
The angles at a point add up to 360° .
 $m + n + p = 360^\circ$



The angles in a quadrilateral add up to 360° .
 $w + x + y + z = 360^\circ$



Vertically opposite angles are equal.
 $A = B$
 $D = C$



Hegarty Maths Links

Triangle – 823

Quadrilateral – 824, 825, 826

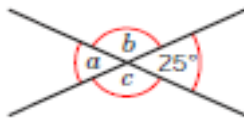
Parallel lines – 481, 482, 483

Plans and elevations – 837, 838, 839, 840, 841, 842, 843, 844

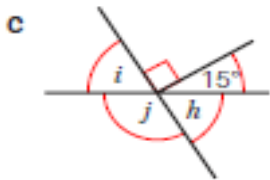
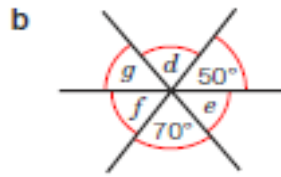
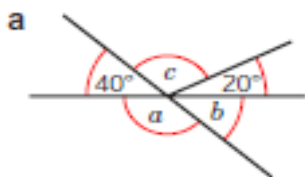
Year 7 Topic 10 Shapes and angles Practice Questions

Angles facts

Reasoning Work out the angles marked with letters. Give your reasons.

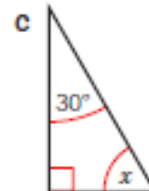
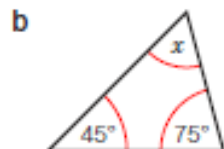
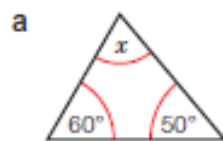


Reasoning Work out the angles marked with letters. Give your reasons for your answers.

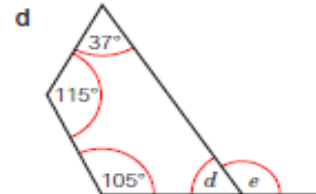
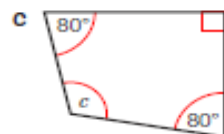


Angles in triangles and quadrilaterals

Calculate the size of each unknown angle.

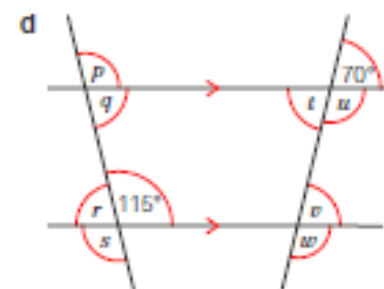
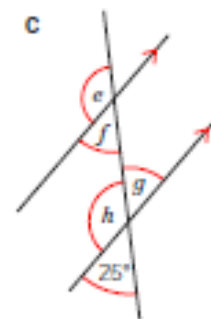
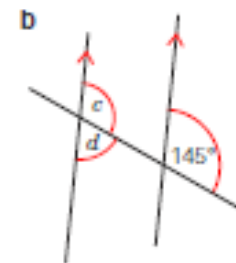
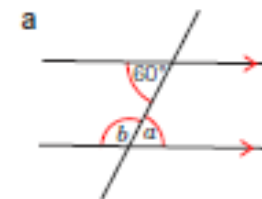


Calculate the size of each unknown angle.



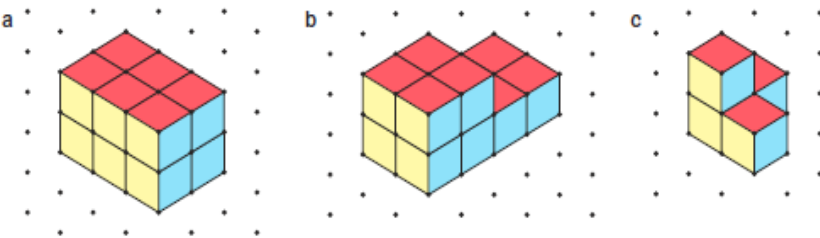
Angles in parallel lines

Reasoning Work out the angles marked with letters. Give reasons for your answers.



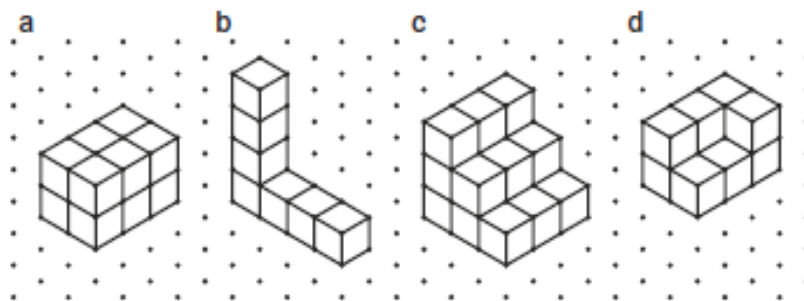
Plans and elevations

Draw the plan, the front elevation and the side elevation of each 3D solid on squared paper.



These solids are made from centimetre cubes.

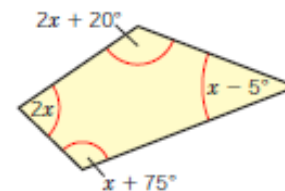
Draw the plan, front elevation and side elevation of each solid on squared paper.



Angle problems

The diagram shows a quadrilateral.

- Write an equation in terms of x for the sum of the angles.
- Solve your equation to find the value of x .
- Write down the sizes of the four angles in the quadrilateral.



Problem-solving In triangle ABC, $\angle ABC$ is twice the size of $\angle BAC$ and $\angle BCA$ is three times the size of $\angle BAC$.

Work out the sizes of the three angles in the triangle.

Packaging Materials

Carton Board

Properties: Thick, can be coated/foil lined for food, easy to print on, 200-500 GSM.
Common Uses: Food and drink, POS, Packaging.



Duplex Board

Properties: Cheaper than standard card, lightweight, stiff, easily coated, 200-500 GSM.
Common Uses: Packaging, food and drinks.



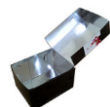
Card

Properties: Stiff, easily cut and creased, 200-500 GSM
Common Uses: Greetings cards, packaging, advertising.



Foil Lined Board

Properties: Stiff, good heat insulator, water and oil resistant, 200-400 GSM.
Common Uses: Takeaway containers. Foil helps to keep food hotter for longer.



Corrugated Cardboard

Properties: Strong, Lightweight, rigid in 1 direction, good insulator, easy to print on, 3-10mm thick.
Common Uses: Heavy duty packaging, storage boxes, takeaway pizza boxes.



What is the difference between paper & board?

Any paper based material weighing over 200 GSM (grams per square meter) is considered to be a board. Board is also measured by its thickness. The measurement used is microns. **1 micron = 1/1000th of a millimetre.** A board that is 500 microns thick measures 0.5mm. Board is generally **more rigid and durable** than paper and is more suitable for items such as packaging, food containers and presentations.

Paper



Board



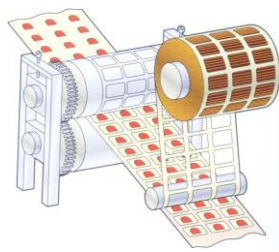
← 200 GSM →

How is packaging Made?

Die Cutting

Die cutting is used to cut multiple, identical shapes, very quickly. A shaped blade called a die is used to cut the paper based material. The material to be cut is placed under the die and the die is lowered. For creasing, blunt blades are used and therefore does not cut through the material but creases it instead.

This process is commonly used when manufacturing nets for packaging. It allows the complex shapes to be cut in high volumes.



Why is Packaging used?



Transport

The box itself is shaped so that when it is transported the boxes can be stacked along side and on top of each other. This means more can be transported at once.

Protect

The egg box has 6 pouches that keep the eggs still so to prevent them from cracking when the box is moved.

The card used is very soft in order to reduce shock if the box is knocked against something.

Contain

The box has 6 separate sections, one for each egg. When the lid is closed the eggs are completely contained so they cannot move.

Inform

The box displays important information such as nutritional information, Best Before dates and basic information such as 'what the product is' so people know exactly what they're buying.

Display

The label on top helps promote the product in the shop. The label displays the brand, a picture of the item and makes the product seem fresh.

None of this could be printed on the egg itself.

Preserve

The egg itself has a protective shell. That shell helps keep the egg fresh and stops any bacteria from touching the inner egg white and yolk.



Creasing and Folding

A **crease** is a permanent line that is created when papers and boards are **folded**. We can use creases and folds to **create complex 3D shapes from the 2D materials** using nets. Folding and creasing can also be used to add creative elements to products such as pop-up cards.



Corrugated card has a folded layer in the centre to make it stronger and tougher.

School based equipment

Equipment	Image	Description
Paper Shears		Used for cutting paper and boards.
Safety Rule		Helps to safely cut when using a knife/scalpel.
Craft Knife		Cutting and scoring various paper and board.
Cutting Mat		Anti-slip to help when cutting. Protects surfaces.
Rotary Cutter		Used to cut paper and boards to correct size.

Packaging

Product Analysis

ACCESS FM - Helpsheet

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

A Product Analysis can take different forms but in general it means asking questions about a product and forming answers. It can mean experts analysing a product or members of the general public or potential customers/groups of people. Product analysis can take place at almost any stage of the design process.

Product analysis can be carried out by:

1. An individual product being analysed.
2. Alternatively a number of similar products can be compared with each other using the same criteria i.e. ACCESS FM
3. Designers can also gather information from companies such as 'www.which.co.uk' where professionals and consumers review products. This gives designers and manufacturers instant market feedback.

Which?

A is for **Aesthetics**



Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**



Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**



Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**



Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**



Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

S is for **Safety**



Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

F is for **Function**



Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**



Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

We can also use ACCESS FM to help us write a **Design Specification**.

A Design Specification lays out the important points of a design project. The Design Specification is written after initial research has been gathered. This ensures that the designer can **justify** each specification point and it's importance to the product.

Design Specification

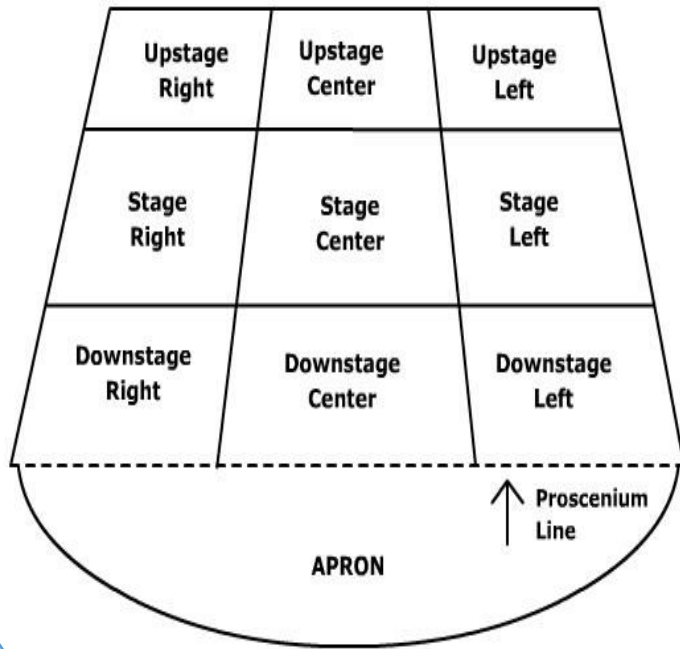
Year 7, Term 3

Introduction to Creating Theatre

Name

Class

Stage Positions



What is Devising?

Devising theatre is a process in which the actors create their own piece of theatre.

This includes choosing:

- **Setting** – Where and when does the story take place?
- **Characters** – Who is involved in the action?
- **Storyline** – What happens in the play?

Keywords

Dialogue	This is speech between two or more characters within a scene.
Prologue	This is an opening of a story or play that establishes the context and gives background details, often some earlier story that ties into the main one.
Still Image	This is a frozen picture which communicates meaning. It's sometimes called a freeze frame or tableau. It can provide insight into character relationships with a clear focus upon use of space/proxemics, levels, body language and facial expression.
Mime	A wordless form of entertainment in which movement and gesture are used to communicate meaning.
Thought Tracking	This is when a character speaks their thoughts and feelings out loud. It is usually used during a still image.

Characterisation

When creating a character you must consider who the character is and how you can physically demonstrate this. To get into role you must know:

- Their background – Where are they from? And what time period is the piece set in?
- How are they feeling in this situation? – Use emotional memory to put yourself in the characters position and think how you would feel.
- How will they act? – Use your previous knowledge on vocal/physical skills to demonstrate the character.

Vocal Skills

Tone, pitch, pace, projection, volume, pause, accent, emphasis, articulation, inflection.

Physical Skills

Movement	Posture
Pace	Stance
Gesture	Facial Expression
Proximity	Touch
Levels	Style

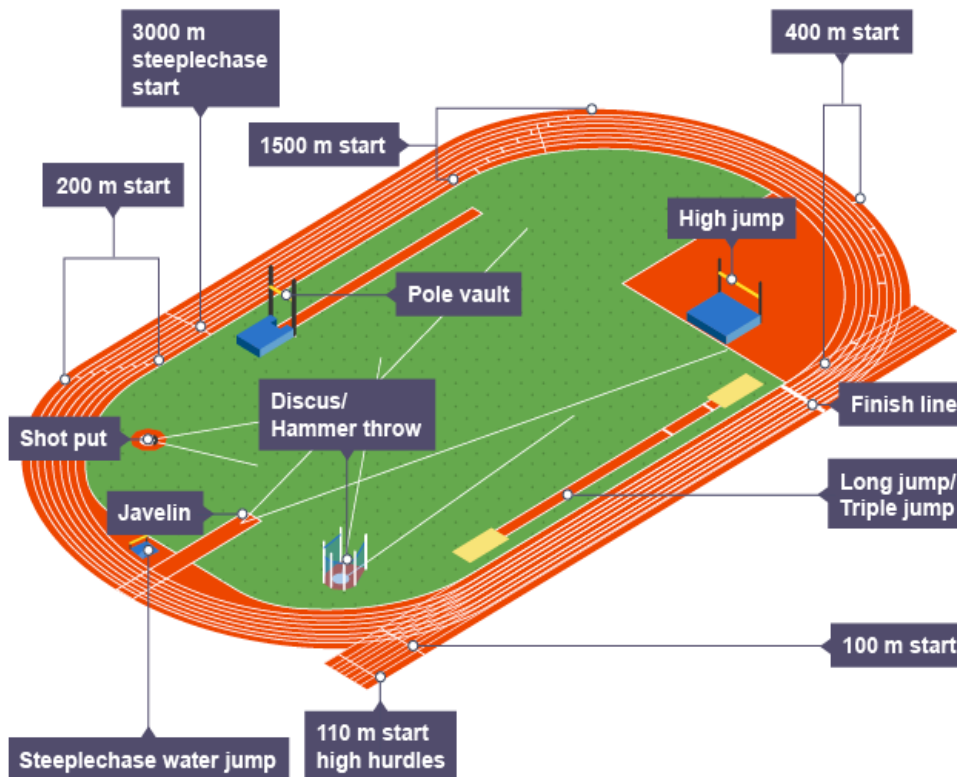
Y7 Subject Knowledge Organiser

Athletics – Competition, Scoring & Officials

Competition

Athletics is a collection of sporting events that consist of the three major areas of running, jumping and throwing. The running events include sprints, middle and long-distance events and hurdling. Jumping events include the long jump, high jump, triple jump and pole vault, while the throwing events include the discus throw, hammer throw, javelin throw and shot put. There are also combined events, such as the decathlon for men, which consists of ten events, and the heptathlon for women, which consists of seven events.

Shown below is a typical competition area for athletics.



Scoring

Success in athletics is judged on times and distances rather than points or goals.

Track events – These races are started with an electronic pistol which is only sounded again on a false start. In races that are very close, officials use a digital line-scan camera across the finish line to give them a photo finish picture. The clock stops when an athlete has passed through the finish line.

Jumping events – These events are measured from the front edge of the take-off board to the first mark made in the sand by the athlete. The distance is always measured to the nearest centimetre and athletes will always be given a minimum of three jumps.

Throwing events – These events are measured from the front edge of the throwing line to the first mark made in the ground by the implement. The distance is always measured to the nearest centimetre and athletes will always be given a minimum of three attempts.

Officials

An athletics competition requires a wide range of officials. These include:

Starter – Starts all track events.

Starter's marshals – Line up competitors in correct order ready for starting.

Timekeepers – Provide official times for all track competitors.

Place judges – Ensure the correct order of positions are given.

Field event judges – Measure, record and let athletes know when it is safe to compete.

Relay judges – Make sure runners at change-overs are in the correct lane and within the change-over box.

Year 7 Sentence Builder 7
Food, drink and meal times

		du pain (bread) du poisson (fish) du poulet(chicken) du gâteau (cake) du jambon (ham)			
Pour le petit déjeuner (for breakfast)		un paquet de chips (a packet of crisps)			
Le matin (in the morning)	je mange (I eat)	de la viande (meat) de la glace (ice cream)	et puis (and then)	je bois (I drink)	du lait (milk) du café (coffee) du coca (coke)
À la récré (at break)	ma mère mange (my mam eats)	une pomme (an apple)	et après ça (and after that)	il boit (he drinks)	de l'eau (water)
Pour le déjeuner (for lunch)	mon ami mange (my friend eats)	une banane (a banana)	et avec ça (and with that)	elle boit (she drinks)	une bouteille d'eau (a bottle of water)
Pour le dîner (for dinner/tea)	nous mangeons (we eat)	une barre de céréales (a cereal bar)		nous buvons (we drink)	un verre d'eau. (a glass of water)
Le soir (in the evening)		des frites (chips) des légumes (vegetables) des bonbons (some sweets)			

Year 7 Sentence Builder 8 Clothes

<p>Au collège [at school]</p>	<p>je porte [I wear]</p> <p>nous portons [we wear]</p> <p>on porte [we wear]</p>	<p>un uniforme [a uniform]</p> <p>un pantalon noir [black trousers]</p> <p>un t-shirt [a t-shirt]</p> <p>un short [shorts]</p> <p>un sweat [a jumper]</p> <p>un jean [jeans]</p> <p>un sweat à capuche [a hoodie]</p> <p>un maillot de bain [a swimming costume]</p>			
<p>Le weekend [at the weekend]</p> <p>Le soir [in the evening]</p>	<p>j'adore porter [I love to wear]</p> <p>je n'aime pas porter [I don't like to wear]</p> <p>je déteste porter [I hate to wear]</p> <p>je préfère porter [I prefer to wear]</p>	<p>une robe [a dress]</p> <p>une chemise blanche [a white shirt]</p> <p>une jupe noire [a black skirt]</p> <p>une veste noire [a black blazer]</p> <p>une cravate rouge [a red tie]</p> <p>une casquette [a cap]</p>	<p>qui est [which is]</p> <p>qui sont [which are]</p>	<p>vraiment [really]</p> <p>extrêmement [extremely]</p> <p>trop [too]</p> <p>un peu [a bit]</p>	<p>cher [expensive]</p> <p>chaud [hot]</p> <p>froid [cold]</p>
<p>En vacances [on holiday]</p>		<p>des baskets [trainers]</p> <p>mes lunettes de soleil [my sunglasses]</p> <p>des chaussures noires [black shoes]</p>			

Year 7 Dance Street Dance

Key Vocabulary

Term
accentuation
backspin
body and arm waves
contraction
crazy legs
down rock
footwork
freezes
glides and slides
hip-hop
isolations
knee spin
pivots
six steps
stresses
syncopation
threading
three step
top rock

What is Street Dance?

Street dance is an umbrella term for various dance styles that originally evolved outside of dance studios in spaces such as streets, parks, playgrounds, and nightclubs and which form part of hip hop culture. Street dance's earliest styles were created largely by African Americans and later Latinos, include breaking, which was created in The Bronx, New York in the 1970s, whilst popping and locking originated on the West Coast during the same decade. Several other subsequent styles fall under the street dance umbrella including house, hip hop, krump, turfing and flexing. In London, breaking, popping and locking are dominant styles.

Key features

- Movements can be initiated and isolated to specific body parts, for example hips or shoulders, with movements having sharp changes of direction and focus.
- A lot of movement will lead from how the torso is reacting to the music.
- Accented beats and syncopated rhythms are paired with strong, sharp (percussive) contractions of the centre of body and other body parts, such as the elbows.
- There is a strong relationship between the different layers of the music production, which in turn denotes various movement dynamics. For example, this could mean certain moves are hard, soft, weighty, light/airy, sharp, smooth or emotive, depending on what the music dictates.
- The ground is important: downward stressed grounded movements and quick, short steps are interspersed with long, smooth steps with the use of still held positions (freezes).
- Most moves have a lot of strength and power behind them, this power is normally gained from the dancer thinking 'from the floor up,' in terms of the energy travelling through their body.

Key facts

- interaction and contact with other dancers and spectators and in direct relation to the rhythms and styles of the music.
- There is normally a 'battle' element central to the dance styles – competitive one-upmanship which can be informal or formalised competition.
 - Still relatively young as a dance style, street dance has heavily influenced popular culture and can be seen on music videos and commercials.
 - The UK has developed a vibrant hip-hop and street dance scene with many regular battles and events.



Year 7 - Individual Voices Poetry KO

Tier 2 Vocabulary

Injustice	Unfair
Nuance	A subtle difference
Deplorable	Awful and immoral
Incandescent	Passionate, usually angry
Vacillate	Indecisive, move between
Ideology	System of ideas and ideals
Despicable	Deserving hatred
Unconscionable	Going beyond the bounds of respectability & understanding
Adversity	Difficulties to face and overcome
Laconic	Brief and to the point

Structural Techniques

Rhythm	The beat of the poem
Volta	The point in the poem where the mood changes
Caesura	A deliberate break or pause in a metric line
Enjambment	Sentences running on over more than one line
Stanza	A group of lines in a poem
Rhyme	Words that have the same rhyming sound
Rhyme Scheme	Patterns of rhyming words
Meter	The pattern of stressed and unstressed syllables
Free Verse	Lines of poetry that do not follow any regular metrical structure
Blank Verse	Lines of poetry that are unrhymed but follow a regular meter
Repetition	Repeated words or phrases
Anaphora	The repetition of words or phrases at the beginning of a line or sentence
Motif	A recurring image in a poem

Language Techniques

Simile	A comparison using <i>like</i> or <i>as</i> .
Metaphor	A comparison using <i>is</i> , <i>was</i> or <i>were</i> .
Imagery	When the writer creates a mental picture or image.
Personification	Giving human attributes to something non-human.
Zoomorphism	Giving animal attributes to something which is not an animal.
Oxymoron	Two words which directly contrast, placed together.
Alliteration	Repeating the same letter.
Connotations	Associated words or meanings.
Pathos	Creating a strong emotional effect.
Semantic field	A group of words related by meaning.
Emotive Language	Language which appeals to the emotions.
Rhetorical Question	A question which does not require an answer.
Imperatives	Command words which direct the reader.

Poetry Key Terms

Word classes	Nouns, adjectives, adverbs, verbs, pronouns
Language	The word choices made by the poet and their effect
Structure	The way the poem appears to a reader, the order and flow
Form	The physical layout of the poem, what kind of poem it is
Tone	Refers to “tone of voice” and how a text sounds, e.g. humorous or serious
Mood	Connected to readers and how they feel or respond to texts, e.g. playful, lonely, warm

Terms for Analysis: The poem...

Achieves	Advances	Affects
Allows	Alludes to	Builds
Concludes	Confirms	Conveys
Denotes	Develops	Demonstrates
Displays	Justifies	Exaggerates
Encourages	Enhances	Establishes
Exemplifies	Emphasises	Explores
Exposes	Forces	Generates
Highlights	Hints	Identifies
Ignites	Illustrates	Impacts
Implies	Identifies	Indicates

Number of lines in or within a poem

Couplet	2
Tercet	3
Quatrain	4
Quintet	5
Sestet	6
Septet	7
Octave	8

Year 7: Elizabethan England

Key Vocabulary	Definitions
Economy	The supply of money and the production of products
Nobility	The rich people in England
Gentry	The middle class
Poverty	Being poor to the point of struggling to survive
Leisure	Time not working, doing activities for fun
Elizabethan	The name given to the time period when Elizabeth I was Queen of England
Legacy	How you will be remembered
Empire	Land taken over and controlled by another country
Migration	Movement from one area to another
Urban	Another term for towns and cities
Rural	Another term for the countryside
Patriarchal	A system of society or government in which men hold the power and women are largely excluded from it
Domestic	Something which takes place or comes from inside the country, rather than from abroad

Problems faced by Elizabeth:

Gender: During the 16th Century, it was believed that women were weak and unable to rule on their own. As a female monarch, it was expected that Elizabeth would listen carefully to her advisors and that she would marry. It surprised many government minister when Elizabeth would argue with them and refused to marry.

Religion: Elizabeth was raised Protestant and had witnessed the many religious rebellions faced by her siblings. Her predecessor, Mary I, had changed England back to Catholic. Elizabeth wanted to find a balanced between the two faiths. England returned to Protestantism, but Elizabeth changed her title to 'Supreme Governor of the Church of England' and kept crucifixes in Churches to please the Catholics.

Inheritance: Many Catholics did not see Elizabeth as the rightful heir to the English throne. This is due to Henry VIII, rather than the Pope dissolving his first marriage. Elizabeth also inherited lots of debt, making it difficult to strengthen England against potential attacks from France, Scotland or Spain.



The Religious Settlement:

Act of Supremacy: This made Elizabeth the supreme governor of the Church of England. All the clergy and royal officials had to swear an oath of allegiance to her.

Act of Uniformity: This established the appearance of churches, church services and a book of common prayer. It created a fine for people who did not attend church on Sundays.

Royal injunctions: These were created to make the rules of religious settlement clear and followed by all. If you did not follow you would be punished.

Education:

Most everyday people could not read or write. Elizabeth insisted on more education for females - they mainly did domestic tasks at home. Sons of nobles had private tutors. Elizabeth I was well educated herself - she could speak 5 different languages!

Voyages of Discovery

English sailors, such as **Walter Raleigh & Francis Drake**, went on daring expeditions. Raleigh sailed to **the New World** & claimed North Carolina & Virginia for England.

Voyages of exploration increased due to: Economic reasons - new markets were needed.



New technology - The astrolabe and improved compass made navigation accurate. Religion/Culture - Elizabethans thought their way of life was superior and wanted to influence others.

The Spanish Armada

In 1588 Spanish King Philip II launched the Spanish Armada, an invasion fleet of 130 ships and 30,000 soldiers and sailors. He wanted to conquer England and restore Catholicism.

After several fights in the Channel the English navy scattered the Spanish fleet using fire ships. 5,000 Spanish sailors died and only half of the fleet returned to Spain.

Mary Queen of Scots

Elizabeth's half cousin plotted against Elizabeth to try and take the throne. Mary was involved in plots to kill Elizabeth:



- 1569 Northern Earls' Rebellion - FAIL
- 1571 Ridolfi Plot - FAIL
- 1583 Throckmorton Plot - FAIL
- 1586 Babington Plot - FAIL

Elizabeth kept Mary prisoner for nearly 20 years, Mary's death warrant was signed in 1587.

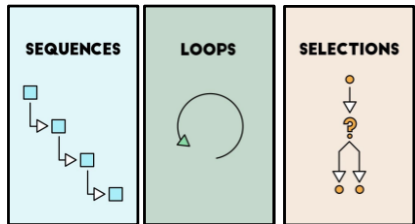
1558	1559	1568	1569	1585	1587	1588	1601	1603
Elizabeth inherits the English throne	Elizabeth sets her religious policy in law	Mary, Queen of Scots arrives in England	First Catholic revolt against Elizabeth	Roanoke colony established	Mary, Queen of Scots executed	Spanish Armada defeated	Poor Law passed	Elizabeth dies. End of Tudor dynasty



Year 7 - Computing - Scratch - Knowledge Organiser



Key Words	
Sequence	Sequence is a programming construct where the order in which the code occurs and is processed.
Iteration (Loop)	Iteration is a programming construct where a section of code is repeated a set number of times (Count Controlled - Repeat) or until a condition is met and you want it to stop (Condition Controlled - Forever).
Selection	Selection is a programming construct when code is selected to be executed over another piece of code, depending on a condition being met.
Variable	Variables are used to store data in a program. A variable can change its value whilst the code is running.
Sprite(s)	Sprites are the images on a Scratch computer program screen. Every Scratch program is made up of sprites and they can be controlled.
Script	A script is defined within the Scratch. Scripts are usually referred to as sets of blocks that consist of at least two programming blocks.
Stage	The Stage is the term for the background of the project. No sprites can move behind the Stage — the Stage is always at the back layer.
Branding	A brand is a way of making your product unique, easy to remember and quick to recognise.
Marketing	Marketing is the method of promoting and selling of products and it includes, market research and advertising.



Visualisation Diagram Top Tips

Remember : TITLE

- T = Title
- I = Images
- T = Text
- L = Labels (annotations)
- E = Extras (Logo, barcode, etc.)

```

when green flag clicked
  set counter to 1
  repeat until counter = 13
    say counter for 1 secs
    change counter by 1
  stop script
  
```

Loop
(repeat until)

```

when green flag clicked
  set deaths to 0
  forever
    if touching Enemy then
      change deaths by 1
    if key: right arrow pressed? then
      change x by 10
    if key: left arrow pressed? then
      change x by -10
  
```

Selection
(if)

Variable
(deaths)

The start of our code

Set the first value of deaths to zero

If the player has touched an enemy then we increase the number of deaths by 1

If the right key is pressed then we move our character to the right (positive on the x axis). If the left key is pressed then we move our character to the left (negative on the x axis).

Scratch Blocks

Motion	Events
Looks	Control
Sound	Sensing
Pen	Operators
Data	More Blocks

Always check the colours to find the right block.

Match the code on the right with the correct blocks.

1. Key Words! Knowledge Organiser - Year 7 - Current and Static Electricity

2. Current and potential difference



Potential difference

A cell or battery provides a push that makes charge move. The push is called the potential difference or p.d. for short.

- The potential difference tells you the size of the force on the charge
- The energy transferred by the cell to the charge
- The energy transferred by the charges to components

Current

When you complete a circuit electrons in the metal move through the wires. The electrons are tiny negative charges that are already in the metal wires. The current is the amount of charge flowing per second. Current is measured using an ammeter.

Series

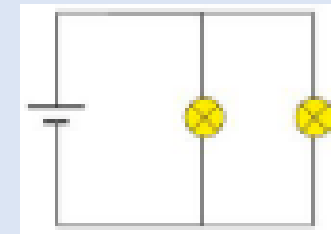
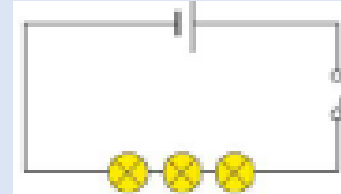
Series circuits have one continuous loop.

- Current is the same everywhere
- Potential difference is shared across the components in the loop

Parallel

Parallel circuits have more than one loop or branch.

- Current is split across the branches
- Potential difference is the same everywhere



4 Series and Parallel

1. Key Words!

Knowledge Organiser - Year 7 - Current and Static Electricity

- Potential difference (voltage):** The amount of energy shifted from the battery to the moving charge, or from the charge to circuit components, in volts (V).
- Resistance:** A property of a component, making it difficult for charge to pass through, in ohms (Ω).
- Electrical conductor:** A material that allows current to flow through it easily, and has a low resistance.
- Electrical insulator:** A material that does not allow current to flow easily, and has a high resistance.
- Negatively charged:** An object that has gained electrons as a result of the charging process.
- Positively charged:** An object that has lost electrons as a result of the charging process.
- Electrons:** Tiny particles which are part of atoms and carry a negative charge.
- Charged up:** When materials are rubbed together, electrons move from one surface to the other.
- Electrostatic force:** Non-contact force between two charged objects.
- Current:** Flow of electric charge, in amperes (A).
- In series:** If components in a circuit are on the same loop.
- In parallel:** If some components are on separate loops.
- Field:** The area where other objects feel an electrostatic force.

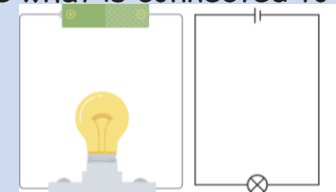
3. Circuit symbols

The following symbols show the different **components** that can be found in an electrical circuit.

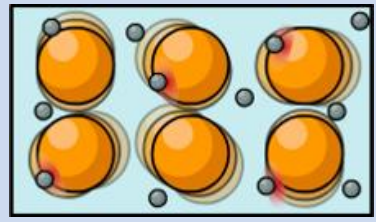
The symbol for a **battery** is made by joining two more symbols for a cell together.

Electrical Circuit Symbols

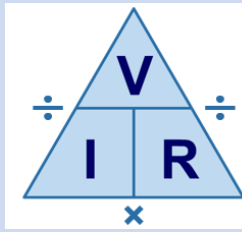
The idea of a **circuit diagram** is to use circuit symbols instead of drawing each component in the circuit. Always try to make the wires straight lines. Do not be tempted to make them wiggly because the whole point is to make it easier to see what is connected to what.



5. Resistance



Each circuit component has a different resistance. This tells you how difficult it is for the charges to pass through the component. The current is the amount of charge flowing per second. The current depends on the amount of 'push' of the battery and the resistance. Resistance has the symbol R and the unit Ohms. Potential difference has the symbol V and the unit Volts. Current has the symbol I and the unit Amps.



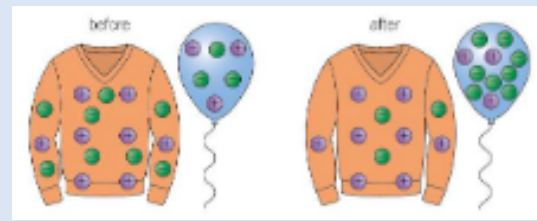
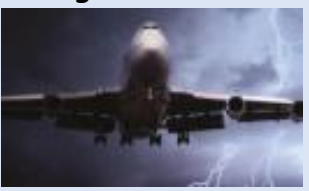
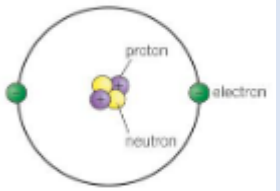
Static electricity happens when two insulating materials are rubbed together. This friction causes the electrons, tiny negative charges (electrons), to move from one material to another.

There are two types of electric charge, positive charge and negative charge.

- Positive charges repel positive charges
- Negative charges repel negative charges
- Positive charges attract negative charges

6. Static

There is an electric field around a charge. The electric field strength decreases as you move away from the charge.



7. Further Reading

Electromagnets	
What is electricity?	https://www.bbc.co.uk/bitesize/articles/z8mxgdm
Electric current and potential difference	https://www.bbc.co.uk/bitesize/guides/zsfgr82/revision/1
Static electricity	https://www.bbc.co.uk/bitesize/guides/zthycw/revision/1
Circuits	https://www.youtube.com/watch?v=-w-VTw0tQIE
Static electricity	https://www.youtube.com/watch?v=V1c61Q7qU-s

1. Key Words! Knowledge Organiser - Year 7 - Relationships in an Ecosystem

- Food web:** Shows how food chains in an ecosystem are linked.
- Food chain:** Part of a food web, starting with a producer, ending with a top predator.
- Ecosystem:** The living things in a given area and their non-living environment.
- Environment:** The surrounding air, water and soil where an organism lives.
- Population:** Group of the same species living in an area.
- Producer:** Green plant or algae that makes its own food using sunlight.
- Consumer:** Animal that eats other animals or plants.
- Decomposer:** Organism that breaks down dead plant and animal material.
- Pollen:** Contains the plant male sex cells found on the stamens.
- Ovules:** Female sex cells in plants found in the ovary.
- Pollination:** Transfer of pollen from the male part of the flower to the female part.
- Fertilisation:** Joining of a nucleus from a male and female sex cell.
- Seed:** Structure that contains the embryo of a new plant.
- Fruit:** Structure that the ovary becomes after fertilisation, which contains seeds.
- Carpel:** The female part of the flower, made up of the stigma, style and ovary.

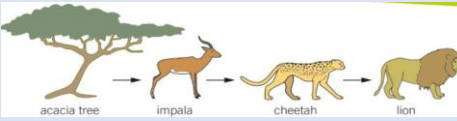
3. Predators and Prey

A **predator** is an animal that hunts, kills and eats other animals. Predators have evolved a variety of physical adaptations for detecting, catching, killing and digesting prey. These include **speed, agility, filters, and suitable digestive systems.**

Prey is a term used to describe organisms that Many prey animals have developed different ad becoming another animal's dinner. **Camouflage, and different defensive weapons and behavior**

2. Food chains & webs

A food chain is a list of organisms in a that show what. A food chain always starts with a **producer**, an organism that makes food. This is usually a green plant, because plants can make their own food by **photosynthesis**, using light energy from the Sun.



The arrows of a food chain show the flow of energy. Energy is transferred to the surroundings by heating and as waste products. This means that at each level of the food chain, less energy is transferred to the organism in the food chain. Most **populations** of organisms that live in a habitat usually have more than one food source. They usually consume more than one organism. This means that there are almost always more than one food chain and these are interlinked into a food web

5. Bioaccumulation



Bioaccumulation is the build-up of poisons along a food chain

Toxic chemicals such as mercury and DDT **accumulate** in the food chain and damage the organisms in it, particularly in the predators at the end of the chain. This is because accumulating compounds cannot be excreted.

Knowledge Organiser

7. Flower Structure

The flower is the reproductive part of the plant.

Petal: May be brightly coloured to attract insects

Anther: Produce male sex cells (pollen grains)

Stamen: The male parts of the flower (each consists of an anther held up on a filament)

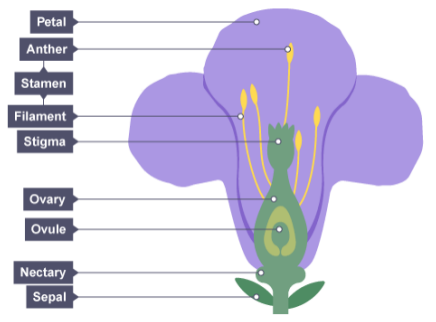
Filament: Thread like structure that supports the anther

Ovary: Produces the female sex cells (contained in the ovules)

Ovule: The female gamete of a plant, this turns into a seed if fertilised

Nectary: Produce a sugary solution called nectar, which attracts insects

Sepal: Protect the unopened flower



9. Fertilisation

1) Pollen lands on the stigma of a flower of the same species. A pollen tube grows from the stigma to the ovary.

2) The nucleus of the pollen grain passes through the pollen tube and joins with the egg cell inside an ovule in the ovary..

3) The fertilised egg cell develops into an embryo, the ovules become seeds and the ovary wall becomes the rest of the fruit. .

8. Pollination

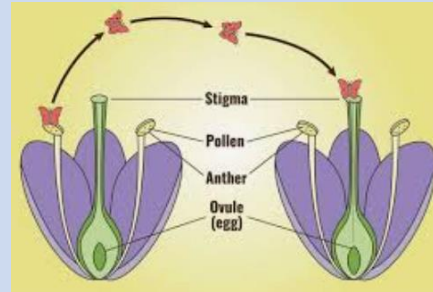
Pollination is when pollen grains from the anther of one flower move to the stigma of another.

Flowers can be pollinated by insects or wind. We depend upon insects for many of our crops. Without them the security of our food would be threatened.

Plants that are pollinated by the wind have different features to those that are pollinated by insects.

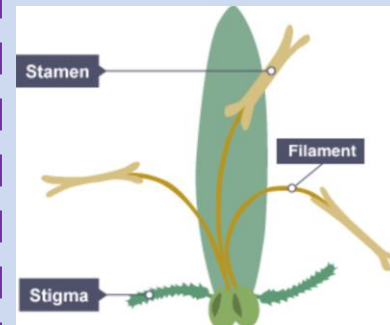
Insect pollinated flowers are:

- Brightly coloured flowers scented with nectar to attract insects
- Sticky pollen grains so it sticks to the insect.
- Anther inside the flower, stiff and firmly attached to brush against the insect.
- Sticky stigma to allow pollen to attach.



Wind-pollinate flowers are:

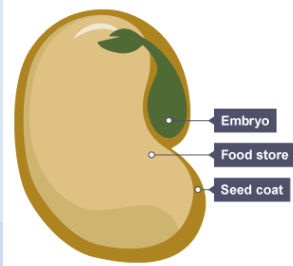
- Small, often dull green or brown, no scent or nectar.
- Pollen grains are smooth and light so they can be carried by the wind.
- Anthers are outside of the flower to release pollen grains.
- Stigmas are outside of the flower to catch pollen grains.



10. Seeds and Germination

A seed has three main parts:

- embryo - the young root and shoot that will become the adult plant
- food store - starch for the young plant to use until it is able to carry out photosynthesis
- seed coat - a tough protective outer covering



Seed Dispersal

Plants have to compete for factors such as; light, water, space and minerals.

So that parent plants do not have to compete with their offspring their seeds must be dispersed (spread out).

Seeds can be dispersed by:

Wind. They have lightweight parts, wings or parachutes allowing them to travel in the air

Animals (outside). Sticky or hooked fruit attach to the fur of passing animals.

Animals (inside). Animals eat the fruits of plants. The seeds travel through the digestive system undamaged. When an animals excretes faeces the seed enters the soil.

Self-propelled. Pods containing seeds burst open when ripe throwing seeds away from the plant.

Germination

When a seed starts to grow it is called germination.

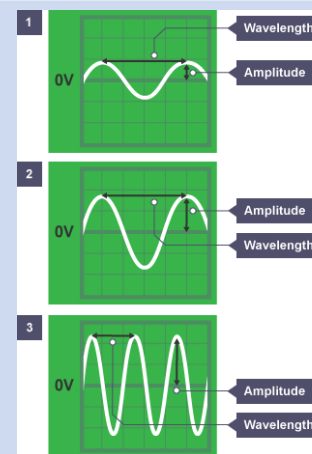
1. Key Words!

Year 7 - Knowledge Organiser - Sound Waves

3. Loudness and Amplitude

- Vibration:** A back and forth motion that repeats.
- Longitudinal wave:** Where the direction of vibration is the same as that of the wave.
- Volume:** How loud or quiet a sound is, in decibels (dB).
- Pitch:** How low or high a sound is. A low (high) pitch sound has a low (high) frequency.
- Amplitude:** The maximum amount of vibration, measured from the middle position of the wave, in metres.
- Wavelength:** Distance between two corresponding points on a wave, in metres.
- Frequency:** The number of waves produced in one second, in hertz.
- Vacuum:** A space with no particles of matter in it.
- Oscilloscope:** Device able to view patterns of sound waves that have been turned into electrical signals.
- Absorption:** When energy is transferred from sound to a material.
- Auditory range:** The lowest and highest frequencies that a type of animal can hear.
- Echo:** Reflection of sound waves from a surface back to the listener

The **amplitude** is the maximum height of the wave from its resting position - the greater the amplitude, the louder the sound



The sound in diagram 2 has a greater amplitude than the one in diagram 1, so it will be louder.

The sound in diagram 3 has a greater amplitude than the one in diagram 1 or 2 so it will be the loudest sound.

Volume is measured in decibels or dB.

REMEMBER! When drawing sound waves make sure that the peaks and troughs are the SAME height/depth. Also... if the pitch is the same then the waves should be the same distance from each other

4. Frequency and Pitch

The **wavelength** is the distance between the crests (tops) of two waves next to each other (or any other two identical point on waves next to each other)

The **frequency** is the number of waves per second - the higher the frequency, the closer together the waves are and the higher the **pitch**

Pitch is measured in hertz or Hz.

Diagrams 1 and 2 show two sounds with the same wavelength and frequency, so they will have the same pitch.

Diagrams 2 and 3 show two sounds with a different wavelength and frequency. The sound in diagram 3 has a higher frequency than the one in diagram 2, so its pitch will be higher.

5. Speed of Sound

$$\text{average speed} = \text{distance travelled} \div \text{time taken}$$

Substance	Speed of sound
Air	343 m/s
Water	1493 m/s
Steel	5130 m/s

Although sound travels quite fast, it is still possible to measure its speed in air. To do this, you need to measure the time it takes a sound to travel a measured distance. To reduce errors, particularly timing errors, you should either:

- Use a large distance (preferably over 50 metres), or
- Use an electronic timer or data logger to record the time taken

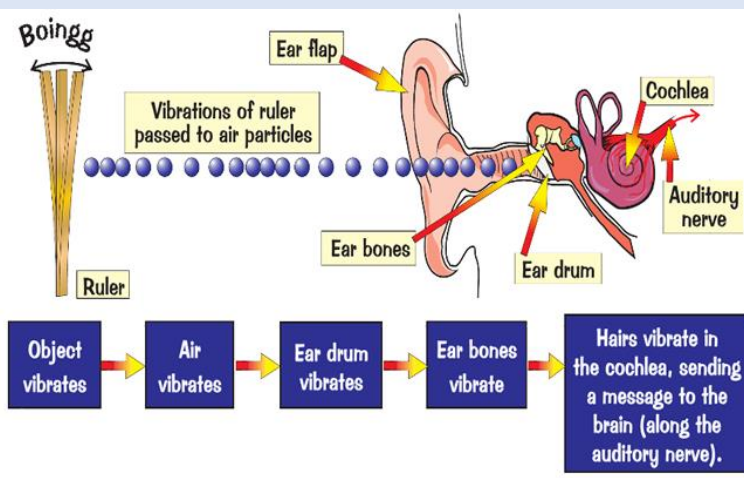
We can use the echo clap method or using a microphone and data logger.

6. The Ear and Hearing

We can detect sound using our ears. It is the organ we use for hearing!

The ear drum vibrates which passes on the vibrations from the air to the small bones, then to the cochlea where it is converted into an electrical impulse which is sent to the brain and detected as sound.

You could compare the ear to the structure and function of a microphone.



6. Further Reading

Colour Spectrum	https://www.youtube.com/watch?v=Gf33ueRXMzQ
Electromagnetic Spectrum	https://www.youtube.com/watch?v=kOkv8ynpppk
Reflection and Refraction	https://www.youtube.com/watch?v=BL2MtP7j-xk
The Eye	https://www.youtube.com/watch?v=syaQgmxb5i0
Electromagnetic Spectrum	https://www.youtube.com/watch?v=kOkv8ynpppk



1. Key Words!

Knowledge Organiser - Year 7 - Chemical Reactions

- Metals:** Shiny, good conductors of electricity and heat, malleable and ductile, and usually solid at room temperature.
- Non-metals:** Dull, poor conductors of electricity and heat, brittle and usually solid or gaseous at room temperature.
- Oxidation:** Reaction in which a substance combines with oxygen.
- Reactivity:** The tendency of a substance to undergo a chemical reaction.
- pH:** Scale of acidity and alkalinity from 0 to 14.
- Indicators:** Substances used to identify whether unknown solutions are acidic or alkaline.
- Base:** A substance that neutralises an acid - those that dissolve in water are called alkalis.
- Concentration:** A measure of the number of particles in a given volume.

3. Indicators

- Indicator:** Substances that change colour depending if the solution is acidic or alkaline. (Such as red litmus, blue litmus and Universal Indicator)
- Universal indicator:** An indicator that changes colour to show the pH of a solution and strength of the acid and alkali.

Litmus Paper

Red Cabbage Indicator

Some fruits/vegetables can also be used as an indicator as the dye pigment changes colour depending on the pH of the substance it is placed in.


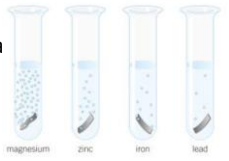
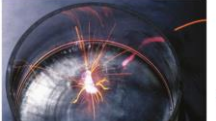
Universal Indicator



7. Reactions of metals

Some metals are reactive and react in this way:

However, some metals like silver, gold and platinum are unreactive and don't react with anything.

With oxygen	With acid	With water
<p>An oxidation reaction takes place (A chemical reaction in which a substance combines with oxygen). Rusting is an example of this reaction.</p>  <p>metal + oxygen → metal oxide</p>	<p>You can observe the reactivity of metal with acid by counting bubbles.</p> <ul style="list-style-type: none"> More bubbles = A more reactive metal Less bubbles = Less reactive metal  <p>metal + acid → salt + hydrogen</p>	<p>Reactive metals can react with water: Metal + water → Metal hydroxide + hydrogen</p>  <p>Less reactive metals can react with water but can with steam: Metal + water → Metal oxide + hydrogen</p>

2. Acids and Hazards

Acid: An acid is a solution with a pH value less than 7. Some acids are safe and found in every-day life:

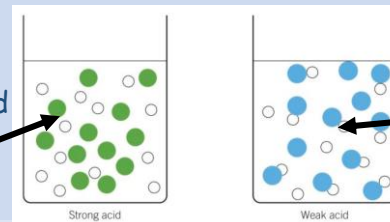


Some acids are dangerous they are **corrosive**. (if it can burn your skin or eyes).



Strong/ weak acids

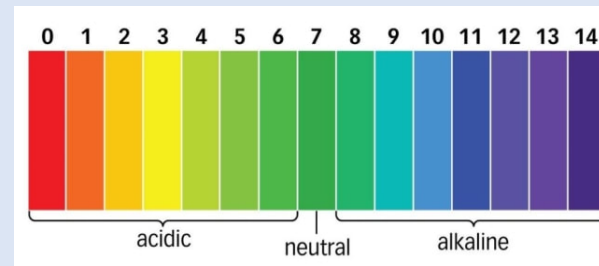
Strong acid: All of the acid particles split up when it dissolves in water.



Weak acid: Only some of the acid splits up when it dissolves in water.

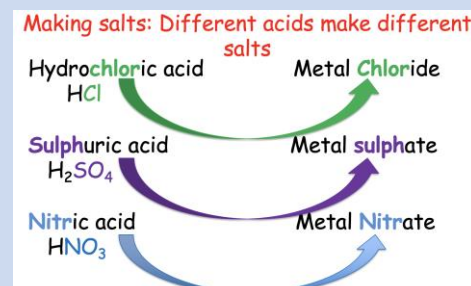
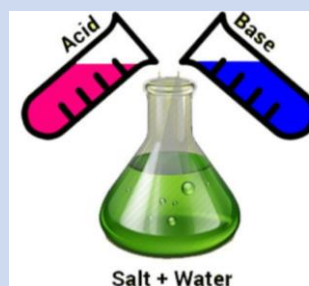
The pH scale is used to show us whether something is an acid, alkali or neutral.

- pH 0-2 = strong acid
- pH 3-6 = weak acid
- pH 7 = neutral
- pH 8-11 = Weak alkali
- pH 12-14 = Strong alkali



4. The pH scale

5. Neutralisation



Too much acid produced in stomach

Take basic substance to destroy acid

Use **vinegar** → A wasp sting is alkaline.

Use **toothpaste** → A bee sting is acidic.

8. Further Reading

BBC bitesize: (reading and testing yourself)
<https://www.bbc.com/bitesize/topics/zypsgk7>

- Acids, Alkalis and pH Scale <https://www.youtube.com/watch?v=-aGRYS7JVd8>
- Neutralisation <https://www.youtube.com/watch?v=cB2vSaalXg>
- Reactivity Series <https://www.youtube.com/watch?v=-R2eNZRzG7Q>



Musical Theatre - Context and Background Facts

Musicals use singing, dancing, and talking to tell stories. They are meant to be entertaining and are usually lighter and funnier than opera. They have easy melodies - audiences could sing along.

They usually have an orchestra to accompany the singers, but many musicals today also have rock instruments such as electric guitars, synthesizers and drumkits.

Early musicals were influenced by jazz and swing music while lots of musicals from the 1970s onwards used rock music.

The types of musicals that are around today began in the 1920s and developed into the 21st Century.



The genre started out on Broadway, a famous theatre street in New York. Later ones were shown in London's West End.

Some songs from Musicals have hit the charts such as Evita's "Don't Cry For Me Argentina" and "Memory" from Cats.

Many musicals have been made into popular musical films; The Sound of Music, Hairspray, Grease, Billy Elliot, Mamma Mia and Les Miserables, Rent, Annie and West Side Story are just a few.

Musicals are usually written in the styles of the popular music that is around at the time. For example, Hamilton, which premiered in 2015, draws on elements of hip hop, as well as R&B, pop, soul, and traditional-style show tunes.



Types of Musicals:

Book Musical (A musical with a story), **Concept Musical** (the idea or concept is more important than the plot - A Chorus Line), **Jukebox Musical** (Popular songs by one artist: We Will Rock You, Mamma Mia), **Rock Musical** (uses rock music).

MUSICAL THEATRE

Knowledge Organiser

Voice Types

There are 4 main different voice types we need to be able to recognise. Each voice type is based on how high or low the singer can sing.

Soprano - a **HIGH** female voice.



Alto - a **LOW** female voice.



Tenor - a **HIGH** male voice



Bass - a **LOW** male voice.



Song Types found in Musicals



Solo: A solo is a song sung by only one character. Solo songs are often deeply meaningful and give an insight into what the character is thinking and feeling in the moment.

Duet: Duets are songs sung by 2 characters. These often include vocal harmonies and question and answer phrasing to suggest a certain relationship or conversation between the two characters.

Chorus: Chorus songs are often (but not always) the big, catchy songs that show what the musical is about. These are usually sung by the chorus in the show or, quite often, everyone in the cast. Chorus numbers often open or close the different acts and show major changes that affect a large number of characters.

Ensemble: Ensemble songs are usually sung by a group of the main characters. The group size can range anywhere from 3 to about 10 singers. Often different characters will have solo lines within the song, but the whole ensemble will come together to sing the chorus.

Singing Techniques

There are also various singing techniques. Two are most used in musicals; these are:

Falsetto - A man adapting his voice to sing higher than his normal range.
Belting - A forced style of singing that gives power and a fuller sound to the note.



Key Words

Dance Break: included in a song for a dance routine.

Libretto: the words and lyrics to a musical.

Word Painting: Often used where the music reflects the words.

Sung-Through: A musical where all the dialogue is sung. (eg. Miss Saigon)

Hook: a line of the song that sticks in the audience's head.





Triple Threat: Someone who can sing, dance and act.

Overture: The music to open the show, often a mix of the best songs in the show.

Important Composers and their Musicals: **Gilbert & Sullivan** 1842-1900 (The Mikado, HMS Pinafore), **Cole Porter** 1891-1964 (Anything Goes, Kiss Me Kate), **Rodgers & Hammerstein** 1895-1960 (Sound of Music, Oklahoma, Carousel), **Leonard Bernstein** 1918-1990 (West Side Story) **Stephen Sondheim** 1930 (Sweeney Todd, Into the Woods), **Jerry Herman** 1931-2019 (Hello Dolly), **Schonberg & Boubill** 1941 (Les Misérables, Miss Saigon) **Andrew Lloyd Webber** 1948 (Joseph & the Amazing Technicolor Dreamcoat, Evita, Cats, Phantom of the Opera) **Alan Menken** 1949 (Little Shop of Horrors) **Stephen Schwartz** 1948 (Godspell, Wicked).



Y7 ART: IMPRESSIONISM

	Impressionism is a 19th-century art movement that usually has relatively small, thin, yet visible brush strokes, open composition, and emphasis on accurate depiction of light.
	Monet, Claude 1840-1926. Monet was a famous French painter whose work gave name to the Impressionist movement. He was concerned most with capturing light and natural forms.
	Georges Seurat (born December 2, 1859, Paris, France—died March 29, 1891, Paris) is the pioneer of technique of painting in softly flickering, small dots or strokes of colour, called Pointillism.
	Post-Impressionism was an art movement that developed roughly between 1886 and 1905. The main artists involved in the movement were Paul Cezanne and Vincent Van Gogh.
	Vincent Willem van Gogh was a Dutch Post-Impressionist painter who is among the most famous figures in the history of Western art. In just over a decade he created approximately 2100 artworks, including around 860 oil paintings, most of them in the last two years of his life.

SMSC Creative thinkers, Cultural, Reflective learners

Timeline



Knowledge links:
Science, History
Maths, English

The Impressionism movement began

1860



Pointillism was developed as a technique by Seurat

1860

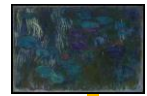


1886



Artists started to rebel against the techniques of impressionism, favouring a more expressive use of paint.

1923



Monet has surgery as his eyesight worsens. Cataracts cause his 'darker' period of painting

Key Terms

Analogous	Analogous colours are groups of three colours that are next to each other on the colour wheel, with one being the dominant colour, which tends to be a primary or secondary colour, & a tertiary. Red, orange, and red-orange are examples.
Background	The part of a picture, scene, or design that forms a setting for the main figures or objects or appears furthest from the viewer.
Broken Colour Technique	Broken colour refers to the building up layers with different colours in a way that allows previous layers to remain visible. This usually involves painting with small dabs of colour, leaving gaps in between.
Colour	What the eye sees when light is separated.
Complementary	Complementary colours are opposite each other in the colour wheel.
Foreground	The part of a view that is nearest to the observer, especially in a picture or photograph.
Form	An element in art where an object appears to have three-dimensions.
Impressionism	Impressionism describes a style of painting developed in France that includes small, visible brushstrokes, unblended colour and an emphasis on accurately capturing natural light.
Line	A line is a mark made in art. A line has a width and a length. A line can be straight, curved, continuous, dashed or broken.
Pointillism	Pointillism was a revolutionary painting technique pioneered by Georges Seurat in Paris in the mid-1880. Pointillism is the application of paint in carefully placed dots of pure, unmixed colour. These are then blended by the viewer's eye to create a more striking image.
Primary Colour	Primary colours are Red, Yellow and Blue. Primary colours cannot be created by mixing other colours together.
Proportion	Proportion is a principle of art that describes the size, location or amount of one element to another (or to the whole) in a work.
Ratio	The relationship between the size, number, or amount of two or more things.
Secondary Colour	Secondary colours are Orange, Purple and Green. A secondary colour is made by mixing two primary colours together.
Shade	A shade is the mixture of a colour with black, which reduces lightness.
Tertiary Colour	A tertiary colour is made by mixing a primary colour together with a secondary colour.
Tint	A tint is the mixture of a colour with white, which increases lightness.
Tone	A tone is produced either by the mixture of a colour with gray, or by both tinting and shading.