

Year 9

Booklet 2
2023/2024

Independent
Study

Name & LF:



Cabot
Learning
Federation

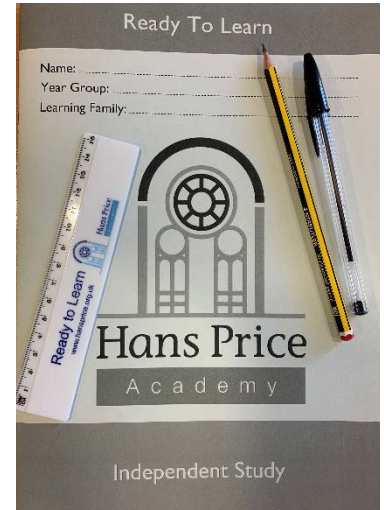
How to Complete Independent Study

You will have three pieces of IS due every week, which will be checked by your teacher of the subject due.

You teachers will set your IS on Bromcom and tasks for each subject are outlined in this booklet as a reminder.

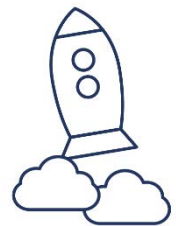
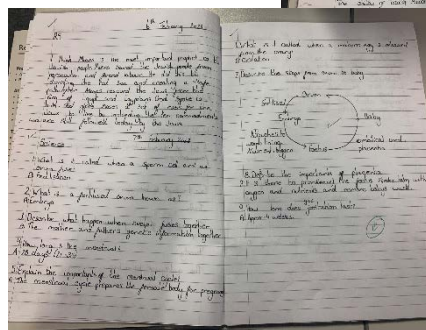
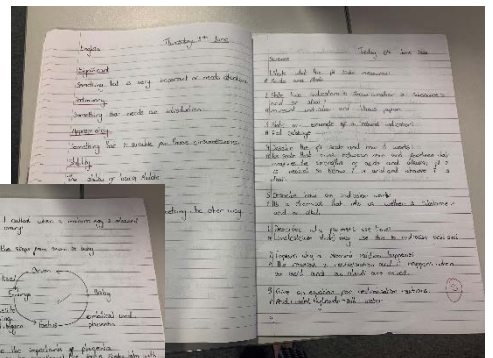
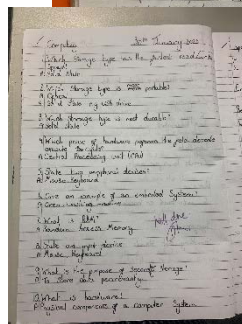
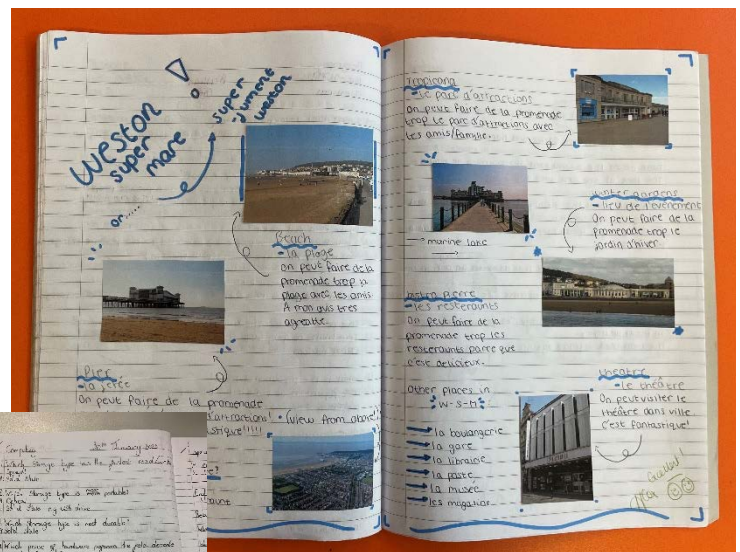
To complete your independent study you will need this knowledge organiser and your grey, IS exercise book. Most IS is set using this booklet. Maths will be set online in SPARX.

You can access further support or computers in IS Club, which is open every day in LS3 from 3:00pm-3:50pm.



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Completed IS is valued by teachers as it extends and supports the learning in lessons. It is rewarded with achievement points.

If students are struggling to complete IS they will be asked to attend a support session after school the following week to address any barriers and ensure the work is completed successfully.

Tasks

Subject	Year 9 Task
English	<p>Write out your understanding of the definitions and create two different sentences showing your understanding of the word.</p> <p style="text-align: center;">OR</p> <p>Create flashcards which display the words and their definitions written in your own words. However, students could also complete the following:</p> <ul style="list-style-type: none"> • Challenge: Complete both the tasks above. • Extra Challenge: Using the template at the end of the booklet, create a Frayer model for one or two of the words. (Etymology= where the word comes from) • Super Challenge: Create a word map. Start with the original word in the middle and add words you associate with that word around it, then words you associate with the secondary words OR write a short story of your choice that includes the key words for the week.
Maths	<p>You will need to log into your SPARX account to complete your IS. Every student needs to complete 100% of the compulsory tasks and can also complete the XP Boost and Target to support your progress. Write your bookwork codes in your IS exercise book and complete the bookwork checks online. If you get stuck, watch the associated video or check in with your maths teacher before the IS is due.</p>
Science	<p>Complete the worksheet in the knowledge organiser booklet: (Wednesday 21st February: CB3d) (Wednesday 27th March: CB4a) (Wednesday 17th April: CP1b.4) (Wednesday 8th May: CP2d.5) (Wednesday 5th June: CP3b.4) (Wednesday 10th July: CP4a.4)</p>
Humanities	<p>Complete the questions outlined in your booklet using the knowledge organisers provided</p>
Computing	<p>Using the knowledge organiser please write 10-15 high quality questions and answers. Write them in the style of the nibble questions. Use the command words state, define, describe, explain etc. Do not include any yes/no or true/false questions.</p>
DT	<p>For Design Tech, please draw the 3D (isometric) shape in the space provided on the sheet. keep to the lines, use a RULER and a PENCIL.</p> <p>For Food Tech, use the eat well plate to construct 10 knowledge recall questions.</p>
MFL	<p>To write 10 sentences in Spanish/French giving your opinion on the topics being covered in class. More specific guidance will be provided on Bromcom.</p>
Careers	<p>Your task will be set in UniFrog. You'll find your log in details in an email from UniFrog. You can use UniFrog at any time to find out more about career pathways, post-16, the local and national labour market and to find out more about about you and your skills.</p>
Music	<p>Select a Film Composer. Choose one of their works to listen to and make notes on. Write a short paragraph 200-250 words on your findings, including a brief overview of the film composer and the music score. Further details on Bromcom.</p>
Art	<p>Create an A4 presentation on a portrait artist. Include a creative title, pictures of their work, facts about them and their work and your opinion of it. Optional: create a copy of one of their artworks. Artist suggestions will be provided before the deadline.</p>
Drama	<p>Find out about the extra-curricular opportunities available within drama and the rest of the performing arts subjects. You can find out more about clubs and performance opportunities in this booklet and from your drama teacher.</p>
PE	<p>Find out more about the extra-curricular opportunities available within PE and performance. Try a range of clubs to explore different sports and activities. There are opportunities to represent your college or Hans Price Academy in a range of teams and event across the year. Find out more from your PE teacher.</p>

Independent Study Hand-In Schedule

The schedule below shows which pieces of independent study will be due each week. They will be checked by the teacher of the subject due in the lesson that week.

Date	Schedule	
Term 4		
19 th Feb '24	English	
	Maths	
	Science	
26 th Feb '24	English	
	Maths	
	Careers	
4 th Mar '24	English	
	Maths	
	Humanities	
11 th Mar '24	English	
	Maths	
	DT	
18 th Mar '24	English	
	Maths	
	MFL	
25 th Mar '24	English	
	Maths	
	Science	
Term 5		
15 th April '24	English	
	Maths	
	Science	
22 nd April '24	English	
	Maths	
	Music	
29 th April '24	English	
	Maths	
	Humanities	
6 th May '24	English	
	Maths	
	Science	
13 th May '24	English	
	Maths	
	Computing	

Date	Schedule	
20 th May '24	English	
	Maths	
	MFL	
Term 6		
3 rd June '24	English	
	Maths	
	Science	
10 th June '24	English	
	Maths	
	DT	
17 th June '24	English	
	Maths	
	Humanities	
24 th June '24	English	
	Maths	
	Art	
1 st July '24	English	
	Maths	
	Computing	
8 th July '24	English	
	Maths	
	Science	
15 th July '24	English	
	Maths	
	Careers	

Extra-Curricular	



How else can I use my Knowledge Organiser?

The Knowledge Organisers in this booklet will help you learn a wide range of knowledge to prepare you for your lessons as well as the multiple-choice tests at the end of this block of learning.

To get the most out of your Knowledge Organisers, you should be learning sections and then testing yourself. There will be set tasks each week based on the Knowledge Organisers, and there are some optional ideas below that you could try in addition to this if you wish.

Key vocabulary:

- Highlight key terms for a subject and look up the definitions
- Write a sentence using the key terms you have highlighted
- Practice spellings – cover, write and check to learn the correct spellings of key terms

Quizzes/questions:

- Write some self-quizzing questions based on the information read
- Test your friends and family on their knowledge of a subject
- Get your parents/carers to ask you some questions
- Create exam style questions and then swap with a friend

Reflection:

- Before a topic – rank order your confidence and then revisit at the end of the topic, rank again and consider where you have improved
- Add more detail to the Knowledge Organiser after you have been taught that topic
- Traffic light (red, amber, green) each box based on how confident you are

Revision:

- Create 2-3 flashcards each week based on each box
- Create a mind map showing the key information from the Knowledge Organiser
- Read ahead to develop skills, knowledge and understanding so you feel more confident before lessons

General use:

- 50 words, 30 words, 10 words – summarise the information on the Knowledge Organiser from 50 words to 30 words to 10 words
- Pictionary – learn the definitions then draw it for your friends/family to guess
- Elevator pitch – summarise the information in a box/whole Knowledge Organiser for a 30 second presentation
- Generation game – like the famous conveyor belt – look at the Knowledge Organiser and then try to remember as many items as possible
- Key term stories – write a short story using 6 key words that are found on the Knowledge Organiser
- Scavenger hunt – read through the Knowledge Organiser with a friend/family member and see who can find specific information/facts first
- Read, cover, check – read the box, write out what you can remember, check what you have missed (then add in purple pen)

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today.”

Malcolm X

“Success is no accident. It is hard work, perseverance, learning, studying, sacrifice and most of all, love of what you are doing or learning to do.”

Pele

“Sticking to good habits can be hard work, and mistakes are part of the process. Don't declare failure simply because you messed up or because you're having trouble reaching your goals. Instead, use your mistakes as opportunities to grow stronger and become better.”

Amy Morin

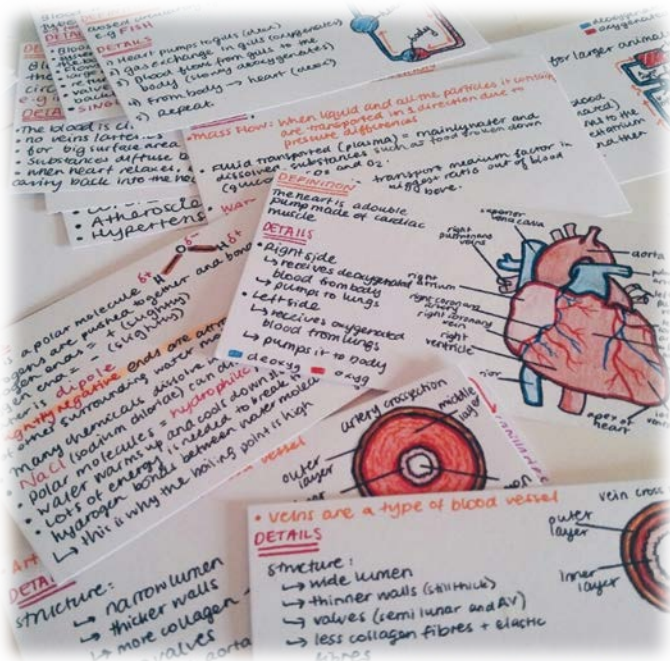
Revision Techniques

Flash Cards

Great for revising key terms and remembering definitions, dates, facts etc.

Split the page of your I.S textbook into four using a ruler or use flash cards which you can collect from the LRC and keep in your I.S folder.

Make brief notes on the information in the knowledge organiser, use colour coding and diagrams where you can to highlight key information.



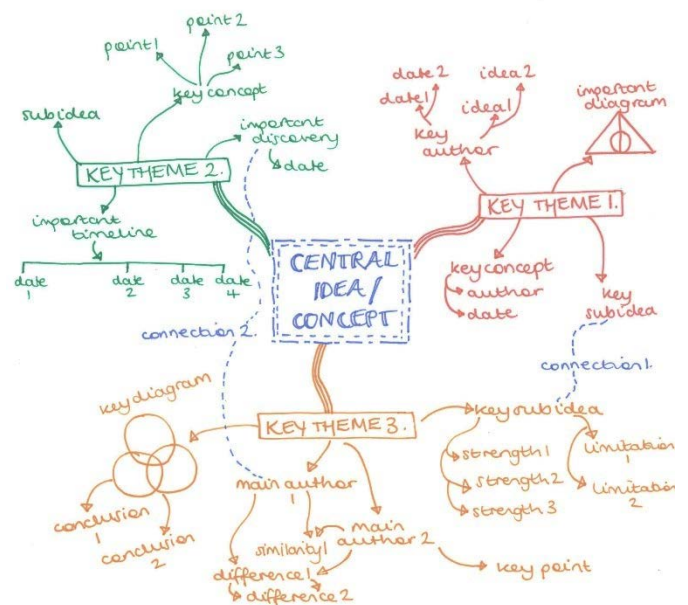
Mind Map

Great for revising if you are a visual learner, allowing you to select and link key information.

Use a full page to add as much detail as you can to your mind map, starting with a key concept or topic at the centre. Use the knowledge organisers and your own ideas.

You can use colour coding, diagrams and connections to support your learning.

MINDMAPPING GUIDE



Self-quizzing Questions

Here is a section of a Science Knowledge Organiser. You could test your grasp of this knowledge by asking yourself,

“What ions are found in acids? Acids contain hydrogen ions.”

“What does corrosive mean? A corrosive acid can destroy skin cells and cause burns.”

These are examples of self-quizzing questions. Write 10-20 self-quizzing questions and answers based on the subject knowledge organiser and focusing on the areas where you need to strengthen your knowledge.

2. Acids (pH 1-6)



- Acids are a family of chemicals, examples are lemon juice, vinegar and Coca Cola. There is also acid in our stomach.
- Acids contain Hydrogen (H⁺) ions.
- Strong acids like hydrochloric acid are very corrosive this means they destroy skin cells and cause burns.
- Weak acids like vinegar are safe to eat but are still irritant to sensitive parts of the body.

KS3 English I.S

Your task each week is to prove you understand the meaning of the 5 words. It is important that when you read a text in front of you, you are able to pick up the language when reading through the text.

Each student as a minimum should:

- Create two different sentences showing your understanding of the word.

E.G.: **hierarchy**:

1. **Hierarchy** is shown in A View From the Bridge through the character of Eddie.
 2. In Romeo and Juliet, women were lower than men in **hierarchy**.
- N.B.: You can change the tense of your word to suit your sentences.*

OR

- Create flashcards which display the words and their definitions written in your own words.

However, students could also complete the following:

Challenge: Complete **both** the tasks above.

Extra Challenge: Using the template at the end of the booklet, create a Frayer model for one or two of the words. (Etymology= where the word comes from)

Super Challenge: Create a word map. Start with the original word in the middle and add words you associate with that word around it, then words you associate with the secondary words. OR Write a short story using the words of the week.



Week's words due	Word	Definition
Week beginning 19/02	detract exacerbate impartial isolate pacify	Take away the worth or value of (a quality or achievement). make (a problem, bad situation, or negative feeling) worse. treating all equally. cause (a person or place) to be or remain alone or apart from others. quell the anger, agitation, or excitement of.
Week beginning 26/02	reconcile Tangible appropriate devastate explicit	restore friendship or harmony. perceptible by touch. clear and definite; real. suitable or proper in the circumstances. destroy or ruin. cause severe and overwhelming shock or grief. Stated clearly and in detail, leaving no room for confusion or doubt.
Week beginning 4/03	implication lucrative perspective respective traumatic	the conclusion that can be drawn from something although it is not explicitly stated. producing a big profit. a particular attitude and point of view of something. belonging or relating separately to each of two or more people or things. deeply disturbing or distressing.
Week beginning 11/03	Succumb attribute digress falter incoherent	failing to resist pressure, temptation, or some other negative force. A quality/characteristic belonging to something/someone. leave the main subject temporarily when speaking or writing. lose strength or momentum.

		(of spoken or written language) expressed in a confusing and unclear way.
Week beginning 18/03	ponder sabotage valid Technique feign	think about something carefully, especially before making a decision or reaching a conclusion. deliberately destroy, damage, or obstruct something. Something that is correct due to logic and evidence. a way of achieving something. pretend to be affected by (a feeling, state, or injury).
Week beginning 25/03	infamous proponent similar viable mediate	well known for something bad. a person who supports and promotes a theory, proposal, or course of action. having a resemblance in appearance, character, or quantity, but not identical. capable of working successfully. Act as a neutral person in a dispute in order to bring about an agreement.

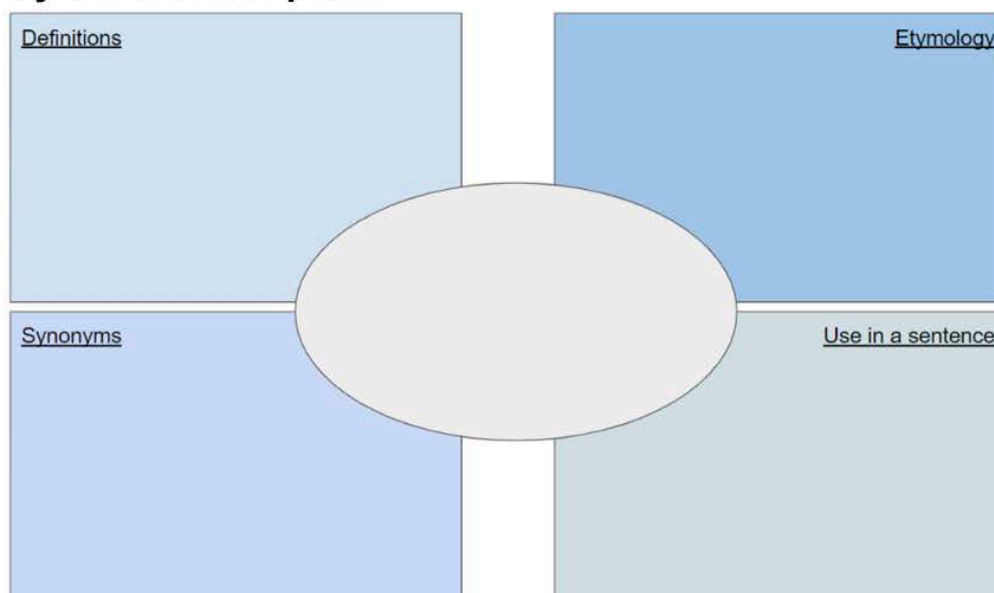
Week's words due	Word	Definition
Week beginning 15/04	Obscure	not discovered or known about.
	Squander	waste (something, especially money or time) in a reckless and foolish manner.
	Absolute	Complete and total.
	Benevolence	the quality of being well meaning; kindness.
	Catastrophe	an event causing great and usually sudden damage or suffering; a disaster.
Week beginning 22/04	Accessible	(of a place) able to be reached or entered. able to be easily obtained or used.
	Ambidextrous	able to use the right and left hands equally well.
	Circumstantial	pointing indirectly towards someone's guilt but not conclusively proving it.
	Camaraderie	mutual trust and friendship among people who spend a lot of time together.
	deficient	not having enough of something.
Week beginning 29/04	Acquaintance	knowledge or experience of something. slight knowledge of or friendship with someone.
	Consequence	a result or effect, typically one that is unwelcome or unpleasant.
	Dysfunctional	not operating normally or properly.
	Etiquette	the expectatoin of polite behaviour in society or a group.
	espionage	the practice of spying or of using spies, typically by governments to obtain political and military information.

<p>Week beginning 6/05</p>	<p>Narrator Tension Atmosphere Rhetoric Imagery</p>	<p>The person who recounts the story. A state of an emotional strain. The feeling that the place and setting creates. The art of persuasive speaking or writing. Descriptive language used to create an image in the reader's mind.</p>
<p>Week beginning 13/05</p>	<p>Connotations Juxtaposition Allusion Futuristic Imperialism</p>	<p>An idea, feeling or word that another word creates for the reader. Two or more things placed together for contrasting effect. A reference to something (e.g a work of literature) within a text. Something relating to an imagined future. The process of increasing a countries power through colonisation of another territory.</p>
<p>Week beginning 20/05</p>	<p>Fatigue Fluorescent Irreconcilable Mischievous nonsensical</p>	<p>extreme tiredness vividly colourful. cannot be made to work in harmony. causing trouble in a playful way. having no meaning; making no sense.</p>
<p>Week beginning 3/05</p>	<p>Nostalgia Omniscient Philosophical Resemblance sequential</p>	<p>a sentimental longing or wistful affection for a period in the past. knowing everything. Theoretical ideas of knowledge, reality, and existence. the state of resembling or being alike. forming or following in a logical order or sequence.</p>

<p>Week beginning 10/06</p>	<p>Irresistible Nuisance Nauseous Opaque Phenomenon</p>	<p>too attractive and tempting to be resisted. a person or thing causing inconvenience or annoyance. Sickening, feeling that one could vomit. not able to be seen through; not transparent. a remarkable thing or person.</p>
<p>Week beginning 17/06</p>	<p>Transformation Theoretical Unanimous Unique Utmost</p>	<p>a marked change in form, nature, or appearance. concerned with or involving the theory of a subject or area of study rather than its actual application. When everyone involved agrees. being the only one of its kind; unlike anything else. The most extreme/greatest something can be.</p>
<p>Week beginning 24/06</p>	<p>Exploitation Exodus Evolution Authority Archetype</p>	<p>Taking advantage of someone/something unfairly. A mass movement of people. the process by which organisms are believed to have developed. The power to make decisions and give orders. A typical example or a particular type of character.</p>
<p>Week beginning 1/07</p>	<p>Hamartia Fatal Permeate Insidious Plethora</p>	<p>A flaw which leads to the downfall of a hero/heroine. Causing death. Spread throughout something. Happening in a subtle way but with harmful effects. A lot of something</p>

<p>Week beginning 08/07</p>	<p>Motif</p> <p>Aside</p> <p>Soliloquy</p> <p>Prejudice</p> <p>Mercy</p>	<p>A recurring idea or symbol throughout a piece of work.</p> <p>A remark made by a character for the audience to hear but not other characters.</p> <p>A character's speech revealing their inner thoughts and feelings to themselves/the audience rather than other characters.</p> <p>Having a bias or an unfair idea about someone not based on reason.</p> <p>Compassion and forgiveness shown towards someone.</p>
<p>Week beginning 15/07</p>	<p>Materialism</p> <p>Usuary</p> <p>Discrimination</p> <p>Revenge</p> <p>Hostility</p>	<p>Considering physical objects more important than anything else.</p> <p>Unethical act of lending money at an unreasonably high interest rate</p> <p>The unjust treatment of someone due to certain characteristics.</p> <p>The act of harming someone in reaction to something they have done to you.</p> <p>Unfriendly and cold behaviour towards someone.</p>

Frayer Model Template:



Hans Price Maths Department

All Independent Study in the Maths department is set using the following online platforms

The logo for SPARX MATHS, with 'SPARX' in white on a black background and 'MATHS' in blue on a white background.

You need to log in to your SPARX account, where there are 3 types of homework:

- **Compulsory**
 - **XP Boost**
 - **Target**

Every student needs to get **100%** of their compulsory homework completed every week. Students need to write out the bookwork codes of each of the questions in their homework book and complete the bookwork checks online.

XP boost and Target sections are additional resources that the students can complete if they wish. They will support the students to make greater progress in Maths, but do not form part of the compulsory Independent Study.

If students get stuck on any question, they should watch the associated video to help them complete the task.

We also subscribe to Times Tables Rock Stars. We encourage students to engage with this program to ensure their foundation of knowledge is solid. We will run College competitions and award prizes to those students with the most coins.



These homework platforms are designed to consolidate your knowledge, and students at KS3 can expect this to take up to 1 hour per week.

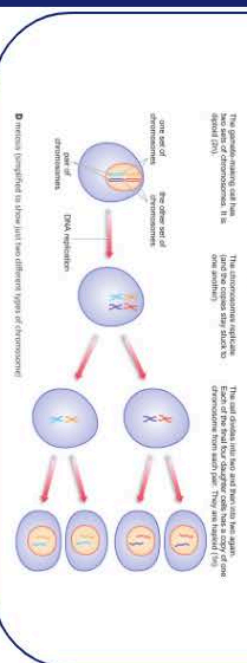


CB3 Genetics



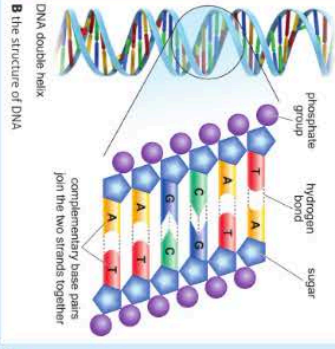
1. Meiosis

There are two types of cell division called mitosis and meiosis. Mitosis produces 2 genetically identical, diploid body cells, for growth and repair. Meiosis produces 4 haploid, genetically unidentical sex cells (gametes). These fuse to form a diploid zygote after fertilisation.



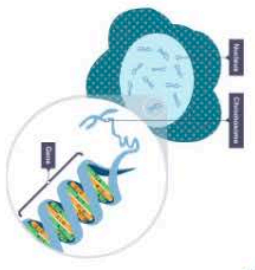
2. Structure of DNA Double helix

There are four bases in DNA: Adenine (A), Thymine (T), Cytosine (C) and Guanine (G). The image shows how the complementary base pairings (A with T and G with C). Each base pair is held together with weak hydrogen bonds.



3. DNA code

Chromosomes
The cell's nucleus contains chromosomes. These are long threads of DNA, which are made up of many genes.



Genes

A gene is a small section of DNA. Each gene codes for a particular sequence of amino acids which produces a specific protein. Genes are inherited down different generations.

4. Extracting DNA

Aim: Describe how to extract DNA from a fruit.

Method

1. Peel the skin from half a kiwi fruit and mash it up.
2. Mix a teaspoon of salt and small volume of washing up liquid and pineapple juice into the fruit.
3. Gently heat this mixture at about 60°C for five minutes.
4. Filter the mixture and retain only the filtrate (the filtered liquid).
5. Cool using an ice bath and gently pour chilled ethanol onto the top of the filtrate.

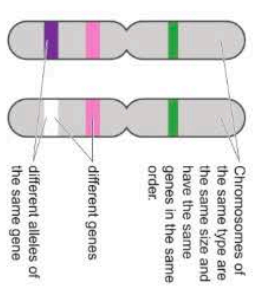
Why use...

- Salt:** Breaks the cell wall
- washing up liquid**
Remove cell/nuclear membrane
- Pineapple juice**
Enzymes to break apart proteins
- Chilled ethanol**
To precipitate the DNA so we can see it

5. Alleles

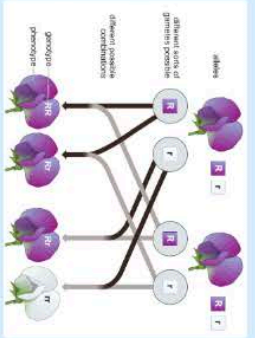
We have two copies of each chromosome. Each gene on each chromosome is called an allele. A certain allele can be the same (homozygous) or different (heterozygous).

Each allele can also be dominant (this one will always be used) represented by a capital letter or recessive (will only be used if the other allele is also recessive) represented as a lower case letter.



6. Haploid and diploid cells

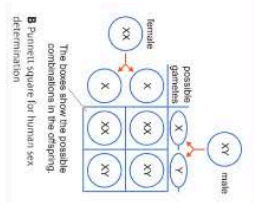
Gametes are haploid, only carrying one set of the chromosome. When the gametes are made in meiosis, only one of the alleles is used. When the sperm and the egg come together in fertilisation, a diploid zygote is produced (now with both alleles - one from the father and one from the mother).



7. Inheritance (sex determination)

A Punnett square shows the possible outcomes for the sex of a baby.

Male (body) cells have an XY chromosome (an X allele and a Y allele). Female (body) cells have an XX chromosome (two X alleles).



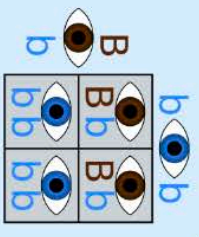
The sperm then either has an X chromosome or a Y chromosome. The egg cell can only have an X chromosome.

The completed Punnett square shows that there are 2 possible outcomes: XX (girl) or XY (boy). 50% chance of a baby being male or female.

8. Inheritance (characteristics)

A Punnett square can also be used to look at characteristics of a baby.

In this example the father has blue eyes
Phenotype (what it looks like: Blue)
Genotype (the alleles that code for it: bb)
 The mother has brown eyes
Phenotype (brown) **genotype** (Bb).
 As the mother's genotype is Bb we call this **heterozygous**. The father's genotype bb is **homozygous recessive**.
 If the dominant (B) allele is used, then the baby will have brown eyes
 If both recessive (b) allele is used, then the baby will have blue eyes.



9. Variation

Some of the variation between individuals of the same species is the result of variation in their genes. **Genetic variation** is caused by the different alleles inherited during sexual reproduction. Different alleles are produced by mutations, some of which cause changes in the phenotype. However, many characteristics also show **environmental variation**, because they are affected by their surroundings. For example, how well a plant grows is affected by how much light, water and nutrients it gets.

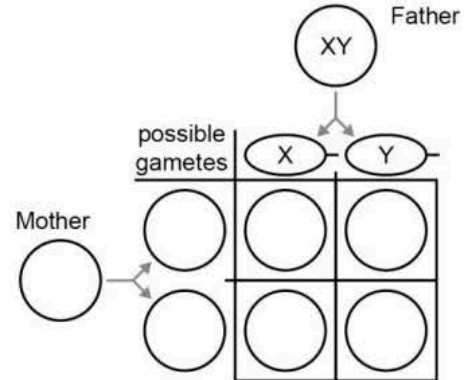


Name _____

Class _____

Date _____

- 1 a Complete the Punnett square on the right to show how sex is determined in humans.
- b What percentage of children do you expect will be girls? Explain your answer.

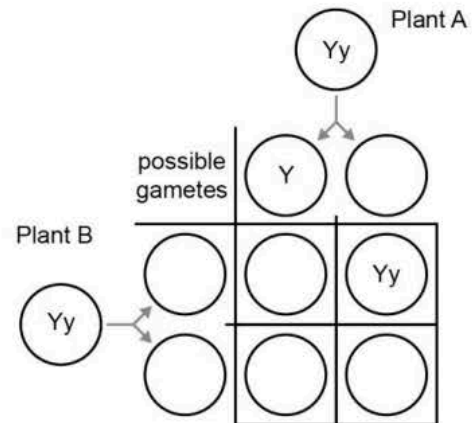


- c What do the letters X and Y represent?

- d What are the names of the male and female human gametes?

- 2 Some pea plants have yellow peas and others have green peas. The allele for yellow (Y) is dominant.

- a Complete the Punnett square to show the possible combinations of alleles in the offspring when two pea plants are crossed.

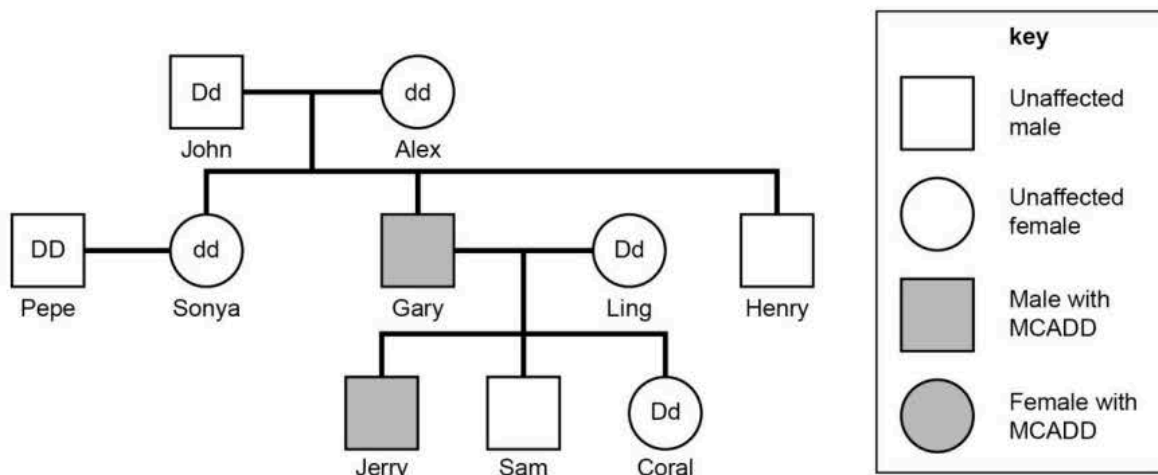


- b What is the ratio of yellow peas to green peas in the offspring?

- c What is the probability that one of the offspring plants will have yellow peas?

- 3 A genetic disorder called MCADD can cause people to feel sick and have fits if they do not eat for a long period of time. The disorder is caused by a recessive allele (d). The family pedigree chart below shows how this disorder has been passed down in one family.

- a Give the name of a male who is homozygous for the dominant allele. _____
- b The shading has been done correctly for the males but not for the females. On the diagram, shade in the females who have MCADD.
- c State the genotypes of: Gary _____ Jerry _____ Henry _____
- d Calculate the probability that another child of Gary and Ling's would have MCADD. _____



1. The Theory of Natural Selection

Charles Darwin studied populations of species and made the following observations:

1. there is **variation** in organisms of same species.
2. parents pass on characteristics to **offspring**.
3. organisms **have to compete** for resources and avoid being eaten.

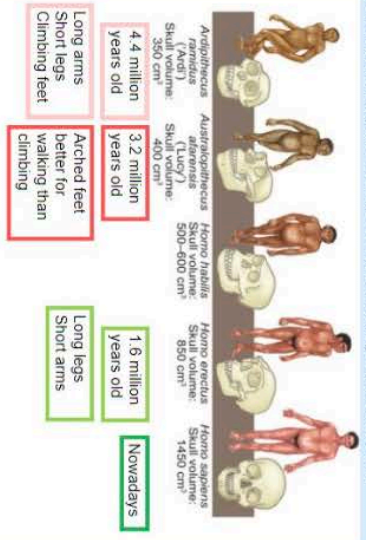
From his observations he devised the Theory of Natural Selection: the idea that populations change over time.

Below are the main stages of the theory, with reference to **antibiotic resistance in bacteria**.

- GENETIC VARIATION** – within the population, some have a mutation which gives them antibiotic resistance.
- ENVIRONMENT** – the bacteria are exposed to antibiotics.
- NATURAL SELECTION** – those with the resistance survive and reproduce.
- INHERITANCE** – the gene for antibiotic resistance is passed on to the bacteria's offspring when they reproduce.
- EVOLUTION** – over many generations, all individuals in the population have antibiotic resistance.

2. Evidence of Human Evolution

Scientists believe humans have changed over time.



Other evidence for human evolution is **stone tools**. They were used for activities such as hunting. The depth of rock they were found in tells us when they were used. Rocks that were found in younger rock are more specialised, suggesting a higher level of intelligence.

3. Classification

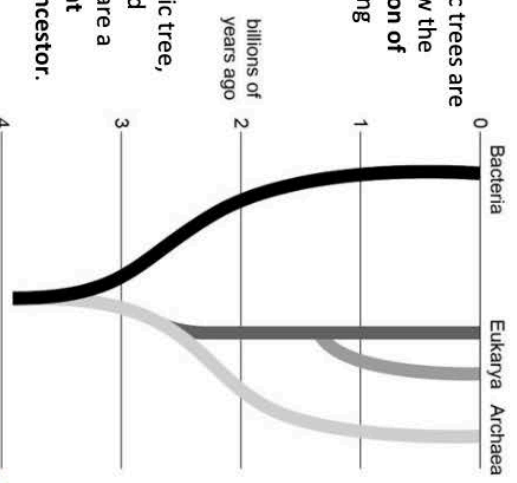
Organisms are grouped based on their features. Carl Linnaeus developed the five-kingdom system. The genus and species form the scientific name of the species.



Classification systems have continued to be developed by other scientists, such as Carl Woese, who developed the three-domain system. This is based on evidence from genetic analysis, which groups archaea and eukaryota as more similar, based on sections of unused genes.

4. Phylogenetic Trees

Phylogenetic trees are used to show the diversification of species during evolution.



From this phylogenetic tree, eukarya and archaea share a more recent common ancestor.

5. Selective Breeding

Selective breeding is when humans artificially select the plant or animals that are going to breed, depending on the **genes**.

- We choose characteristics that are useful or attractive:
- Cows which produce lots of milk
 - Plants that don't get many diseases
 - Dogs which are friendly



Process of Selective Breeding

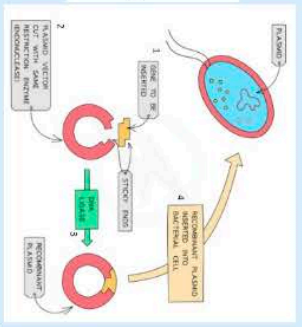
1. choose parents with the desired characteristic from a mixed population e.g. the cow with the biggest muscle mass
2. They are bred together
3. From the offspring those with the desired characteristic are bred together.
4. This continues over many generations until all the offspring show the desired characteristic.

6. Genetic Engineering

Artificial transfer of a gene responsible for a desired characteristic from one organism into another organism, so that it also has the desired characteristic.

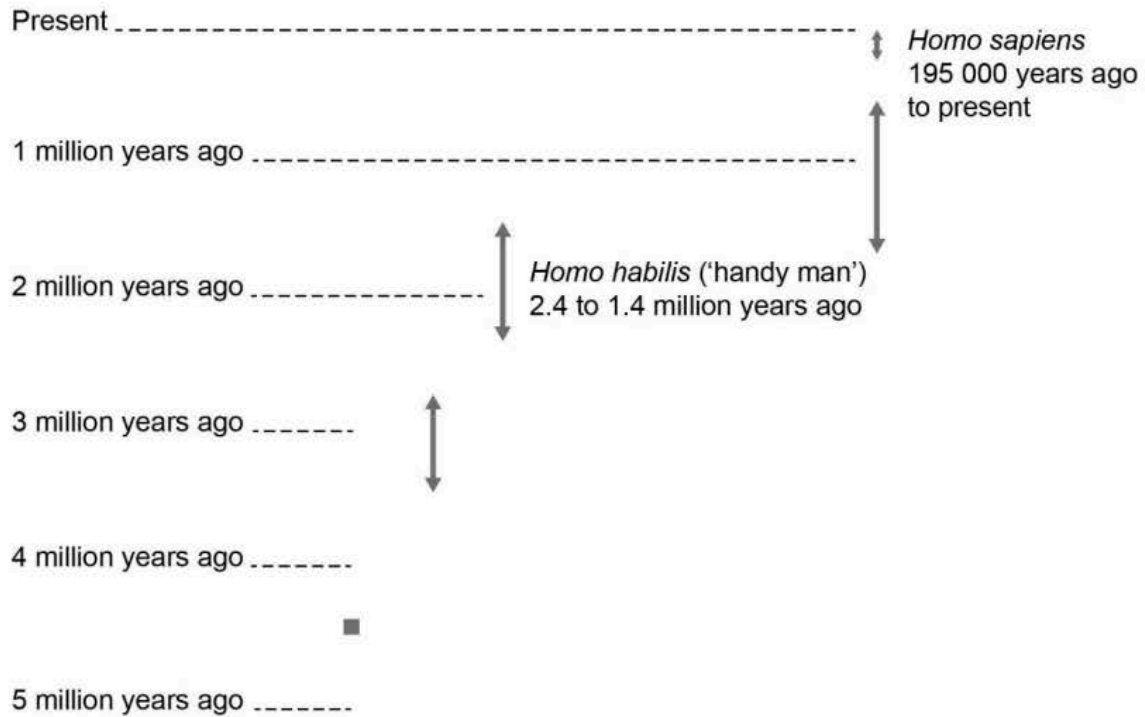
- Examples of genetic engineering:
- Golden Rice – rice that contains beta-carotene
 - Bacteria containing the human insulin gene.
- The stages of genetically engineering:**

1. Cut gene using restriction enzymes
2. Cut plasmid vector with restriction enzymes
3. Complementary sticky ends left
4. Join DNA using ligase



Name _____ Class _____ Date _____

1 Use the information in parts **a–c** below to add **binomial** names to the correct places in the diagram.



- a *Australopithecus afarensis* was an ancestor of modern humans that lived 3.9 to 3.0 million years ago.
- b A fossil of *Ardipithecus ramidus* has been dated as 4.4 million years old.
- c Fossils show that *Homo erectus* was found throughout Asia 1.8 to 0.5 million years ago.

- 2 Which two **species** in the diagram lived at the same time? _____
- 3 Some of these species have nicknames, such as 'handy man' and '**Lucy**'. Add the nickname 'Lucy' and the nickname for *Ardipithecus ramidus* to the diagram above.
- 4 What is the binomial name for modern-day humans? _____
- 5 Name two human-like species discovered by scientists with the surname Leakey.

- 6 Describe one way human-like species changed over time that we can tell from fossils.

- 7 Some scientists think that the species in the diagram above evolved into each other. Others disagree. Give one reason why scientists cannot be sure about the exact **evolution** of the species that led to humans.

- 8 What does the way stone tools used by human-like species changed suggest about human evolution?

1. Scalars and Vectors

Scalars are quantities that only have magnitude (size).
Examples include mass, time, speed, temperature, energy and distance.



Vectors are quantities that have both magnitude (size) and direction.

Examples include force, velocity, momentum, displacement, acceleration and weight.



2. Speed and Velocity

Speed (scalar) in a given direction is known as velocity (vector).
Both speed and velocity are measured in metres per second (m/s).

Speed	<i>How fast an object moves</i>	The speed of a car is 30m/s. A car moves forward with a velocity of 30m/s.
Velocity	<i>Speed + direction</i>	

3. Distance and Displacement

Distance is how far an object has travelled and is a scalar.
This can be measured in metres (m) or kilometres (km).



Displacement is the distance travelled in a straight line and is a vector.

An athlete runs once around an athletics track.
This athlete has travelled a distance of 400m but the displacement of the athlete is 0m.

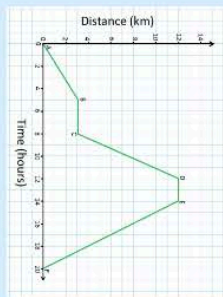
4. Distance Time Graphs

A distance time graph shows how far an object moves along a straight line.

The speed of an object can be calculated from the gradient of a line.

When the line goes flat or has no gradient, the object is stationary.

A steeper line means the object is travelling at a faster speed.

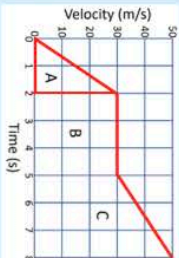


CP1 MOTION



5. Velocity Time Graphs

A velocity time graph shows the velocity of an object over a period of time. It simply shows how fast an object is moving.



A flat line on the graph shows an object moving at constant (same) speed.

A steeper line shows the object with greater acceleration.

A diagonal line going up shows constant acceleration (speeding up).

A diagonal line going down shows constant deceleration (slowing down).
The area under a line is the distance travelled. This can either be a triangle or a rectangle.

6. Calculating Speed

Measure the distance between 2 points using a tape measure.

Measure the time taken for an object to move between the 2 points.

Use speed = distance / time

Usain Bolt runs the 100m in 9.58 seconds.

Calculate his average speed.

$$\frac{100 \text{ metres}}{9.58 \text{ seconds}} = 10.44 \text{ m/s}$$



7. Acceleration

Acceleration is how quickly an object speeds up. It is also the change in velocity in a certain amount of time. It is measured in m/s/s which can be written as m/s².

Acceleration can be calculated by dividing the change in velocity (final velocity – initial velocity) by the time taken.

$$a = (v - u) \div t$$

A car accelerates from 13m/s to 31m/s in 12 seconds.

Calculate the acceleration of the car.

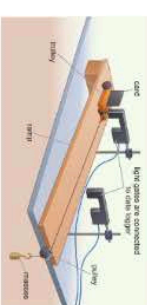


$$\frac{31\text{m/s} - 13\text{m/s}}{12\text{s}} = 1.5\text{m/s}^2$$

8. Investigating acceleration

Acceleration is affected by force and mass.

This can be investigated using light gates and a ramp.
Light gates are used to calculate the speed at point A and the speed at point B. They also measure the time taken between point A and point B. The ramp is used to reduce the effect of friction.

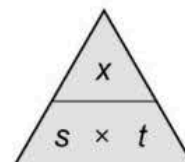
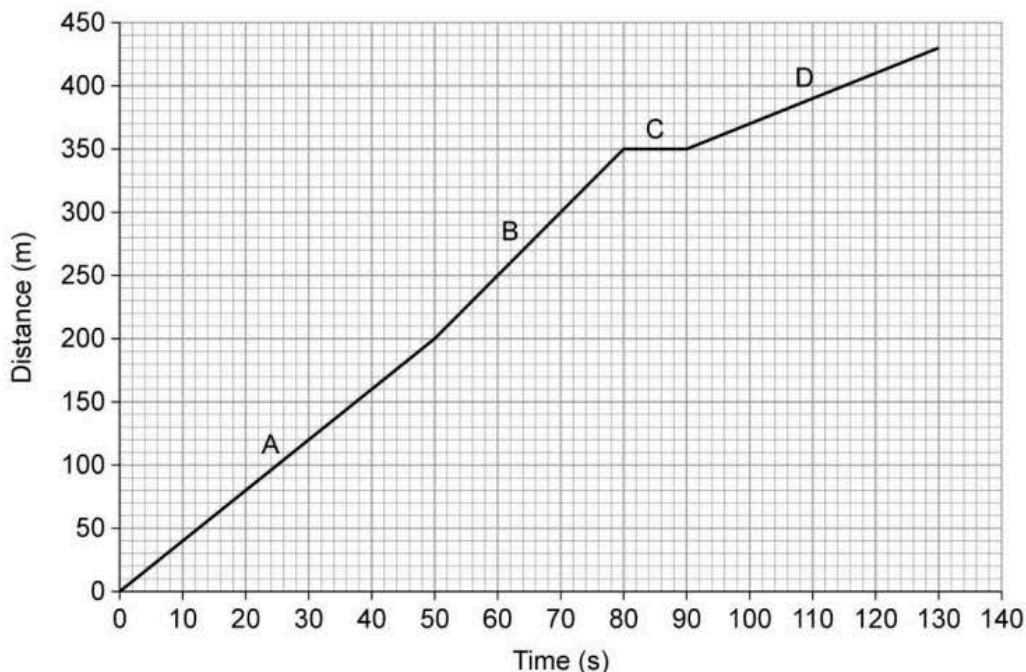


Weights are added to the pulley to increase the force.

Masses are added to the trolley to increase the mass.

Name _____ Class _____ Date _____

This is a **distance/time graph** for a cyclist travelling along a road.



This triangle can help you rearrange the equation for speed. Cover up the quantity you want to calculate, then write what you can see on the right of your = sign.

Remember, x represents distance.

- 1 a Which section of the graph shows where the cyclist waited at a junction? _____
 b For how long did the cyclist wait? _____
- 2 a Which section of the graph shows where the cyclist was travelling the fastest? _____
 b How can you tell from the graph that the speed was fastest here? _____
- 3 a How far did the cyclist travel in the first 50 s? _____
 b Calculate the speed in the first 50 s.

speed = _____ m/s

- 4 Part of the journey was uphill. Explain which part of the graph is likely to show this part of the journey.

- 5 A cheetah can run for a short time at 31 m/s (70 mph). How far can it travel in 19 s?

distance = _____ m

- 6 A tortoise can crawl at a top speed of 0.2 m/s. How long will it take the tortoise to travel 15 m?

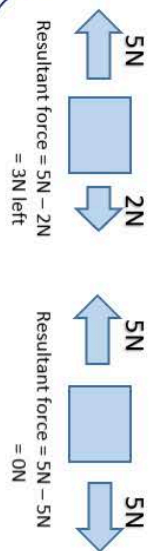
time = _____ s

1. Resultant Forces

Free body diagrams are drawn to represent the forces acting on an object. The length of the arrow represents the size of the force. The resultant force is the overall effect of all the forces acting on an object.

To calculate resultant force:

- Add forces acting in the same direction
- Subtract forces acting in opposite directions



4. Newton's second law

"Acceleration depends on the size of the force and the mass of an object."

The force needed to accelerate a particular object can be calculated using the equation:

$$\text{Force} = \text{mass} \times \text{acceleration}$$

$$(N) \quad (kg) \quad (m/s^2)$$



A motorcycle has a mass of 200kg.
What force is needed to give it an acceleration of $7m/s^2$?
 $200 \text{ kg} \times 7m/s^2 = 1400N$

CP2 FORCES & MOTION



7. Stopping Distances

In order to stop a moving vehicle, the driver has to think about stopping before they press the brakes to actually stop the vehicle.

$$\text{Stopping distance} = \text{thinking distance} + \text{braking distance}$$

$$(m) \quad (m) \quad (m)$$

A driver's reaction time will affect the distance travelled whilst thinking. Some factors that affect the braking distance reaction time include:

- Tiredness
- Drugs
- Alcohol
- Distractions
- Mass
- Road conditions
- Tyre conditions
- Brake conditions



8. Crash Hazards

In a car crash, the vehicles come to a stop very quickly in a short amount of time.

Slowing down is deceleration (negative acceleration).

Large decelerations can cause injury and unfortunately in some instances, death!

Modern cars have several safety features to reduce the size of the force on the driver and passengers.

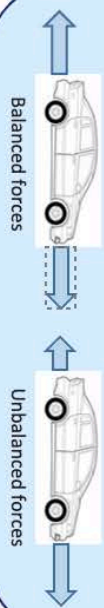
1. Crumple zones
2. Seat belts
3. Air bags



2. Newton's first law

"A moving object will continue to move at the same speed and direction unless an external force acts on it."
"A stationary object will remain at rest unless an external force acts on it."

If the resultant force is 0N = balanced forces
If the resultant force is not 0N = unbalanced forces
Unbalanced forces change the speed and/or direction of an object.



3. Mass and Weight

Mass is the quantity of matter there is in an object.
Mass is measured in kilograms (kg).



Weight is a measure of the pull of gravity on an object. This depends on the size of gravity.
Weight is a force so is measured in Newtons.

Weight can be calculated by multiplying the mass by the gravitational field strength.

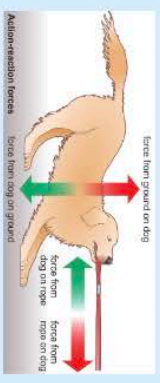
$$\text{Weight (N)} = \text{mass (kg)} \times \text{gravitational field strength (N/kg)}$$

What is the weight of a 90kg astronaut on the surface of Earth.
 $90kg \times 10N/kg = 900 \text{ N}$

5. Newton's third law

"balanced forces act on the same object. Action-reaction forces act on 2 different objects."

Action reaction forces are always the same size and in opposite directions. They are also the same type of force (push or pull).



The rope pulls the dog to the right and the dog pulls the rope to the left.

6. Momentum (H)

Momentum is a measure of the tendency of an object to keep moving – or how hard it is to stop it moving.

The momentum of an object depends on its mass and its velocity.

Momentum is calculated using the following equation:

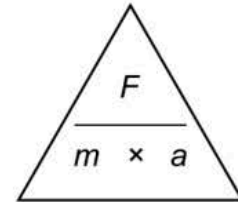
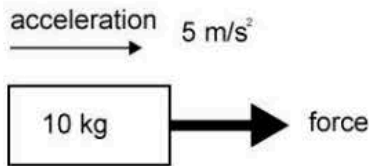
$$\text{Momentum} = \text{mass} \times \text{velocity}$$

$$(kg \text{ m/s}) \quad (kg) \quad (m/s)$$

When moving objects collide, the total momentum of both objects is the same before the collision as it is after the collision. This is called conservation of momentum.

Name _____ Class _____ Date _____

1 What are the resultant forces acting on these objects?



- a An object of mass 10 kg accelerating at 5 m/s^2 .
_____ N
- b mass 15 kg, acceleration 5 m/s^2 _____ N
- c mass 20 kg, acceleration 8 m/s^2 _____ N
- d mass 16 kg, acceleration 10 m/s^2 _____ N

2 Complete these sentences using the words 'greater' or 'smaller'.

- a For objects of the same mass, a larger resultant force will give a _____ acceleration.
- b For the same resultant force, the more massive the object, the _____ the acceleration.

3 For each of the following diagrams:

- calculate the resultant force
- give the direction of the resultant force
- calculate the acceleration of the object.

<p>a</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>	<p>b</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>	<p>c</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>
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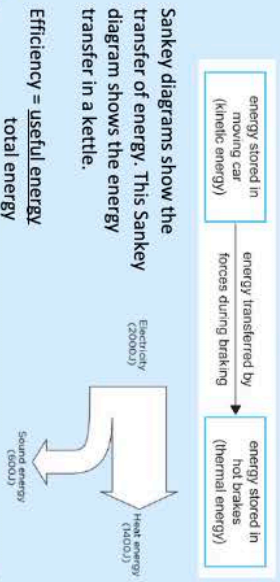
<p>d</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>	<p>e</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>	<p>f</p> <p>resultant force _____ N direction _____ acceleration _____ m/s^2</p>
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1. Energy stores
Energy is needed to make things happen or change. It is scalar quantity measured in Joules (J).

1. Chemical (food, fuel and batteries)
2. Kinetic (moving objects)
3. Thermal (hot objects)
4. Elastic potential (stretched, squashed or twisted objects)
5. Gravitational potential (objects in high positions)
6. Nuclear (inside atoms)



2. Energy efficiency
The law of conservation of energy states that energy cannot be created or destroyed. Sometimes energy is transferred to less useful stores such as the thermal energy. This energy is **dissipated**.



3. Conduction
Energy can be transferred by conduction.

Conduction involves the transfer of energy in solids between neighbouring particles.

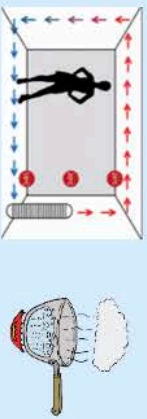


Metals are good thermal conductors and are said to have high thermal conductivity.

Wood and plastic are poor thermal conductors. These are examples of thermal insulators which have a low thermal conductivity.

4. Convection
Energy can be transferred by convection.

As particles in the liquid or gas state gain energy, they become less dense and start to rise. This generates convection currents and explains why an entire room heats up despite only having one radiator on one wall.



CP3 CONSERVATION OF ENERGY

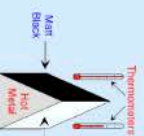


5. Radiation
Energy can be transferred by radiation.

Infrared and ultraviolet radiation from the Sun travel through a vacuum (an area with no particles) before reaching Earth's atmosphere.



Infrared radiation can travel through gases and some solid materials. Infrared radiation is absorbed and emitted easily by dull, dark surfaces but absorbed and emitted poorly by light, shiny surfaces.



6. Stored Energies

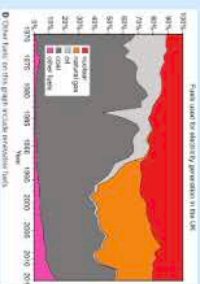
Objects stored at a height have the potential to fall. This is known as gravitational potential energy (GPE). This potential energy is then transferred to kinetic energy if the object falls towards Earth due to the force of gravity. If no energy is wasted $GPE = KE$.

$$\begin{aligned} \text{Change in gravitational energy (J)} &= \text{Mass (kg)} \times \text{Gravitational field strength (N/kg)} \times \text{Change in vertical height (m)} \\ \text{Kinetic energy (J)} &= \frac{1}{2} \times \text{Mass (kg)} \times \text{velocity}^2 \end{aligned}$$

7. Non-renewable Energy Sources

Non-renewable resources are those that generate electrical energy which are finite. This means they will run out one day. They include fossil fuels (coal, oil and natural gas) as well as nuclear fuel (uranium).

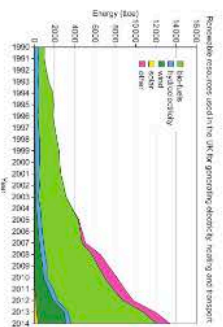
Fossil fuels release carbon dioxide and other greenhouse gases which contribute to climate change. As coal is the most damaging its use has been reduced in recent years.



8. Renewable Energy Sources

Renewable resources are those that generate electrical energy that will not run out. They are generally better for the environment as they produce less greenhouse gases. However, renewable sources can have an environmental cost to install them.

They include biofuels, hydroelectricity, wind and solar. The use of these have increased in recent years.



Name _____ Class _____ Date _____

1 Which equation is the correct equation for calculating the **efficiency** of a machine? Tick one box.

$$\text{efficiency} = \begin{matrix} \square & \frac{\text{total energy transferred}}{\text{useful energy transferred}} & \square & \frac{\text{wasted energy transferred}}{\text{useful energy transferred}} & \square & \frac{\text{useful energy transferred}}{\text{total energy transferred}} \end{matrix}$$

2 Some of these statements are true and some are false. Tick the boxes to show which ones are which.

True False

- a An old-style light bulb uses 60 J of energy to transfer 6 J of useful energy by heating. True False
- b The efficiency of an old-style light bulb is usually around 0.05 to 0.1. True False
- c A low energy bulb uses 15 J of energy to give 6 J of useful energy transferred by light and only wastes 9 J of energy by heating. True False
- d The efficiency of the low energy bulb = $\frac{6}{9} = 0.67$ True False
- e An efficient appliance wastes more energy than an inefficient one. True False
- f You always get the same amount of energy out of a machine as you put into it. True False

3 For each statement that you have ticked as false, explain why it is wrong.

Statement ___ is wrong because _____

Statement ___ is wrong because _____

Statement ___ is wrong because _____

4 In which way is most wasted energy transferred? Tick one box.

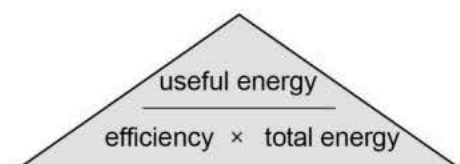
- by light by heating by sound by forces

5 Complete these sentences using words in the box. You can use each word once, more than once or not at all.

There is _____ between the moving parts of machines. Friction causes the _____ of the machine to rise so energy is being wasted by _____. This _____ energy is stored in the machine or the surroundings as _____ energy.

The amount of _____ between moving parts can be reduced by _____ the machine.

by heating	by light	friction	kinetic	lubricating	temperature	thermal	useful	wasted
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1. Waves

Waves transfer energy from one place to another. They do not transfer particles or matter.

Wave frequency is the number of waves passing a point each second. It is measured in hertz (Hz). A frequency of 1 hertz means 1 wave passing per second. For sound, the wave frequency determines the pitch (how high or low it sounds) and for light the frequency determines the colour.

The period is the length of time it takes one wave to pass a given point. The wavelength of a wave is the distance from a point on one wave to a point in the same position on the next wave, measured in metres.

The amplitude of a wave is the maximum distance of a point on the wave away from its rest position, measured in metres. The greater the amplitude of a sound wave, the louder the sound.

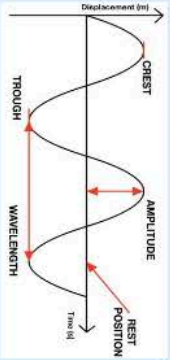
The velocity of a wave is the speed of the wave in the direction it is travelling. Waves travel at different speeds in different materials.

2. Transverse waves

In transverse waves, the vibrations are at right angles to the direction of energy transfer.

Examples of transverse waves include:

- ripples on the surface of water
- vibrations in a guitar string
- electromagnetic waves - eg light waves, microwaves, radio waves
- seismic (Earthquake) S-waves



4. Calculating wave speed

Worked example W1

A surfer travels 52 m on the front of a wave in 8s. Calculate the wave speed.

$$\text{wave speed} = \frac{\text{distance}}{\text{time}}$$

$$= \frac{52 \text{ m}}{8 \text{ s}}$$

$$= 6.5 \text{ m/s}$$

The speed of a wave can be calculated from the distance it travels in a certain time. This is the same equation we use for calculating the speed of moving objects.

$$\text{speed (m/s)} = \frac{\text{distance (m)}}{\text{time (s)}}$$

CP3 Waves



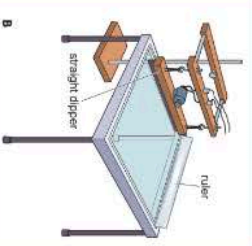
6. Measuring the speed of waves

You can find the speed of sound by measuring the time it takes for a sound to travel a certain distance. For example, if you stand in front of a large wall you can measure the time it takes for an echo of a loud sound to reach you. The speed can be calculated using the speed, time, distance equation.

One way of measuring the speed of waves on water is to measure the time it takes for a wave to travel between two fixed points such as buoys. The speed can be calculated from the time and the distance between the points.



7. Investigating waves



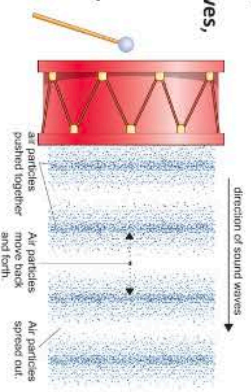
- Method**
- Set up a ripple tank with a straight dipper near one side of the tank. Turn on the motor and observe the waves. Measure the wavelength of the waves. Note the speed of the motor.
 - Turn the motor on to a higher speed so you can see to mark the water level.
 - Allow the current to the motor until you get waves with a wavelength about half as long as the ripple tank. (so you can always see two waves).
 - Count how many waves are formed in 10 seconds and write it down.
 - Look at the waves against the ruler. Use the markings on the ruler to estimate the wavelength of the waves. Use the wavelength and frequency to calculate the speed of the waves.
 - Mark two points on the same edge of the ripple tank as the ruler. Measure the distance between your points. Use the stopwatch to find out how long it takes a wave to go from one mark to the other. Use this information to calculate the speed of the waves.
- Measuring waves in solids**
- Staple a metal rod horizontally using clamp stands and rubber bands.
 - Hit one end of the rod with a hammer. Hold a stopwatch with a frequency app near the rod and note down the peak frequency.
 - Measure the length of the rod and write it down. The wavelength will be twice the length of the rod.
 - Use the frequency and wavelength to calculate the speed of sound in the rod.

3. Longitudinal waves

Sound waves also transfer energy. Sound waves are longitudinal waves. Particles in the material through which the wave is travelling move backwards and forwards as the wave passes.

In longitudinal waves,

the vibrations are parallel to the direction of energy transfer.



5. Calculating wave speed (again)

The wave speed is linked to the wave frequency and wavelength by this equation:

$$\text{wave speed (m/s)} = \text{frequency (Hz)} \times \text{wavelength (m)}$$

Some waves have a wavelength of 13 m and a frequency of 0.5 Hz.

Calculate their speed.

$$v = f \times \lambda$$

$$= 0.5 \text{ Hz} \times 13 \text{ m}$$

$$= 6.5 \text{ m/s}$$

8. Refraction

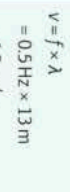
Most waves travel in straight lines. However, waves can change direction when they move into a different medium. The change in direction is called refraction. When a wave goes through a more dense material the wave slows down and therefore changes direction



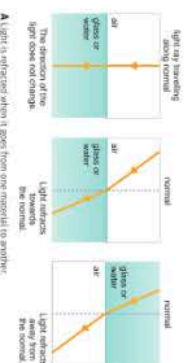
The direction of the light does not change.



The direction of the light does not change.



Light reflects away from the normal.



A light is refracted when it goes from one material to another.

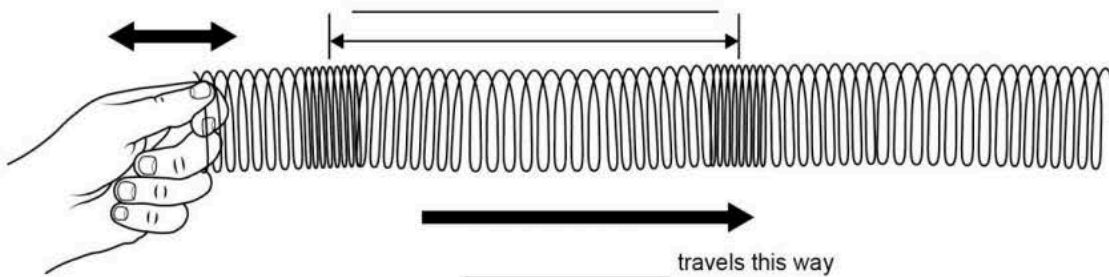
Name _____ Class _____ Date _____

1 The diagrams show a Slinky spring being used to model different kinds of wave.

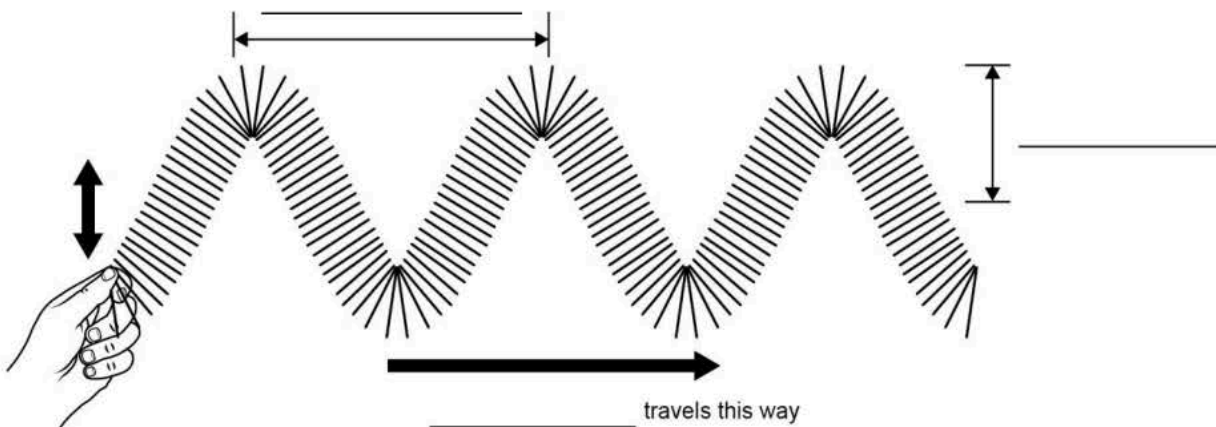
Label the diagrams using words from the box. You can use each word once, more than once, or not at all.

a _____ wave

amplitude	energy	frequency	longitudinal
particles	period	transverse	wavelength



b _____ wave



2 Give two examples of each type of wave.

a longitudinal (i) _____ (ii) _____

b transverse (i) _____ (ii) _____

3 The sentences below all contain mistakes. Make changes to correct the mistakes.

longitudinal and forwards

a In a ~~transverse~~ wave, the particles move backwards in the same direction as the wave is travelling.

b Waves transfer energy and matter.


c The amplitude of a transverse wave is the distance from the top to the bottom of the wave.

d The frequency of a wave is the time it takes for one complete wave to go past.

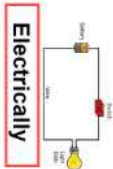
e The period of a wave is measured in hertz.

1. Waves

Waves are a transfer of energy. They do not transfer particles.




Mechanically




Electrically

Ways energy can be transferred



By heating



By light and sound

2. Light and sound waves

	Light waves	Sound waves
What type of wave are they?	Transverse (oscillate perpendicular to direction of energy transfer)	Longitudinal (oscillate parallel to direction of energy transfer)
Can they travel through matter (solids, liquids and gases)?	Yes (if transparent or translucent)	Yes
Can they travel through a vacuum?	Yes	No
How are they detected?	Eyes, cameras	Ears, microphones
Can they be reflected?	Yes	Yes
Can they be refracted?	Yes	Yes
What is the wave speed?	3.0×10^8 m/s 300,000,000 m/s	340 m/s in air

3. Refraction

When light changes passes from one medium to another, its speed and direction change. This is called **refraction**.

When light moves from a less dense medium, to a more dense, medium it slows down and changes direction **towards the normal**.

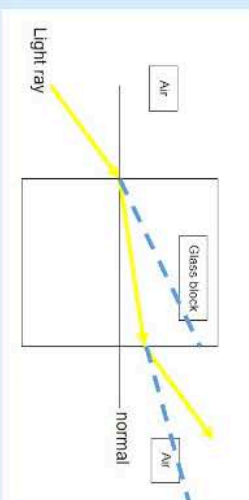
When light moves from a more dense medium, to a less dense medium it speeds up and changes direction away from the normal.

FASTER AWAY, SLOWER TOWARDS

Refraction shows that although light travels in straight lines, a change in the direction of travel can occur.



4. Ray diagrams

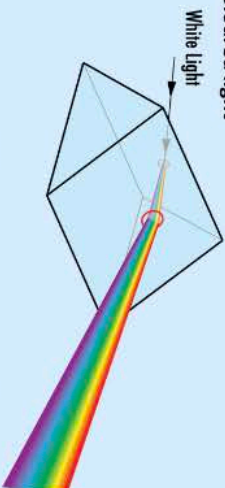


Yellow shows the pathway of light. **Blue** shows the direction the light would take if the density of the medium had NOT changed.

CPS EM spectrum

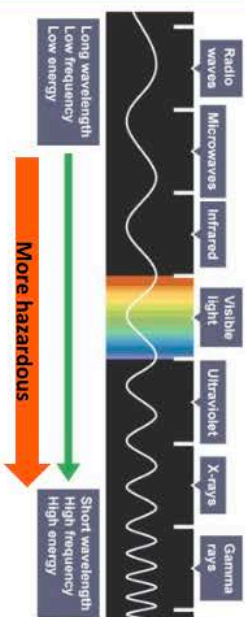


5. Coloured light



Light separates into different colours when shone through a prism because it is bent, or refracted, by the angles and plane faces of the prism, and each wavelength of light is refracted by a slightly different amount. Violet has the highest frequency and is refracted the most. Red has the lowest frequency and is refracted the least.

6. EM spectrum



Waves with a wavelength between 380nm and 730nm are known as visible light.

7. Uses of EM waves

Wave	Use
Radio	-Conductors, car radio and TV
Microwaves	-Heating food -Communication (WiFi, mobile phones, satellites)
Infrared	-Irradiates earth -Fibre optic communication -Night vision goggles (thermal and military) -Infrared saunas -Heating or cooling things -Nuclear sensors (for security alarm) -Electrical meters -Infrared cameras
Visible light	-Seeing and taking photographs/videos -Solar light communication
Ultraviolet	-Sun tanning beds (fluorescent) -Fluorescent lights (energy saving) -Drying surfaces
X-rays	-X-Ray medical imaging, airport security and military
Gamma Rays	-Sterilising medical instruments -Sterilising cancer

8. Dangers of EM waves

•As the frequency of electromagnetic (EM) waves increases, so does the energy.

•Beyond the visible part of the spectrum, the energy becomes large enough to ionise atoms.



Wave	Danger
Radio	- No known danger
Microwaves	- Possible heat damage to internal organs
Infrared	- Skin burns
Visible light	- Bright light can cause eye damage
Ultraviolet	- Eye damage - Sunburn - Skin cancer
X-rays	- Kills cells - Mutations - Cancer
Gamma Rays	- Kills cells - Mutations - Cancer

Key Events

1	9th November 1918 - The leader of Germany, Kaiser Wilhelm , abdicated. A democratic government set up, the Weimar Republic .
2	11th November 1918 - Germany signed armistice agreement.
3	28th June 1919 – The Treaty of Versailles is signed deciding the terms of peace between the Allies and Germany.
4	1923 – Germany was struggling to pay the reparations to France. They printed more money leading to hyperinflation . The USA provide a loan to help them recover.
5	November 1923 – The Munich Putsch – The NSDAP try to take over the Weimar Government, they fail and Hitler is sent to prison.
6	October 1929 – The Wall Street Crash , the American stock market collapsed and needed their loans back from Germany.
7	30th January 1933 – Hitler is named chancellor of Germany.
8	February 1933 – The Reichstag Fire was blamed a Dutch communist and used as propaganda , support gained for NSDAP.
9	23rd March 1933 - The Enabling Act was passed which meant Hitler was able to make laws without consulting the Reichstag.
10	30th June 1934 - The Night of the Long Knives - purge of SA leadership who threatened Hitler and other political opponents.
11	2nd August 1934 – President Hindenburg died . Hitler combines the role of chancellor and president and becomes Führer (leader).



History – Year 9 Knowledge Summary

What was life like in Nazi Germany?









Key Skills

12	Causation	Explaining how events are caused by developments that came before.
13	Consequence	The result or effect of an event.
14	Source Analysis	<p>Nature: What is the type of source?</p> <p>Content: What does it tell us?</p> <p>Origin: Who wrote it? When? Where?</p> <p>Purpose: Why was the source made?</p>







Key Terms

15	peace armistice	a document which is signed to halt fighting whilst peace negotiations take place.
16	November criminals	the name given to the men who signed the peace armistice.
17	abdication	Renouncing (giving up) the throne.
18	Treaty of Versailles	A treaty which formally ended WWI.
19	reparations	Germany was to made to pay £6.6 billion reparations for damage during the war.
20	NSDAP	National Socialist German Workers' Party – Was known as the Nazi Party.
21	Weimar Republic	The democratic government elected after the end of WWI.
22	chancellor	The head of the German government appointed by the president.
23	Reichstag	The name of Germany's parliament.
24	propaganda	Information, can be biased, that promotes a political cause/point of view.
25	Third Reich	The name of the Nazi regime (government).
26	Kinder, Küche and Kirche	'Children, Kitchen, Church.' Nazi's asked women to do these instead of work.

Key Groups/People

	Kaiser Wilhelm	Leader of Germany during WW1 until 1918.
	Adolf Hitler	German politician and leader of the Nazi Party.
	Joseph Goebbels	Nazi minister for propaganda 1933 -1945.
	President Hindenburg	President of Germany from 1925 – 1934.
	SA	Protectors of Nazi leaders formed in 1921.
	SS	Established 1925 to protect Hitler & then policed Third Reich.
	Gestapo	The Nazi's secret police force.
	Hitler Youth	The HJ, boys would join the main group from age 14.
	League of German Maidens	The female equivalent of the HJ they would join from age 14.

History – Year 9
 Knowledge
 Summary
 Were The 1960s a decade of 'revolution'?

<p>People mainly lived in houses, flats or bungalows which were similar to those today. Many homes had a television, telephone, beds, washing machines, fridges, baths and toilets. They often worked in different ways than today.</p> 	<p>Clothing began to be colourful with patterns. People started following trends. Women wore shorter, more casual dresses. Men wore flared trousers wide ties and shirts with wide collars.</p> 	<p>People owned fridges so food could be kept fresh for longer. Before this food was stored in a cool room called a larder. Shopping was done at lots of smaller shops rather than one supermarket.</p> 	<p>Healthcare was provided for free by the NHS, just like it is today. The NHS built many hospitals so that people could be treated locally.</p> 	<p>The number of families with cars increased a lot during the 60's. Motorways were built to allow people to travel between different parts of the country.</p> 	<p>The 1960's is often referred to as 'the swinging sixties' because music was so important. Music from the 60's has influenced music today. The Beatles were a popular band in the 60's.</p> 
Bungalow	A house with only one floor.				
Appliance	An item used for a specific task				
Similar	Characteristics which are the same.				
Different	Characteristics which are not the same.				
Fashion or Trend	A popular or new style of clothing or hair.				
Casual	Clothes suitable for everyday wear.				
Formal	Clothes suitable for special events, or a specific purpose.				
Preserve	Maintaining the freshness of food, so that it remains safe to eat.				
Healthcare	Giving medical care to people.				
Popularity	How many people like and use something.				

Year 9 Geography. Topic 4: Why should we care about the oceans?

Why are the oceans important?



Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs

Sustainable fishing means leaving enough fish in the ocean, respecting habitats and ensuring people who depend on fishing can maintain their livelihoods.

Overfishing and the impact

- Overfishing means to catch more fish than the natural system can replace.
- In 1900 our oceans contained six times more fish than today.
- In 2003, a scientific report estimated that industrial fishing had reduced the number of large ocean predators to just 10% of their preindustrial population.
- Millions of people rely on fisheries for employment. In 1993, the North Cod Fishery in Newfoundland, Canada collapsed because of overfishing. Approximately 40,000 jobs were lost. A billion people rely on fish as their main source of protein
- Habitats, such as coral reefs are destroyed by dredging of sea beds by large fishing nets.
- The UK catches 24% more fish stocks than scientific advisors recommend.
- Quotas (limits) in the EU mean that countries can only catch so many tonnes of fish.
- Overfishing means that fish stocks are not naturally being replaced.

What are ocean currents?

- The water in the oceans is constantly moving in patterns called currents.
- As the currents flow around the planet they move cold and warm water from one place to another.
- The ocean currents also help move anything that floats in them. This can be sea creatures or ships, but unfortunately can also be rubbish that has been dumped carelessly by people. This rubbish finds its way around the world, polluting the oceans and can be harmful to sea creatures

Gyre — Large circular current within the ocean

The Great Pacific Garbage Patch

- It is an accumulation of a large area of plastic and other polluting waste — three times the size of France
- 1.15 to 2.41 million tonnes of plastic enter the oceans each year
- Plastic doesn't sink, and it is transported vast distances before ending up in the garbage patch
- The plastics may eventually degrade to microplastics, due to the effects of the sun and waves, but these further damage marine life.

The Great Pacific Garbage Patch — solutions?

- Recycling, getting rid of single use plastics and using paper straws.
- Booms that collect plastic from the surface of oceans.
- Biodegradable bags.
- Getting rid of single use plastics.

The Northwest Passage

- The Northwest Passage is a sea route that connects the Atlantic and Pacific Oceans.
- In the past, the Northwest Passage has been virtually impassable because it was covered by thick, year-round sea ice. However, in recent years, climate change is allowing commercial traffic to pass through the Arctic via this once-impossible route.



Ocean acidification is a change in the properties of ocean water that can be harmful for plants and animals. Scientists have observed that the ocean is becoming more acidic as its water absorbs carbon dioxide from the atmosphere.

Biodiversity - the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable

What are the impacts of ocean acidification?

- A change in the pH of the ocean can cause fish to become ill, including slowing their growth
- The growth of coral reefs is limited and they may begin to erode
- Some species of algae grow better under more acidic conditions with the boost in carbon dioxide.
- Other algae, which build calcium carbonate skeletons and help cement coral reefs, do not fare so well. In acidifying conditions, coralline algae can cover up to 92% less area, making space for other types of non-calci-fying algae, which can smother and damage coral reefs.
- Oysters, mussels, urchins and starfish will have trouble forming their shells in acidic conditions, and they shells they do form may be weaker

War: When people disagree Knowledge Organiser



Justice	NEED TO KNOW WORDS A situation where people are treated fairly or correctly
Pacifism	The belief that no violence or war can ever be justified
Civilians	People who are not members of the armed forces or other military group
Jihad	To struggle to follow Allah, in some situations this may require the use of violence to prevent further suffering. (lesser Jihad)
War	Armed conflict between two countries or different groups
Just War	A war which is considered morally justified as it follows Thomas Aquinas' 7 rules of Just War.
Justified	When an action is considered good because of the reasons for it or outcome it might produce.

What are the causes of conflict? The causes of any war are complex. Wars are rarely about just one thing. They can be declared when a state or states act to:	<ul style="list-style-type: none"> • attack or invade another state, to gain territory or resources • resist such an attack or invasion by an aggressor • protect another state from attack by an aggressor • impose domination or political change on another state, or to resist such domination • challenge a threat to 'essential national interests' by another state • counter perceived threats from a different ideology, religion or ethnic group • defend the national honour when under threat <p>War can also occur internally within a state between organised groups. This is known as civil war.</p>
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Who or what are the casualties of conflict? Estimated number of military and civilian fatalities in major UK conflicts since World War Two	
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The main casualties of war include:	<ul style="list-style-type: none"> • servicemen and women who lose their lives or are injured • civilians who lose their lives or are injured • civilians who have their families, homes and way of life damaged or destroyed • damage to the country's infrastructure, eg roads and bridges destroyed • refugees who have to flee their country of birth to find safety
--------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Live by the sword, die by the sword Matthew 26	What does Christianity teach about war and peace? nation shall not lift up sword against nation, neither shall they learn war any more. Isaiah 2:4	Love your enemies and pray for those who persecute you. Matthew 5:44
And let him who has no sword sell his mantle and buy one. Luke 22:36		Defend the rights of the poor and orphans; be fair to the needy and helpless. Rescue them from the power of evil men. Psalm 82

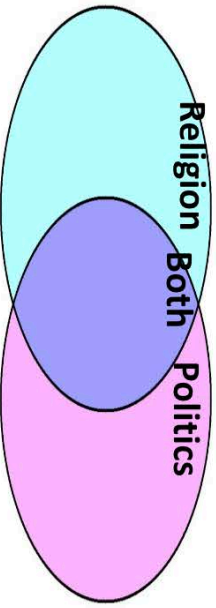
What are the two types of Jihad?		
Greater	Letter	
The struggle against oneself	Non-violent	Violent
Spiritual	The word of justice in front of the oppressive ruler	To defend, not attack
Against yourself	Verbal	Physical (military)
	Against the oppressive ruler	Against those who fight you



What happens when people disagree?

Key Word		Definition
Persecution		Cruel or unfair treatment, especially because of race or religious or political beliefs.
Schism		A tear or split. In religion it is when the religion splits into opposing groups.
Denomination or sect		A branch or group within a religion. For example, Sunni and Shia in Islam, or Catholic and Protestant in Christianity.
Islamophobia		The fear or hatred of, or prejudice against the religion of Islam or Muslims in general.
Homophobia		Dislike of or prejudice against gay people.
Holocaust		Also known as the Shoah, between 1941 and 1945, this was the genocide of European Jews during World War II.

What's the difference between religion and politics?



Religion = a system of faith and worship

Politics = the influence of governments or other groups that hold power.

Place these words on a venn diagram.			
Voting	Prayer	Crime and punishment	
Beliefs	Worship	Government	
God	leaders	Laws	

Jihad: The struggle of Muslims to make themselves and their society pleasing to Allah.

society: themselves, struggle

Greater jihad:
The personal, inward struggle of all Muslims to live in line with the teachings of their faith.

Lesser jihad:
The outward, collective struggle to defend their faith, family and country from threat.



MISSIONARY = SOMEONE SENT ON A RELIGIOUS MISSION TO PROMOTE CHRISTIANITY IN ANOTHER COUNTRY OR REGION

APOSTASY = GIVING UP YOUR FAITH

FUMIE = IMAGE OF CHRIST OR VIRGIN MARY (A 'STEPPING' PICTURE)

Whoever kills an innocent life it is as if he has killed all of humanity..

[tip] | Surah Al-Maidah: 5:32 | THE QUILL POINT

The Golden Rule

"Do unto others as you would have them do unto you"

Matthew 7:12

Shed not recklessly the blood of another with thy sword, lest the sword on high falls upon thy neck.

"WHAT IS HURTFUL TO YOURSELF DO NOT DO TO YOUR FELLOW MAN."
— TALMUD, SHABBAT 31A (JUDAISM)

HOW ARE PEOPLE PERSECUTED?

WOMEN OF ENGLAND PERSECUTION

'The witch Hunts'

Who? Women in the British Isles

When? The witch hunts lasted from 1645, just after the Battle of Naseby, to 1647.

Where? East Anglia in England

By whom? By the Christian authorities & a man called Matthew Hopkins 'The Witch-Finder General'

What happened?

People, especially women, who were different in any way, through age, or physical disability, or mental disability, were picked out by those who wanted to believe there was some specific reason why things had gone wrong in the community.

They were accused of being witches & were put on trial. If found guilty, they would be executed.



NATIVE AMERICAN PERSECUTION

Who? Native American tribes

When? 1831-1838

Where? Southern United States

By whom? American government

What happened?

This period of American history is known as 'The Trail of Tears'.

The United States government forced Native Americans to move from their homelands in the Southern United States to Indian Territory in Oklahoma. Peoples from the Cherokee, Muscogee, Chickasaw, Choctaw, and Seminole tribes were marched at gunpoint across hundreds of miles to reservations.



AZTECS PERSECUTION

Who? The Aztec Empire

When? February 1519 – August 13, 1521

Where? Aztec Empire (Modern day Mexico)

By whom? Spanish Conquistadores

What happened?

Between 1519 and 1521 the Spanish, under the leadership of conquistador Hernan Cortes, conquered the Aztec Empire.

Cortes arrived with around 500 men, 16 horses, and some cannon. They captured the Aztec king, Montezuma II, & killed him. Fighting began & a second Aztec king was killed. The Spanish conquistadores took the capital city Tenochtitlan (now Mexico City).



Changemakers: How does belief inspire change? Knowledge Organiser

NEED TO KNOW WORDS

Activism	The use of action to bring about change
Civil Rights	Political and social equality and freedom
Civil Disobedience	refusal to comply with certain laws
Democracy	A publicly elected government
Racism	To discriminate against people of a certain race
Equality	A state of being equal
Social Justice	Fair distribution of wealth and rights in a society
Prejudice	Prejudged opinions of a person or group.
Discrimination	Unfair treatment of a group

What is activism?

The word "activism" is only about 100 years old, at least in its current use, and derives from the verb to act. An activist is someone who is active in campaigning for change, normally on political or social issues. Activism is what activists do, that is, the methods they use in order to bring about change. Human rights activism is thus about reacting to injustice, to abusive treatment, to violence or discrimination, and trying to correct it.

Christian views on prejudice and discrimination

Christians believe that all humans are made in the image of God. Therefore any action that devalues a person is an insult to God who created and loves that person:

'Love your neighbour as yourself' - Matthew 22:39

Islamic views on prejudice and discrimination

Islam teaches that God created everyone as equal but different. As all are created by God, discrimination against any human is unjustified. The ummah crosses all gender, race and wealth boundaries:

"All human beings are equal like the teeth of a comb." - Hadith

Social Justice – Malcolm X

Malcolm X was an important leader who fought against racism and worked to empower Black people in the United States. He believed that Black people should have control over their own lives and communities, and he criticized the way that mainstream civil rights leaders were approaching the issue. He contributed to social justice by:

- Promoting Black independence and challenging the idea of white superiority.
- Advocating for Black economic and political power through initiatives such as Black nationalism and separatism.
- Highlighting the impact of systemic racism and institutional discrimination on the Black community.

Examples of Activism

Demonstrations and protests	During a demonstration or a protest, people united by a common belief meet together. They might march along a specific route, sit in at a specific place to draw attention to the cause, or hold a vigil to honour someone's life
Boycotts	to refuse to buy a product or take part in an activity as a way of expressing strong disapproval
Strikes	When workers deal with unfair or dangerous work conditions, low wages, or other issues, they might refuse to work when negotiations are refused or they fail.
Social media campaigns	Also known as "hashtag activism," it brings activism to social media networks like Instagram and Twitter. Users raise awareness of issues, organizations, and actions through posts, graphics, videos, and more.

Changemakers: How does belief inspire change? Knowledge Organiser

NEED TO KNOW WORDS	
<p>Conviction</p> <p>A firmly held belief or opinion</p>	<p>individuals or groups who are excluded from mainstream society</p>
<p>Marginalised</p>	<p>the historic civil rights march on Washington D.C. on August 28, 1963, where Martin Luther King Jr. delivered his famous "I Have a Dream" speech.</p>
<p>March on Washington</p>	<p>equal rights and protections of LGBTQIA+ individuals</p>
<p>LGBTQ+ rights</p>	<p>individuals</p>
Racism – Martin Luther King Jr	
<p>Martin Luther King Jr. was a famous civil rights leader who fought for racial equality and social justice in the United States during the mid-20th century.</p>	
<p>Influence of Beliefs:</p> <p>Christian beliefs strongly influenced his activism and his vision for social justice. He saw the struggle for civil rights as a moral issue, and he believed that all people were created equal in the eyes of God. He emphasised the importance of love and nonviolence in the struggle for justice, drawing on Jesus' teachings in the New Testament.</p>	<p>Contributions to change</p> <ul style="list-style-type: none"> • Advocating for nonviolent protests to challenge racial discrimination and segregation. • Leading the Montgomery Bus Boycott and the March on Washington, which brought national attention to the Civil Rights movement. • Promoting racial equality and the end of segregation through the Civil Rights Act of 1964 and the Voting Rights Act of 1965.

Education – Malala Yousafzai	
<p>Malala Yousafzai is a Pakistani education activist who has become a prominent voice for girls' education and women's rights.</p>	
<p>Influence of Beliefs:</p> <p>Malala Yousafzai is a Muslim, and her faith has played a significant role in inspiring her activism for girls' education and women's rights. She drew on the example of Prophet Muhammad, who taught that seeking knowledge was a duty for both men and women, to inspire her own advocacy for girls' education.</p>	<p>Contributions to change</p> <ul style="list-style-type: none"> • Advocating for girls' education in Pakistan. • Co-founding the Malala Fund to promote girls' education around the world • Speaking out on a variety of global issues, including refugees, climate change, and social justice.
LGBTQ+ – Marsha P Johnson	
<p>Marsha P. Johnson was a Black transgender woman and LGBTQ+ rights activist who fought for justice and equality for marginalized communities.</p>	
<p>Contributions to change</p> <ul style="list-style-type: none"> • Being a prominent figure in the Stonewall uprising of 1969, which is widely considered a turning point in the fight for LGBTQ+ rights • Co-founding the Street Transvestite Action Revolutionaries (STAR) which provided housing and support to homeless transgender youth. • Challenging traditional gender norms. • Promoting the idea that all people should be free to express their true selves. 	<p>Impact on religion:</p> <p>Marsha P. Johnson's legacy has inspired many religious communities to re-examine their traditional teachings on gender and sexuality. Some religious organizations have even begun to recognize and celebrate the lives of LGBTQ+ figures like Marsha P. Johnson as part of their own religious traditions, highlighting the intersections between faith and social justice.</p>

Changemakers: How does belief inspire change? Knowledge Organiser

NEED TO KNOW WORDS	
Speciesism	The belief that one species, typically humans, is superior to and has the right to dominate over other species
Climate change	Refers to the long-term changes in the Earth's climate primarily due to human activities such as burning fossil fuels and deforestation.
Ummah	the global community of Muslims

Speciesism – Peter Singer	
Peter Singer is a philosopher and ethicist who is known for his work in animal rights	
Contributions to change	Significance
<ul style="list-style-type: none"> Criticizing the use of speciesism, or the belief that humans are superior to other animals, as a justification for the exploitation and mistreatment of non-human animals. 	Peter Singer's secular humanist worldview has led him to be a strong advocate for the rights and well-being of all beings, and has inspired many people to re-examine their own ethical beliefs and values.

Climate – Extinction Rebellion	
a global environmental movement that aims to raise awareness about the climate crisis and the urgent need for action to prevent further damage to the planet.	
Aims:	Activism:
To pressure governments and other institutions to take immediate action to address the climate crisis, including reducing carbon emissions, transitioning to renewable energy, and protecting biodiversity. XR also advocates for systemic change that would move away from a fossil fuel-based economy and toward a sustainable and just society.	The methods used by XR include nonviolent civil disobedience, such as blocking roads and disrupting public spaces, as well as other forms of protest and direct action. The movement believes that such tactics are necessary to draw attention to the urgency of the climate crisis and to pressure those in power to take action.

Islamic views on Activism	
In Islam, the concept of social justice is central, and Muslims believe that they have a responsibility to work for the betterment of society and to alleviate the suffering of those in need. This can take many forms, including political activism, social welfare work, and community service.	
Muslims also believe in the importance of prayer and worship as a way to connect with God and to seek guidance and inspiration for their work. They see activism as a way to live out the principles of their faith and to embody the teachings of the Prophet Muhammad.	

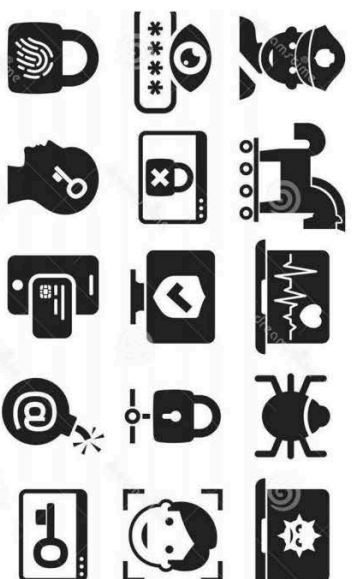
Christian views on Activism	
Many Christians believe that they are called to work for justice and to serve others, based on the teachings of Jesus Christ. They see activism as a way to live out their faith and to make a positive impact in the world. This can take many different forms, including political advocacy, social justice work, and community service.	
At the same time, many Christians also believe in the importance of prayer, worship, and spiritual reflection as a way to sustain their activism and to remain connected to God's guidance and wisdom. They see activism as part of a larger spiritual journey, and they believe that their faith can provide strength and inspiration for their work.	

Knowledge Organiser: System Security Threats

System Security

System security is concerned with the protection of computer systems, computer networks and data. Its purpose is to:

- to protect computers and networks from cyberattacks
- to prevent unauthorised access to computers
- to protect computers against damage caused by malicious software
- to prevent data from being stolen
- to protect against the disruption of services running on the computer



Forms of Attack

Passive Attack – data is monitored e.g. wiretap

Active Attack - data is modified e.g. malware

Inside Attack– by someone within the organisation

Outside Attack – by an illegitimate, external user

System Security Threats

Brute-force Attack – when all possible password combinations are systematically tried, with the hope of getting it right.

Denial-of-Service Attack (Dos) - when a network resource becomes deliberately overloaded ('flooded') with unnecessary requests, preventing it from responding normally.

Distributed-Denial-of-Service Attack (DDos) – when the requests come from many sources so you cannot just block a single IP address.

Structure Query Language (SQL) Injection – when a website is linked to a database and allows a user to enter information, it makes it possible for malicious code to be entered into a website form, in order to modify the SQL statement being executed. This will result in unauthorised access to the SQL database and the hacker will be able to modify, delete or add data.

Malware is software that has been purposely developed to damage, disrupt or take control of computer systems.

Social engineering techniques manipulate people into giving away confidential and personal information.

Types of Malware

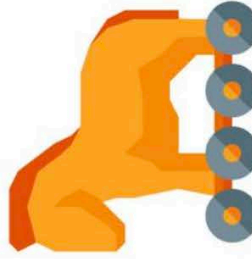
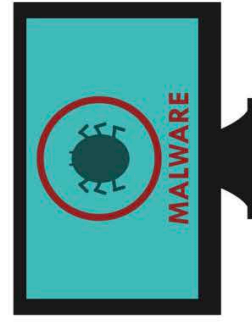
Computer viruses – insert themselves in normal programs. Viruses can replicate themselves and transfer from one computer to another. They are activated by a user often as email attachments and attachment to other files and programs.

Trojan gains access to a computer by pretending to be legitimate software. The trojan allows unauthorised backdoor access to a computer without the user being aware.

Spyware records the activity on your computer such as your keystrokes, thereby logging your passwords for instance and then sending the data back over the network to the attack instigator. Spyware can also be used to control your webcam and microphone.

Adware includes banners and popups that are automatically installed onto a computer. Whilst this does not cause any damage, adware is undesirable and can slow down the performance of a computer.

Worms spread like viruses but do not require human intervention. They attach themselves to network tools to spread automatically around a network very quickly.



Who are the “bad guys”?



45%
Outsiders



31.5%
Malicious
insiders



23.5%
Inadvertent
Actor

Types of Social Engineering

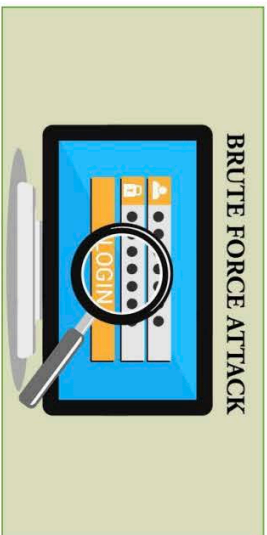
Blagging (Pretexting) Fraudsters make up a scenario to con victims into revealing something they would not ordinarily do. They may have found out some personal information about you from social media sites, to pretend they already know you.

Phishing Normally an email or text messaging scam where victims are conned into believing that they are being contacted by an authentic organisation (e.g. by their bank) and can give sensitive personal details (such as bank account passwords).

Pharming Users are redirected to a fraudulent website that they believe to be genuine because it looks like the real site. For instance, you could be directed to a site that pretends to be an online store which asks you for your credit card information.

Shoulder surfing Fraudsters look over the shoulder of users to see what passwords or PIN numbers are being typed into the device. This can easily occur at computer terminals and at ATMs that are out in the street.

Knowledge Organiser: Detection and Prevention of System Security Threats



Brute Force Attack

Brute-force Attack can be prevented by:

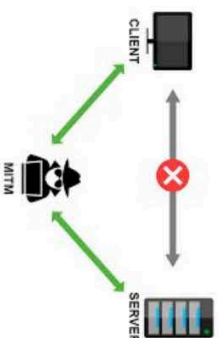
- ✓ Using strong passwords
- ✓ Locking accounts after a certain number of login attempts
- ✓ Using 2 step verification (e.g. a code sent to mobile phone to confirm identity)



Passive Attacks (Data Interception)

Passive attacks can be detected and prevented by:

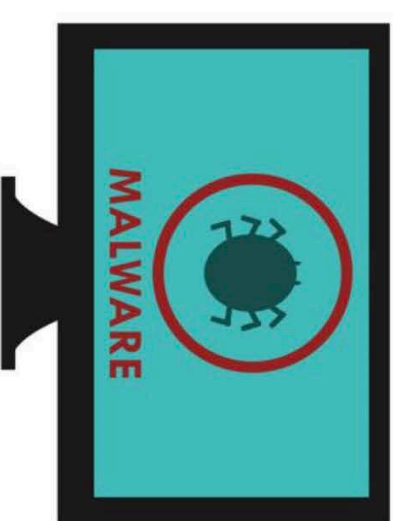
- ✓ Using **encryption**
- ✓ Using **network forensics**
- ✓ Using **penetration testing**



Denial-of-Service Attack (Dos & DDoS)

Denial-of-Service Attack (Dos) and **Distributed Denial-of-Service Attack (DDoS)** - can be prevented by:

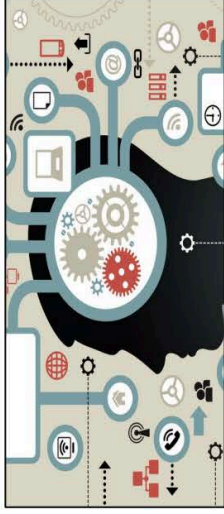
- ✓ Using a **firewall** to control which programs can send and receive data packets, so that only authorised users & trusted programs can access the network.



Malware

Malware can be detected and prevented by:

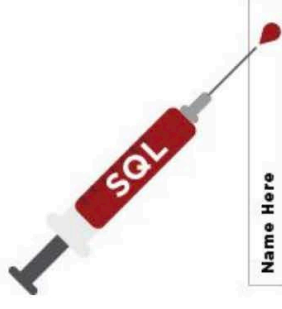
- ✓ Running **anti-malware software** regularly
- ✓ NOT downloading software from unknown sources
- ✓ NOT clicking on unknown links
- ✓ Scanning downloaded files before opening them
- ✓ NOT using removable media (e.g. a USB drive) as they may contain malware
- ✓ Using **automatic software updates**: up-to-date software will include patches for known vulnerabilities and up-to-date anti-malware uses the most current database of threats



Social Engineering Threats

Social engineering threats can be detected and prevented by:

- ✓ Creating **user access levels**
- ✓ Using an effective **network policy**
- ✓ Ensuring users have **strong passwords**
- ✓ Using **biometric identification measures**
- ✓ Installing **physical security** (e.g. locked rooms)
- ✓ Ensuring user privacy settings on any social media are set to maximum so that attackers cannot find information about users (e.g. date of birth, address)
- ✓ Ensuring **user awareness** of unsolicited texts, emails and phone calls. Users should not give personal, confidential information away
- ✓ Applying **email filtering** to prevent suspect emails getting through.
- ✓ Ensuring that users check the URL in the website address.
- ✓ Using a **website filter**
- ✓ Ensuring users are aware of who is around them when they are typing in their password.



Structured Query Language (SQL) Injection

Structure Query Language (SQL) Injection - can be detected and prevented by:

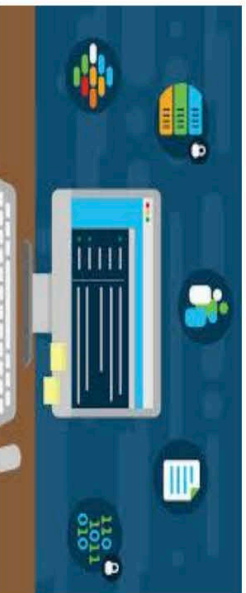
- ✓ Using **penetration testing** to check for vulnerabilities in the SQL code and report back
 - ✓ **Validating** user input so that the website form will not accept SQL statements or characters
 - ✓ **Escaping input strings** so that any SQL characters are ignored when processing the input from a website form
 - ✓ Using only **prepared statements** to restrict the SQL that can be executed.
- The input data from a website form can only be used by previously prepared SQL statements, which are processed separately to the input data





What is Network Forensics?

Network forensics is the capturing, recording and analysis of **network traffic** to discover attacks. This can be done using **packet sniffing software** and **web server logs** which show when data was accessed.



What is a Network Policy?

A **network policy** is a set of rules and procedures that an organisation will follow to ensure their network is protected against attacks. An effective network policy will **encrypt** sensitive data, have an **acceptable use policy**, install **ant-malware** and install a **firewall**. The policy will also enforce the use of **strong passwords** that are changed regularly and will enforce the regular testing of the network for weaknesses.

Key Terms Explained

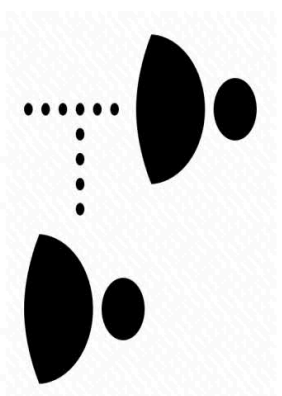


What is Penetration Testing?

Penetration testing is used to identify possible weaknesses in a network's security by trying to exploit them. The results are then reported back and any weaknesses are fixed.

A **white box** penetration test is used to simulate an **inside attack** where the attacker may have some knowledge of the system and basic credentials.

A **black box** penetration test is used to simulate an **outside attack** (i.e. hacker)



What is Encryption?

Encryption scrambles the data packets being sent and received across the network or outside the network so that unauthorised users cannot access personal information without the **encryption key**.

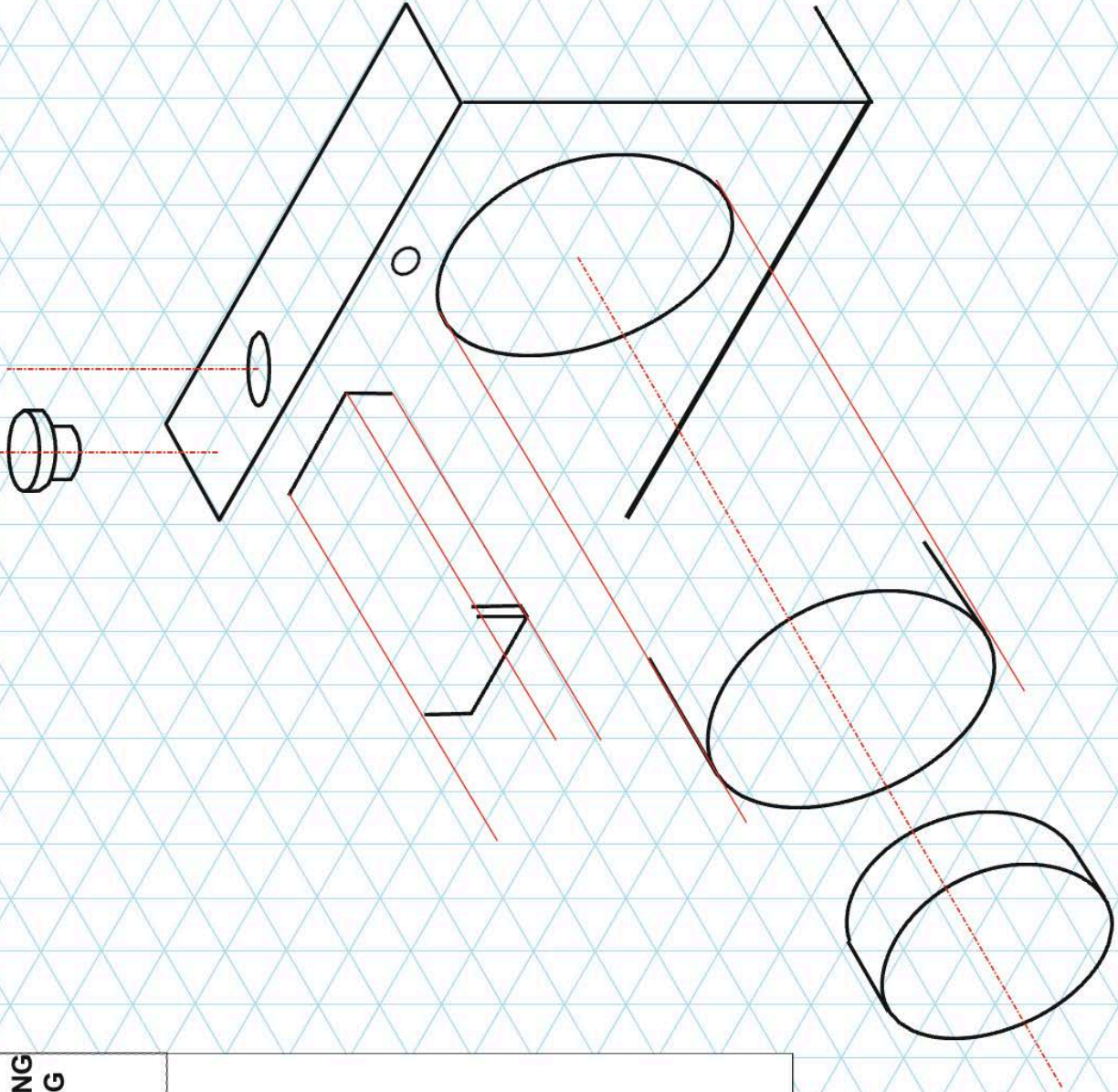
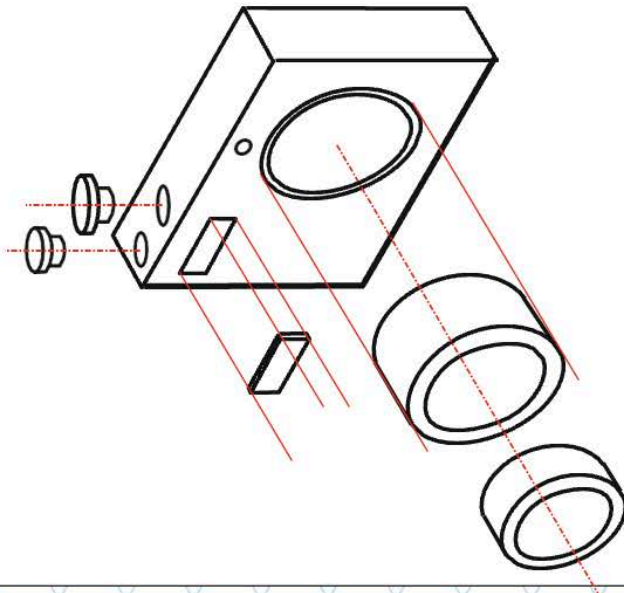


What are User Access Levels?

User access levels control which part of the network users can access. User access levels are used to limit the number of people with access to important data, helping to prevent **inside attacks** on the network.

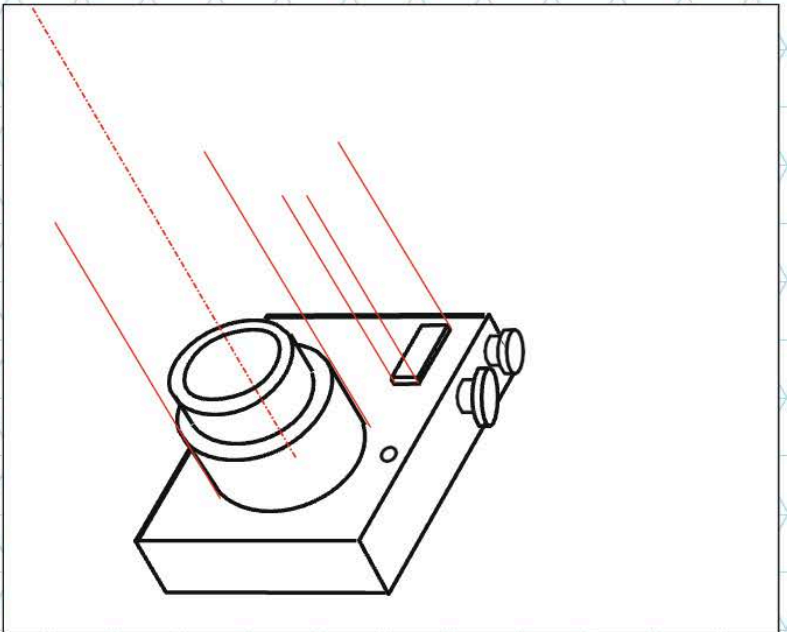
EXPLODED DRAWING USING ISOMETRIC PAPER

COMPLETE THE ISOMETRIC DRAWING OF A SIMPLE CAMERA, BY ADDING THE MISSING LINES / PARTS.
(Answer seen below)

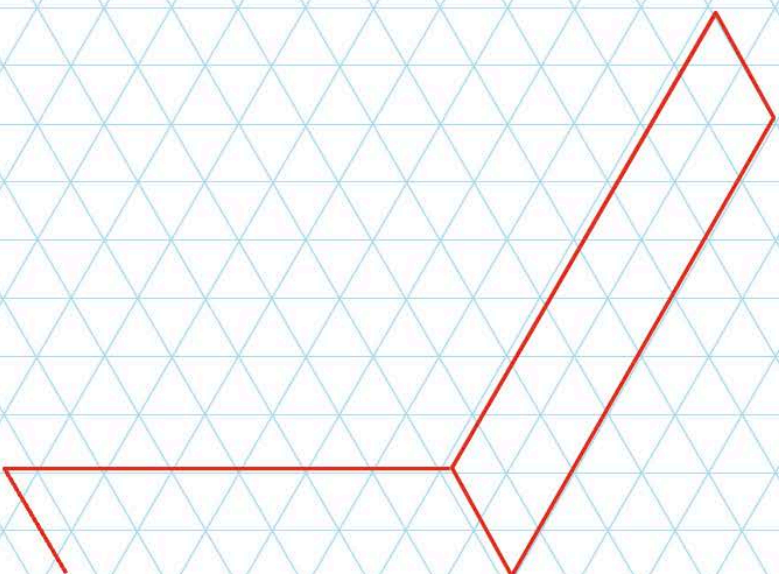


HELPFUL LINK





HELPFUL LINK



Eatwell Guide

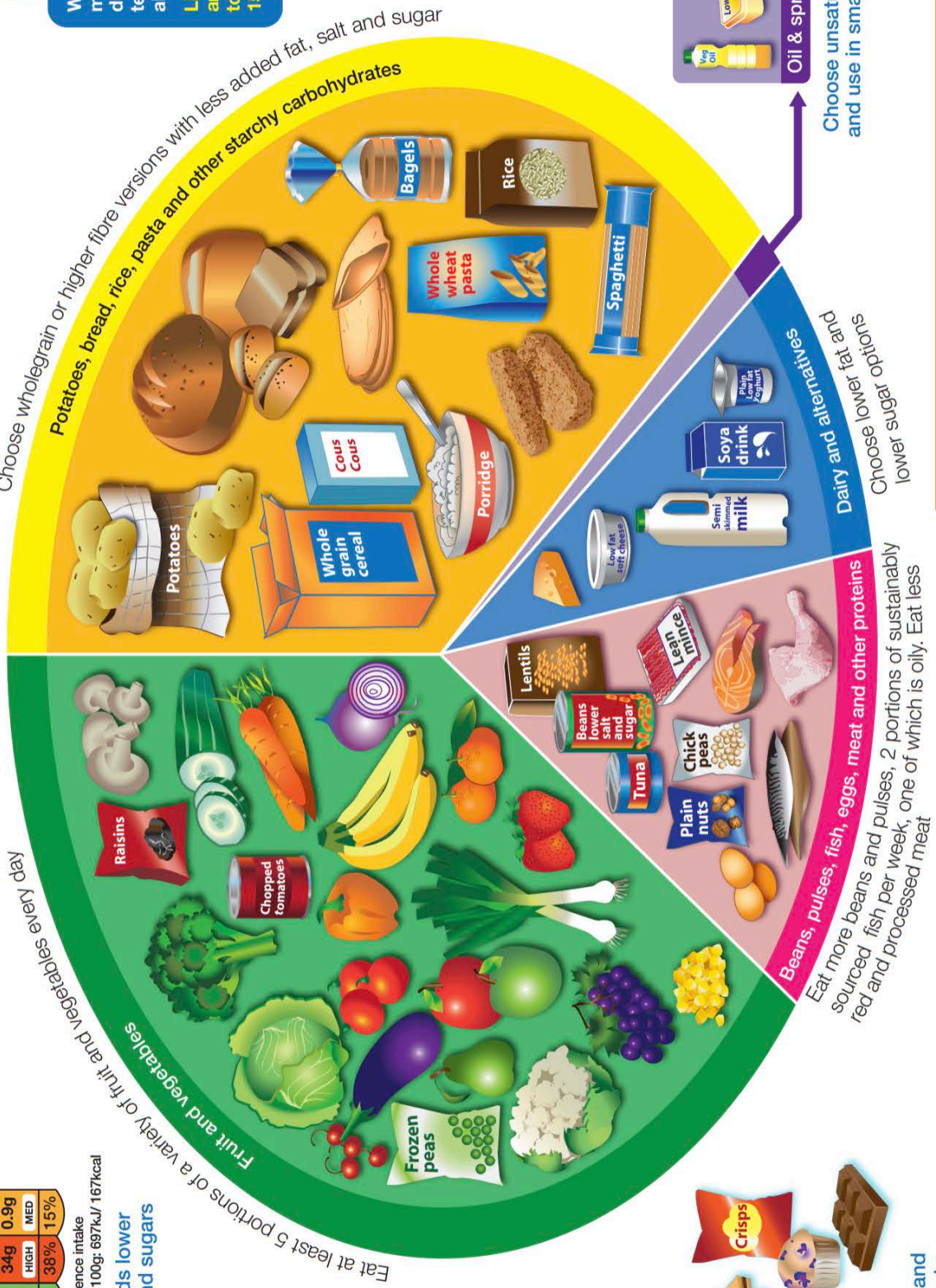
Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Energy	Saturated Fat	Sugars	Salt
1046kJ 250kcal	3.0g	34g	0.9g
13%	LOW	HIGH	MED
	4%	38%	15%

Each serving (150g) contains of an adult's reference intake Typical values (as sold) per 100g: 697kJ/167kcal

Choose foods lower in fat, salt and sugars



Water, lower fat milk, sugar-free drinks including tea and coffee all count. Limit fruit juice and/or smoothies to a total of 150ml a day.



Eat less often and in small amounts

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

9.11 My School Life – Vocabulary List



Quelle est ta matière préférée?	What is your favourite subject?
L'anglais	English
L'espagnol	Spanish
Le français / les langues	French / languages
Le théâtre	Drama
Le dessin	Art
Le sport (L'EPS)	P.E.
L'informatique	I.C.T. (Computer Studies)
La musique	Music
La technologie	D.T.
La géographie	Geography
L'histoire	History
La religion	R.S. (Religious Studies)
L'éducation civique	P.S.H.E (Health and Wellbeing)
Les mathématiques	Maths
Les sciences	Science

Qu'est-ce que tu en penses?	What do you think of it?
C'est/Ce n'est pas	It is/It is not
Intéressant (e)	Interesting
Pratique	Practical
Utile/inutile	Useful/not useful
Facile/Difficile	Easy/difficult
Ennuyeux (se) /barbant (e)	Boring
Passionnant (e)	Exciting
Créatif (ve)	Creative
Important (e)	Important
Trop	Too
Très	Very
Assez	Quite
Un peu	A bit (a little)
du tout	At all

Comment est ton uniforme scolaire?	What is your school uniform like?
Je porte	I wear
Il faut porter	You must wear
Une veste/ un blazer	A blazer/jacket
Un pull	A jumper
Une chemise	A shirt
Un t-shirt	A t-shirt
Une cravate	A tie
Une jupe	A skirt
Des chaussettes	Socks
Un pantalon	Trousers
Des chaussures	Shoes
Un collant	Tights
Un hijab	Hijab
Moche	Ugly
Beau/belle	Beautiful
(In)confortable	(un)comfortable
Cher	Expensive
Pas cher/bon marché	Not expensive/cheap
À la mode	Fashionable
Démodé(e)	Old-fashioned

Qu'est-ce que tu voudrais faire dans le futur?	What would you like to do in the future?
Je vais	I am going
Je voudrais/J'aimerais	I would like
Réussir mes examens	To pass my exams
Recevoir des bonnes notes	To get good results
Faire un apprentissage	To do an apprenticeship
Chercher du travail	To search for a job
Faire du bénévolat	To do voluntary work
Voyager autour du monde	To travel the world
Avoir des enfants	To have children
me marier	To marry
Apprendre à conduire	To learn to drive
Devenir	To become
Médecin/Vétérinaire	A doctor/a vet
Professeur/Avocat(e)	A teacher/a lawyer
Mécanicien(ne)/Plombier(ière)	A mechanic/a plumber
Pompier (ière)	A firefighter
Coiffeur(euse)	A hairdresser

La journée scolaire	The school day
Je quitte la maison	I leave the house
Je vais au collège	I go to school
Les cours commencent à	Lessons start at
Les cours terminent à	Lessons end at
Ça dure	It lasts
La récréation	Breaktime
L'heure du déjeuner	Lunchtime
Le matin	The morning
L'après-midi	The afternoon
Le soir	The evening
Un élève	A pupil

¿Quelle est ta fête préférée?



























What is your favourite festival

Ma fête préférée est...

My favourite festival is...

9.12 Festivals French Vocab List



¿Qu'est-ce qu'on fait pour célébrer?		What do we do to celebrate?	
	Le Noël	Christmas	Je me lève I get up
	La veille de Noël	Christmas Eve	Je me douche I shower
	La Saint-Sylvestre	New Year's Eve	Je m'habille I get dressed
	Le nouvel An	New Year's Day	Je reçois des cadeaux/du muguet I receive presents/lily of the valley
	Le Dipavali	Divali	J'éteins des bougies I blow candles out
	Pâques	Easter	Je décore l'arbre de Noël I decorate the Christmas tree
	Le Hanoukka	Hanoukka	J'achète des nouveaux vêtements I buy new clothes
	L'Aïd	Eid	Je vais à l'église I go to church
	Le premier avril	April Fool's day	Je vais à la mosquée I go to the mosque
	L'anniversaire	Birthday	Je vais à la place I go to the square
	Le premier mai	May day	Je vais à la maison de ... I go to ...'s house
	Un fête	Party	... arrive ... arrives
	La fête des Mères	Mother's day	Nous mangeons... We eat...
	La fête de la musique	Music festival	Nous jeûnons We fast
	Un jour férié	Bank Holiday	Nous jouons des jeux de société We play board games
	Le mariage/les noces	Marriage/wedding	Nous célébrons We celebrate
	Le 14 juillet	Bastille Day	Je m'amuse bien I have a good time
	La Saint-Valentin	Valentine's day	Je regarde des feux d'artifices I watch the fireworks
	Le Mardi Gras	Shrove Tuesday	Je vais au lit I go to bed
			Je me couche I go to sleep
			C'est comment? How is it like?
			passionnant Exciting
			inoubliable unforgettable
			amusant Fun
			insupportable Unbearable
			Un désastre A disaster

Les phrases/verbes du passé

Phrases/verbs in the past

L'année dernière

Last year

Le mois dernier

Last month

Avant hier

The day before yesterday

La semaine dernière

Last week

Hier

Yesterday

Dans le passé

In the past

Quand j'avais ... ans

When I was ... years old

L'été dernier

Last summer

L'hiver dernier

Last winter

Il y a ... (deux ans)

... ago (two years)

Le weekend dernier

Last weekend

Je suis allé(e)

I went

J'ai célébré

I celebrated

J'ai mangé

I ate

J'ai bu

I drank

J'ai ouvert

I opened

C'était

It was

Les phrases/verbes du futur

Phrases/verbs in the future

L'année prochaine

Next year

Le mois prochain

Next month

Après demain

The day after tomorrow

Demain

Tomorrow

La semaine prochaine

Next week

Dans le futur / à l'avenir

In the future

Quand j'aurai ... ans

When I will be ... years old

L'été prochain

Next summer

Je vais aller

I am going to go

Je vais célébrer

I am going to celebrate

J'ai l'intention de manger

I intend to eat

Je voudrais/j'aimerais boire

I would like to drink

9.11 My School Life – Vocabulary List







¿Cuál es tu asignatura favorita?		What is your favourite subject?	
El inglés	English	Es / no es interesante	It is/It is not interesting
El español	Spanish	Práctico	Practical
El francés	French	Útil / Inútil	Useful/not useful
El teatro	Drama	Fácil / Difícil	Easy/difficult
El dibujo	Art	Aburrido	Boring
El deporte	P.E.	Emocionante	Exciting
La informática	I.C.T. (Computer Studies)	Creativo	Creative
La música	Music	Importante	Important
La tecnología	D.T.	demasiado	Too
La geografía	Geography	muy	Very
La historia	History	bastante	Quite
La religión	R.S. (Religious Studies)	Un poco	A bit (a little)
La educación personal y social	P.S.H.E. (Health and Wellbeing)		
Las matemáticas	Maths		
Las ciencias	Science		
¿Cuáles son las reglas?		What are the rules?	
Se debe / no se debe	You must / You must not		
Se puede / no se puede	You can / You can not		
Hay que	You must		
Está prohibido	It is forbidden to		
Escuchar en clase	(to) listen in class		
Usar el móvil en clase	(to) use your phone in class		
Llevar joyas	(to) wear jewellery		
Llevar maquillaje	(to) wear make-up		
Llevar zapatillas de deporte	(to) wear trainers		
Dañar las instalaciones	(to) damage the facilities		
Ser puntual	(to) be on time		
Comer chicle	(to) chew chewing-gum		
Hacer los deberes	(to) do homework		
¿Qué quieres hacer en el futuro?		What do you want to do in the future?	
Voy a	I am going		
Me gustaría / Quiero	I would like / I want		
Aprobar mis exámenes	To pass my exams		
Sacar buenas notas	To get good results		
Hacer un aprendizaje	To do an apprenticeship		
Buscar trabajo	To search for a job		
Trabajar como voluntario	To do voluntary work		
Viajar por el mundo	To travel the world		
Tener hijos	To have children		
Casarme	To marry		
Aprender a conducir	To learn to drive		
Médico/a	Veterinario	A doctor/a vet	
Profesor(a)	Abogado/a	A teacher/a lawyer	
Mecánico	Fontanero	A mechanic/a plumber	
Bombero		A firefighter	
Peluquero		A hairdresser	
¿Qué llevas?		What do you wear?	
Llevo	I wear		
Se debe llevar	You must wear		
Una chaqueta	A blazer/jacket		
Un jersey	A jumper		
Una camiseta	A shirt		
Una corbata	A tie		
Una falda	A skirt		
Unos calcetines	Socks		
Unos pantalones	Trousers		
Unos zapatos	Shoes		
Unas medias	Tights		
Un hiyab	Hijab		
feo	Ugly		
bonito	Beautiful		
(In)cómodo	(un)comfortable		
caro	Expensive		
barato	cheap		
De moda	Fashionable		
Pasado de moda	Old-fashioned		
La jornada escolar		The school day	
Salgo de casa	I leave the house		
Voy al insti	I go to school		
Las clases empiezan...	Lessons start ...		
Las clases terminan...	Lessons end ...		
Dura	It lasts		
El recreo	Breaktime		
La hora de comer	Lunchtime		
Por la mañana	The morning		
Por la tarde	The afternoon		

¿Cuál es tu festival favorito?

What is your favourite festival?

Mi festival favorito es...

My favourite festival is...

	La Navidad	Christmas
	La Nochebuena	Christmas Eve
	La Nochevieja	New Year's Eve
	El día de año nuevo	New Year's Day
	El día de los Reyes Magos	Three Wise Men Day
	La Semana Santa	Easter / Holy Week
	Las hogueras	The bonfires
	La feria de abril	The April fair
	Día de muertos	The day of deaths
	El cumpleaños	Birthday
	El carnaval	Carnival
	La feria	Fair
	El día de la madre	Mother's day
	El día del padre	Father's day
	El día festivo	Bank Holiday
	El encierro	The bull running
	Las fallas	Fallas
	Els castells	Human towers
	La Tomatina	Tomato festival

9.12 Festivals Spanish Vocab List



¿Qué hacemos para celebrar?	What do we do to celebrate?
Me levanto	I get up
Me ducho	I shower
Me visto	I get dressed
Recibo regalos	I receive presents
Soplo velas	I blow candles
Monto el árbol de Navidad	I put up the Christmas tree
Compro ropa nueva	I buy new clothes
Voy a la iglesia	I go to church
Voy a la mezquita	I go to the mosque
Voy a la plaza	I go to the square
Voy a casa de...	I go to ...'s house
... llega	... arrives
Comemos...	We eat...
Ayunamos	We fast
Jugamos a juegos de mesa	We play table games
Celebramos	We celebrate
Lo paso muy bien	I have a good time
Me acuesto	I go to bed
Voy a dormir	I go to sleep
¿Cómo es?	How is it like?
Emocionante	Exciting
Conmovedor	Moving
Divertido	Fun
Insoponible	Unbearable
Impactante	Striking

¿Qué pasa en los encierros / las corridas de toros ?

San Fermín

A bull running festival held in Pamplona every July

Los toros

The bulls

Las calles

The streets

Correr

To run

Las corridas de toros

Bullfighting

Los encierros

Bull running

La plaza de toros

The bullring



¿Qué pasa en las Fallas?

Fallas

A festival held in Valencia every March

La hoguera

The bonfire

El cartón

Cardboard

Las fallas

Sculptures made of cardboard

Los fuegos artificiales

Fireworks

Los petardos

Firecrackers

Las bandas de música

Music bands



¿Qué pasa en la Tomatina?

What happens in the tomato festival?

La gente

People

Lanza tomates

Throw tomatoes

Aplasta tomates

Squish tomatoes

Se ensucia

Gets dirty

Tiene lugar en Buñol

Takes place in Buñol

La batalla

The battle

El caos

Chaos



CAREERS AT HPA

Our Careers guidance and provision at Hans Price offers a wide range of experiences and opportunities to inform and develop aspirations for the future. In addition to a careers featuring in our SPACE curriculum and weaving through all subjects taught at Hans Price, all students use UniFrog to support their careers provision and their planning for Post-16 and beyond.

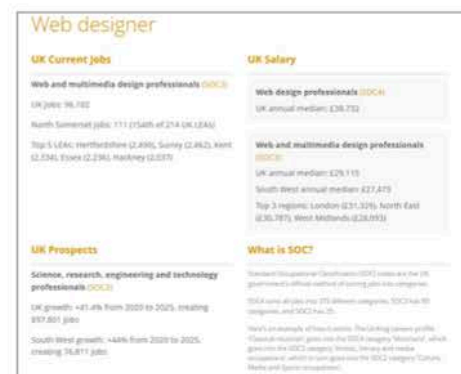


Unifrog is the universal destinations platform and is designed to support learners in making the most informed decisions about their futures. It has a range of tools that are suitable for all year groups. Each student has their own account where they can explore all the career and next step options available to them and find information on everything from managing their workload to writing a winning CV. Students have access to a wide variety of video and written content, and interactive quizzes and tests, information about careers and the local labour market and emerging industries.



Students can access Unifrog through the LCF Student Navigator page or searching for Unifrog online. Students initially sign up to the platform by clicking a link in their welcome email, where they create a password and can begin using the platform. They sign in to Unifrog using their Hans Price email address and password and they can do so from any computer, tablet, or smartphone. We would encourage you to use the platform with your child so you can support them through the process of deciding their next step.

You can also have your own Unifrog account. You'll be able to research careers, attend webinars delivered by employers and universities to learn more about their opportunities, and compare pathways so you can support your child in making an informed decision about their next steps. The sign up code you need is: **HPAMParents** and you can sign up here: www.unifrog.org/code. You can also sign up to Unifrog's parent/carer newsletter when you first sign



Upcoming Webinars
join live

Past Webinars
watch on demand

Top tips for writing the perfect CV

Part of Applications masterclasses [webinar series](#) >

Employers will use your CV to decide whether you're fit for the job, so you need to make sure it stands out from the crowd. In this webinar, professional services network, Crowe, hygiene and health company, Essity, and consultancy firm, Barnett Waddingham, give their insider tips on how to ace your CV or written application. Sign up today to join this live webinar!

Monday 27 November @ 16:30 UK time - 45 mins - [sign up](#) or [share](#)





Cabot Learning Federation

'The Elements of Music'

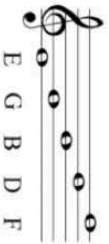
The Elements of Music

- **Tempo** (Speed)
- **Timbre** (Sound of the Instrument)
- **Pitch** (High or Low Notes)
- **Dynamics** (Loud or Soft)
- **Texture** (Layers of Music)
- **Duration** (Length of Notes)
- **Silence** (No Sound)
- **Structure** (Order of Sections)
- **Rhythm** (Long and Short Notes)

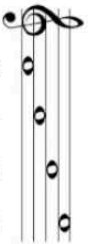


Reading Notation

Every Good Boy Deserves Football



E G B D F



F A C E

FACE

If it's on the line, use the rhyme.

If it's in the space, it spells face.



Symbol	Name	Length
	Minim	2 Beats
	Crotchet	1 Beat
	Quaver	1/2 Beat
	Pair of Quavers	2 x 1/2 Beat
	Rest	1 Beat

#ReadyToLearnHPA

Hans Price Academy



Instruments of the Orchestra

Brass



Strings



Woodwind



Percussion



PERFORMING ARTS OPPORTUNITIES



SCHOOL MUSICAL:

SCHOOL MUSICAL IS IN JULY - REHEARSALS ARE TUESDAY & WEDNESDAY AFTER SCHOOL READY FOR THE SHOW IN JULY.

DANCE SHOW:

YOU CAN AUDITION FOR THE DANCE SHOW IN APRIL. AUDITIONS ARE USUALLY 3 WEEKS BEFORE THE SHOW.

MUSIC SHOW:

YOU CAN AUDITION FOR THE MUSIC SHOW IN FEBRUARY. AUDITIONS ARE USUALLY 3 WEEKS BEFORE THE SHOW.

PLEASE SEE YOUR MUSIC TEACHER FOR A LIST OF UP TO DATE CLUBS.

DANCE CLUB:

DANCE CLUB WITH ANGELS DANCE ACADEMY IS EVERY FRIDAY LUNCH IN THE DANCE STUDIO.

