Year 9

Booklet 2

2024/2025

Independent Study

Name & LF:

Hans Price Academy

Cabot Learning Federation

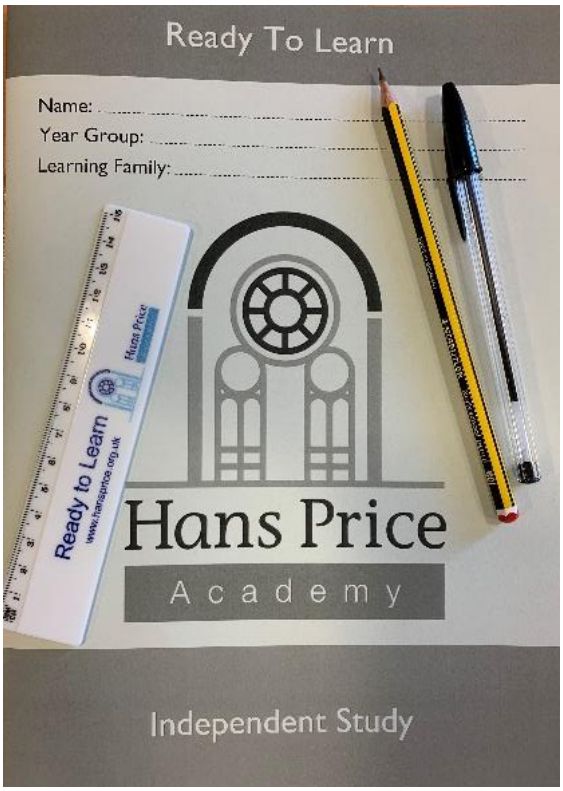
How to Complete Independent Study

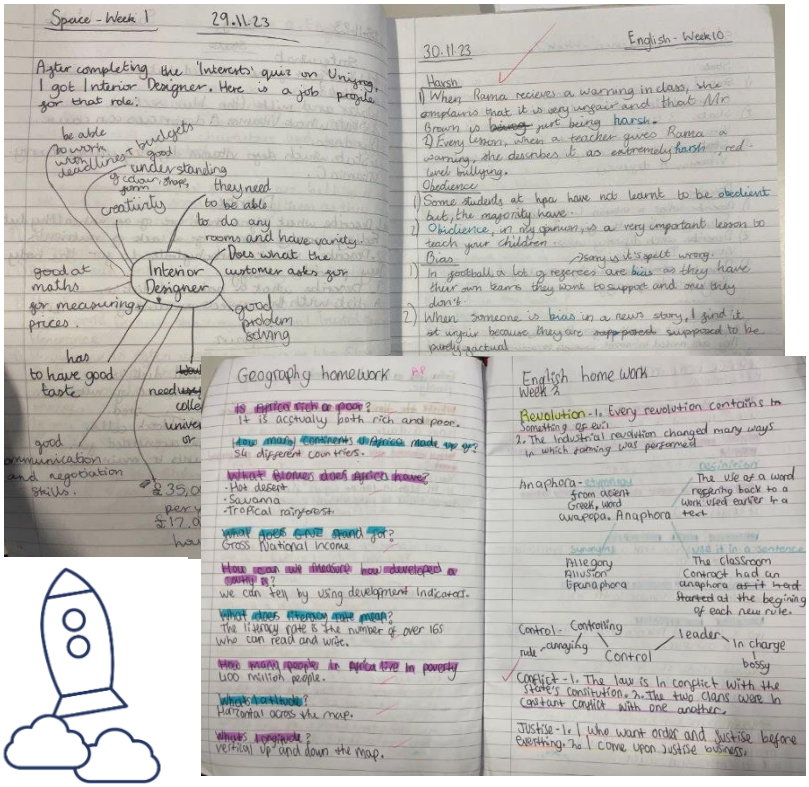
Completed IS is valued by teachers as it extends and supports the learning in lessons as well as embedding independent learning habits. It is rewarded with achievement points.

- Three pieces of IS are due each week. The schedule is included in this booklet.
- Independent study is introduced, supported and recorded by subject teachers. Further information is posted in Bromcom.
- 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.
- IS resources can be collected from the library. Electronic copies of the booklets are available online, on the HPA website, alongside a video explaining IS
- Compulsory IS Workshops on Tuesdays at 3pm for students who are not completing IS independently.

Students can access support and space to complete IS in school, every day.

- **Lunchtime - G7 - 12:45-13:10 (Mrs Tuck and Prefects)**
- **After School - LS3 - 15:00-15:50 (Teaching Assistants)**





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

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

Contents and Tasks

Subject	Pages	Task
Maths	6	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.
English	7-11	Write out your understanding of the definitions and create two different sentences showing your understanding of the word. 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 of your choice that includes the key words for the week.
Science	12-22	Complete the worksheet in the knowledge organiser booklet.**24-Feburary:** Acceleration calculations (CP2d.5), **31-March:** Car designs (CP2h.5), **21-April:** Stored energies (CP3d.5), **19-May:** Chromosomes and genes (CB3a.4), **2-June:** Human evolution (CB4a.4), **21-July:** Waves (CP4a.4)
Computing	23-29	Using the knowledge organiser, please answer the questions set in Bromcom
DT	30-33	**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. **For Food Tech**, use the eat well plate to construct 10 knowledge recall questions.
MFL	34-43	You will have been given an IS sheet by your teacher in lesson. You need to complete the sheet using your knowledge organiser. If you do not have the sheet, you need to see your teacher before your second lesson this week to get one.
Humanities	44-54	Complete the questions in your knowledge organiser. Use the knowledge organiser to help you.
Careers	55	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.
Art	56	Create an A4 presentation on a Graffiti 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.
Music, Drama & PE	57-58	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.

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		
24th Feb '25	English	
	Maths	
	Science	
3rd Mar '25	English	
	Maths	
	Humanities	
10th Mar '25	English	
	Maths	
	MFL	
17th Mar '25	English	
	Maths	
	DT	
24th Mar '25	English	
	Maths	
	Computing	
31st Mar '25	English	
	Maths	
	Science	
Term 5		
21st Apr '25	English	
	Maths	
	Science	
28th Apr '25	English	
	Maths	
	Humanities	
5th May '25	English	
	Maths	
	MFL	
12th May '25	English	
	Maths	
	Careers	
19th May '25	English	
	Maths	
	Science	

Date	Schedule	
Term 6		
2nd Jun '25	English	
	Maths	
	Science	
9th Jun '25	English	
	Maths	
	Humanities	
16th Jun '25	English	
	Maths	
	MFL	
23rd Jun '25	English	
	Maths	
	Computing	
30th Jun '25	English	
	Maths	
	Art	
7th Jul '25	English	
	Maths	
	DT	
21st Jul '25	English	
	Maths	
	Science	
28th Jul '25	No IS	
	No IS	
	No IS	

Extra-Curricular	

#ReadyToLearnHPA

Hans Price Academy

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

"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

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)

"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

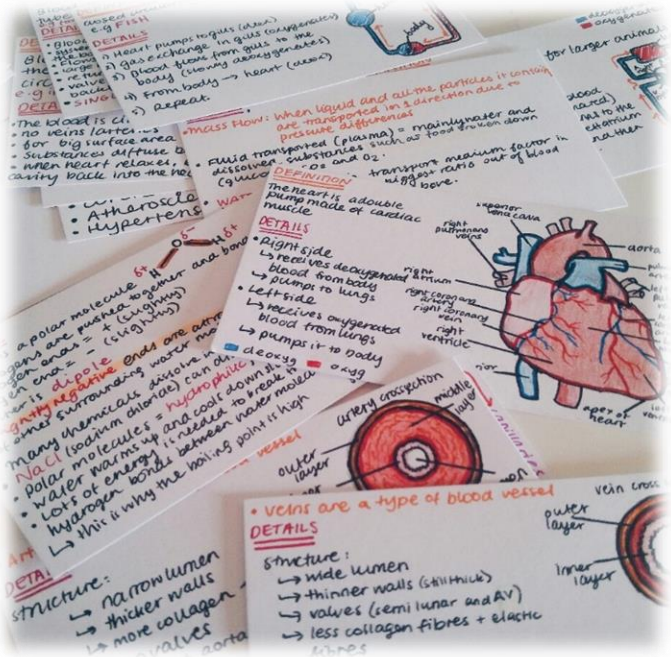
Revision Techniques

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.

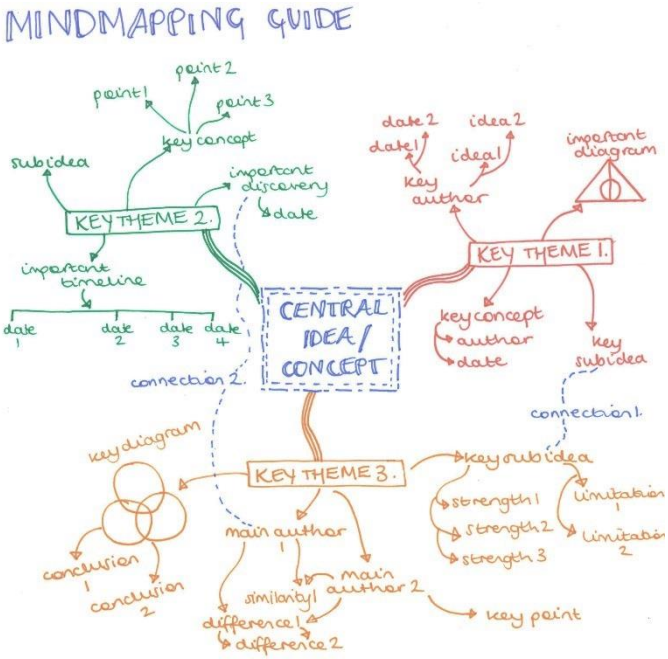


Mind Map

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.



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.

Hans Price Maths Department

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

SPARX MATHS

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.

Hans Price

KS3 English I.S

Your task each week is to understand the meaning of and spell correctly 5 key words.

Each student as a minimum <u>should</u>:

- ☐ **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.

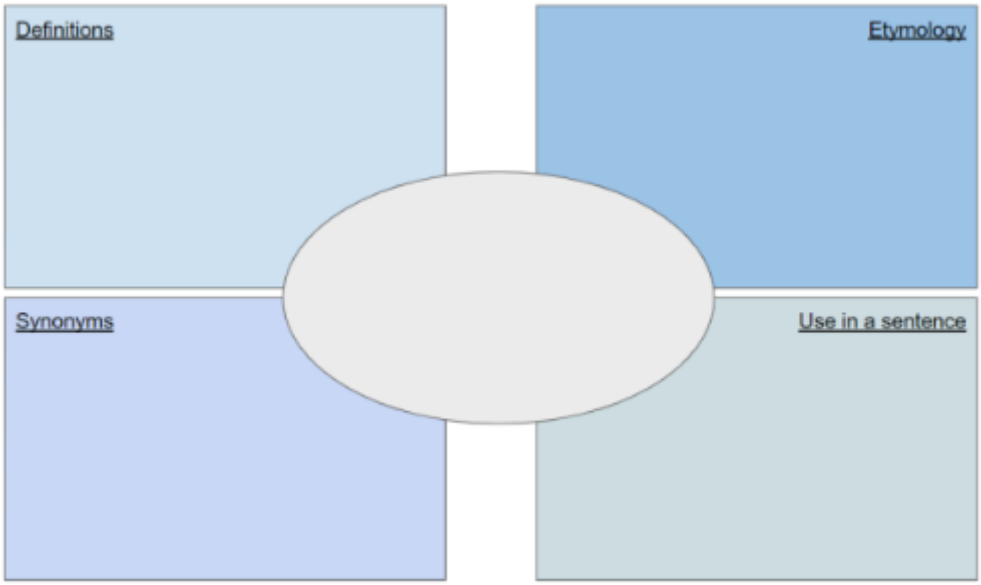
<u>OR</u>

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

However, students could <u>also</u> 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 **<u>OR</u>** write a short story of your choice that includes the key words for the week.

Frayer Model Template



IS due	Words	Definition
w/c 24/02	**Narrator**	A person from whose perspective the story is told.
	Tension	Emotional/mental strain.
	Suspense	A state of feeling excited or anxious uncertainty.
	Atmosphere	The overall feel and mood of a place or text.
	Evolution	The process of change and development over time.
w/c 03/03	**Science Fiction**	Stories based on an imagined future and advanced technology.
	Extra-terrestrial	Something coming from a place outside of planet Earth - alien.
	Exodus	A mass departure of people.
	Futuristic	Being involved in modern technology/coming from a place in the future.
	Colonialism	The practice of taking over land.
w/c 10/03	**Imperialism**	The practice of taking over land using military force.
	Juxtaposition	Two things placed closely together with a contrasting effect.
	Allusion	Hinting or making an indirect reference.
	Imagery	The use of figurative language (similes, metaphors) to create an image.
	Rhetoric	The art of speaking - giving speeches.
w/c 17/03	**Conflict**	A serious disagreement or argument.
	Dystopia	An imagined place where everything is unpleasant.
	Utopia	An imagined place where everything is perfect.
	Connotations	What you associate with certain words and what they make you think of.
	Semantic Field	A group of words that are linked by meaning and form a pattern in a text.
w/c 24/03	**Authority**	The power or right to give orders.
	Power	The ability to influence the behaviour of others.
	Colonialism	The practice of taking over land.
	Empire	A group of countries ruled by a single Government.
	Exploitation	Treating someone unfairly to benefit personally - taking advantage of someone.

IS due	Words	Definition
w/c 31/03	**Archetype**	A typical example of something.
	Omniscient	Knowing everything.
	Nonsensical	Having no meaning - making no sense.
	Dysfunctional	Not operating normally or properly.
	Catastrophe	An event causing great damage or suffering.
w/c 21/04	**Tragedy**	A play with sad events.
	Ghetto	Part of a city, especially a slum area, occupied by a minority group.
	Context	The circumstances surrounding a text.
	Usury	The practice of lending money with high interest rates.
	Merchant	A buyer and seller - trades goods for money.
w/c 28/04	**Antisemitic**	A strong hatred of Jewish people.
	Patriarchy	A society where men hold positions of power and women are largely excluded from them.
	Fatal	Causing death.
	Hamartia	A fatal flaw.
	Soliloquy	When a character speaks their thoughts aloud on stage regardless of whether anyone can hear.
w/c 05/05	**Monologue**	An extended speech made by one character.
	Aside	A comment made by a character on stage only intended for the audience to hear.
	Prejudice	A preconceived opinion - pre-judging someone.
	Discrimination	Unjust treatment of others.
	Xenophobia	Extreme dislike of people from other countries.
w/c 12/05	**Motif**	A recurring image in a text.
	Mercy	Forgiveness.
	Revenge	Hurting someone in return for a wrong suffered.
	Dramatic Irony	When the audience knows more than the characters on stage.
	Symbolism	The use of symbols/images to represent ideas.

IS due	Words	Definition
w/c 19/05	**Stage Directions**	A set of instructions in a play, telling the actor how to move, speak etc.
	Foreshadowing	Hints and clues of a future event.
	Wrath	Extreme anger.
	Elopement	To run away to secretly get married.
	Stereotype	A widely held view of someone or a particular fixed idea of someone.
w/c 02/06	**Casket**	A small decorative box or coffin.
	Persecution	Poor treatment of people usually due to ethnicity or religion.
	Rhetorical Questions	A question which does not need an answer.
	Rhetoric	The art of public speaking - giving speeches.
	Prejudice	A preconceived opinion - pre-judging someone.
w/c 09/06	**Orator**	A powerful speaker.
	Directives	Words or phrases aimed at the audience.
	Cur	An aggressive, unkempt dog.
	Gratis	Without fee or charge.
	Mercy	Forgiveness.
w/c 16/06	**Materialism**	The belief that having money and possessions is the most important thing.
	Motif	A recurring image in a text.
	Usury	The practice of lending money with high interest rates.
	Soliloquy	When a character speaks their thoughts aloud on stage regardless of whether anyone can hear.
	Hamartia	A fatal flaw.
w/c 23/06	**Hostility**	Unfriendly behaviour towards someone.
	Colonialism	The practice of taking over land.
	Tragedy	A play with sad events.
	Stage Directions	A set of instructions in a play, telling the actor how to move, speak etc.
	Patriarchy	A society where men hold positions of power and women are largely excluded from them.

IS due	Words	Definition
w/c 30/06	**Imagery**	The use of figurative language (similes, metaphors) to create an image.
	Conflict	A serious disagreement or argument.
	Merchant	A buyer and seller - trades goods for money.
	Mercy	Forgiveness.
	Gratis	Without fee or charge.
w/c 07/07	**Rhetoric**	The art of speaking - giving speeches.
	Tension	Emotional/mental strain.
	Suspense	A state of feeling excited or anxious uncertainty.
	Stage Directions	A set of instructions in a play, telling the actor how to move, speak etc.
	Stereotype	A widely held view of someone or a particular fixed idea of someone.
w/c 14/07	**Persecution**	Poor treatment of people usually due to ethnicity or religion.
	Context	The circumstances surrounding a text.
	Theme	A recurring idea in a text.
	Symbolism	The use of symbols/images to represent ideas.
	Connotations	What you associate with certain words and what they make you think of.

CP2 FORCES & MOTION

Hans Price Academy

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

Resultant force = 5N – 2N = 3N left

Resultant force = 5N – 5N = 0N

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.

Balanced forces

Unbalanced forces

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.
Weight (N) = mass (kg) x gravitational field strength (N/kg)

What is the weight of a 90kg astronaut on the surface of Earth.
Earth has a gravitational field strength of 10N/kg.
90kg x 10N/kg = 900 N

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:

Force = mass x acceleration
(N) (kg) (m/s^2)

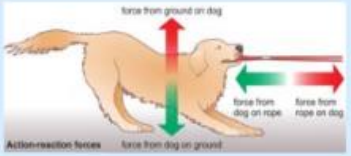
A motorcycle has a mass of 200kg.
What force is needed to give it an acceleration of $7m/s^2$?

200 kg x $7m/s^2$ = 1400N

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:

Momentum = mass x velocity
(kg m/s) (kg) (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**.

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.

Stopping distance = thinking distance + braking distance
(m) (m) (m)

A drivers reaction time will affect the distance travelled whilst thinking. Some factors that affect reaction time include:
- Tiredness
- Drugs
- Alcohol
- Distractions

The braking distance of a car is dependent on friction. Some factors that affect the braking distance include:
- 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

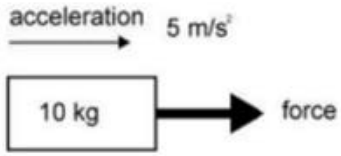
Edexcel GCSE (9–1)

Sciences CP2d.5

Acceleration calculations Homework 1

Name _____ **Class** _____ **Date** 24th February

1 What are the resultant forces acting on these objects?



$$\text{Force (N)} = \frac{\text{Mass(kg)}}{\text{Acceleration (m/s}^2\text{)}}$$

a An object of mass 10 kg accelerating at 5 m/s².

_____ N

b mass 15 kg, acceleration 5 m/s² _____ N

c mass 20 kg, acceleration 8 m/s² _____ N

d mass 16 kg, acceleration 10 m/s² _____ 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.

a

resultant force _____ N

direction _____

acceleration _____ m/s²

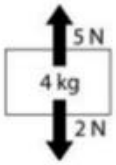
b

resultant force _____ N

direction _____

acceleration _____ m/s²

c

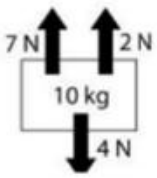


resultant force _____ N

direction _____

acceleration _____ m/s²

d

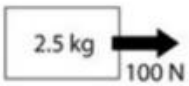


resultant force _____ N

direction _____

acceleration _____ m/s²

e

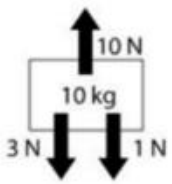


resultant force _____ N

direction _____

acceleration _____ m/s²

f



resultant force _____ N

direction _____

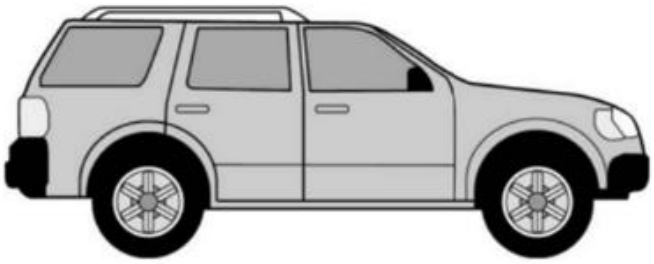
acceleration _____ m/s²

Edexcel GCSE (9–1)

Sciences CP2h.5 Car designs – Homework 1

Name_____ **Class**_____ **Date** 31st March

The manufacturers of this car have asked their design team to develop a new model.



Some of the suggested changes are:

- use lighter materials to reduce the mass of the car
- fit brakes that can produce a greater braking force
- increase the force the engine can produce
- make the bonnet longer without increasing the size of the engine.

These changes will affect the performance of the car (its acceleration and braking), and some will also affect its safety.

1 Cross out the incorrect words to describe some of the effects these changes will have.

If there are no other changes, reducing the mass of the car will (increase/decrease) its acceleration when it starts to move. It will (increase/decrease) its stopping distance at a particular speed, and will (increase/decrease) the force on the car in a collision.

The increased force from the engine will (increase/decrease) the car's maximum acceleration.

The increased force from the brakes will (increase/decrease) the car's stopping distance at a particular speed.

The longer bonnet allows the **crumple zone** in the front of the car to be (longer/shorter). This means the time it takes the car to come to a stop in a collision will be (longer/shorter), so the **deceleration** will be (greater/smaller). A (greater/smaller) deceleration means the forces on the car will be (larger/smaller).

2 Crumple zones only improve safety if the passengers in a car are wearing seat belts. Complete the following sentences to explain why this is so, using words from the box. You can use each word once, more than once or not at all.

acceleration	airbag	crumple zone	decelerate	force	forces
greater	helmets	seat belts	smaller	velocity	

When a car is in a collision, _____ from the collision make it _____. These can damage the car and hurt the people inside.

A _____ increases the time it takes for a car to come to a stop. If the passengers are not wearing _____ there is no force on them to make them _____, so they continue to move with the same _____ as before.

They continue to move forwards until they hit something, such as the dashboard or steering wheel. This puts a _____ on them that makes them stop. The deceleration when they hit the dashboard is much _____ than the deceleration of the car itself, so the forces on them are also_____ _____.

CP3 CONSERVATION OF ENERGY

1. Energy stores

Energy is needed to make things happen or change. It is scalar quantity measured in Joules (J).

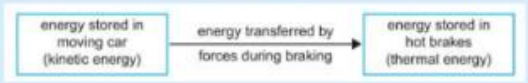
1. **Chemical** (food, fuel and batteries)
2. **Kinetic** (moving objects)
3. **Thermal** (hot objects)
4. **Elastic potential** (stretched, squashed or twisted objects)
5. **Gravitational potential** (objects in high positions)
6. **Nuclear** (inside atoms)






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.**



Sankey diagrams show the transfer of energy. This Sankey diagram shows the energy transfer in a kettle.

Efficiency = $\frac{\text{useful energy}}{\text{total energy}}$

3. Conduction

Energy can be transferred by conduction.

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

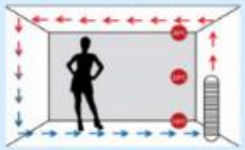
Metals are good thermal conductors and are said to have high thermal conductivity.

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.

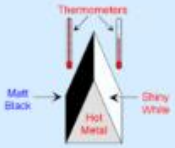
As particles in the liquid or gas state gain energy, they become less dense and start to rise. This generates convection currents and explains why an entire room heats up despite only having one radiator on one wall.




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

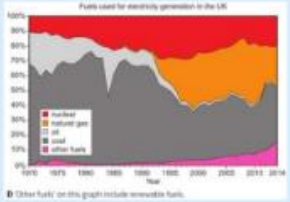
Objects stored at a height have the potential to fall. This is known as gravitational potential energy (GPE). This potential energy is then transferred to kinetic energy if the object falls towards Earth due to the force of gravity. If no energy is wasted GPE=KE.

Change in gravitational energy (J)	=	Mass (kg)	x	Gravitational field strength (N/kg)	x	Change in vertical height (m)
Kinetic energy (J)	=	1/2	x	Mass (kg)	x	(velocity)^2

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).

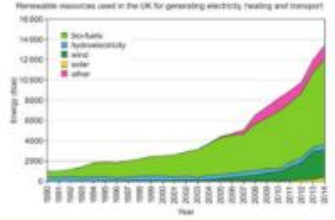
Fossil fuels release carbon dioxide and other greenhouse gases which contribute to climate change. As coal is the most damaging its use has been reduced in recent years.



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.

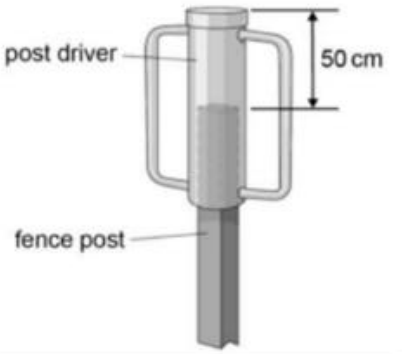


Edexcel GCSE (9–1)

Sciences CP3d.5 Stored energies – Homework 1

Name _____ **Class** _____ **Date** 21st April

A post driver is a tool used to drive fence posts into the ground. It is a hollow tube with a closed top. It has handles on the side. The person using the tool fits it over the fence post then lifts it up and allows it to drop onto the post.



1 A post driver has a mass of 10 kg. Calculate the change in gravitational potential energy (GPE) stored when the post driver is lifted by 50 cm above the post, as shown in the diagram. The gravitational field strength on Earth is 10 N/kg.

50 cm = _____ m

ΔGPE = _____ kg × _____ N/kg × _____ m

ΔGPE = _____ J

2 Calculate the change in GPE stored when a 15 kg post driver is lifted by 70 cm.

ΔGPE = _____ J

3 A 10 kg post driver is moving at 2 m/s just before it hits the fence post.

a Calculate the kinetic energy (KE) stored in the moving post driver.

KE = ½ × _____ kg × (_____ m/s)²

KE = _____ m/s

b How much GPE was the post driver storing just before it was dropped? Explain your answer.

_____

_____

c Calculate the height from which this post driver was dropped onto the post.

$$\text{change in vertical height (m)} = \frac{\text{\_\_\_\_\_ J}}{\text{\_\_\_\_\_ kg} \times \text{\_\_\_\_\_ N/kg}}$$

height = _____ m

4 A post driver is storing 22.5 J of KE when it is moving at 3 m/s. Calculate the mass of the post driver.

$$\text{mass} = \frac{\text{\_\_\_\_\_ J}}{\text{½} \times (\text{\_\_\_\_\_ m/s})^2}$$

mass = _____ kg

Δ*GPE* = change in gravitational potential energy (J)

m = mass (kg)

g = gravitational field strength (N/kg)

Δ*h* = change in vertical height (m)

KE = kinetic energy (J)

v = speed (m/s)

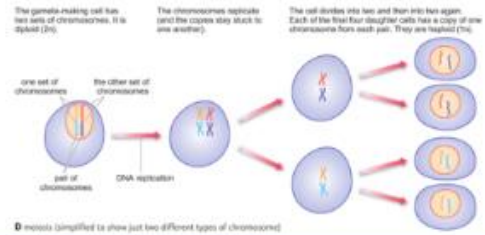
$$\Delta GPE = m \times g \times \Delta h$$

$$KE = \frac{1}{2} \times m \times v^2$$

CB3 Genetics

1. Meiosis

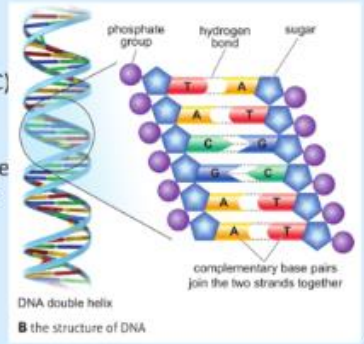
There are two types of cell division called mitosis and meiosis . Mitosis produces **2** genetically identical, diploid body cells for growth and repair. **Meiosis produces 4 haploid, genetically unidentical sex cells (gametes)**. These fuse to form a diploid zygote after fertilisation.



D meiosis (simplified to show just two different types of chromosome)

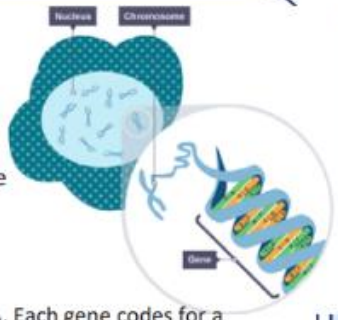
2. Structure of DNA Double helix

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.



B the structure of DNA

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

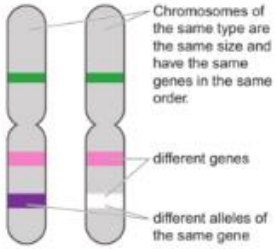
Aim: Describe how to extract DNA from a fruit.
Method
1.Peel the skin from half a kiwi fruit and mash it up.
2.Mix a teaspoon of salt and small volume of washing up liquid and pineapple juice into the fruit.
3.Gently heat this mixture at about 60°C for five minutes.
4.Filter the mixture and retain only 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**).

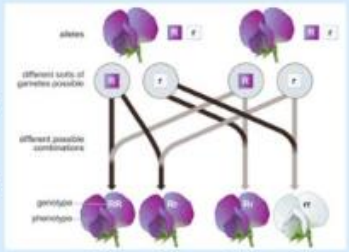
Each allele can also be dominant (this one will always be used) represented by a capital letter or recessive (will only be used if the other allele is also recessive) represented as a lower case letter.



B Each gene can exist in a number of different forms called alleles.

6. Haploid and diploid cells

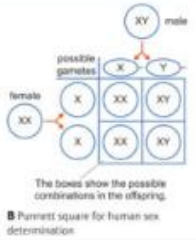
Gametes are **haploid**, only carrying one set of the chromosome. When the **gametes** are made in meiosis, only one of the alleles is used. When the sperm and the egg come together in fertilisation, a **diploid zygote** is produced (now with both alleles - one from the father and one from the mother).



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).

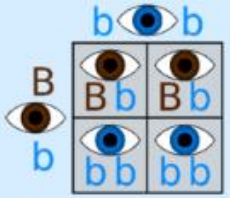


B Punnett square for human sex determination

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). So 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 fathers 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** 19th May

1 The table shows the number of chromosomes in the body cells of various animals.

Animal	Total number of chromosomes in a normal body cell
fruit fly	4
pig	38
human	46
gypsy moth	62
dog	78

a How many chromosomes are needed in a pig to contain its entire genome?

_____

b Why are the numbers of chromosomes all even numbers?

_____

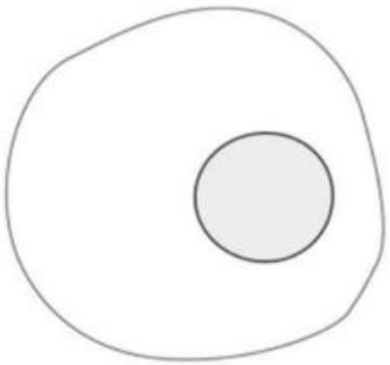
_____

c How many chromosomes would you expect to find in each of these cells?

i a human body cell _____ **ii** a dog sperm cell _____

iii a gypsy moth egg cell _____ **iv** a pig zygote _____

2 The drawing below shows a body cell from a fruit fly.



a Draw in its chromosomes.

b What long molecule is found inside each chromosome? _____

c Add labels for: cell surface membrane, chromosome, cytoplasm, nucleus, position of a gene.

d What do genes contain the instructions for? _____

e Unmuddle these letters to give the name of a cell part that joins amino acids together.

BRIE MOOS _____

f In which part of the cell are these parts found? _____

3 Using *some* of the words from the box, complete the sentences to describe the importance of meiosis.

chromosome	daughter	diploid	eight	father	female	fertilisation	four
haploid	male	meiosis	mitosis	mother	son	two	gametes

A zygote is formed when male and _____ gametes fuse. The zygote divides by _____ to form an embryo. To make sure the zygote is _____ (2n) the gametes must be _____ (1n). So, _____ is used to make gametes. This process produces _____ haploid cells. There are two copies of each _____ in a gamete-making cell. The two copies are slightly different. The different copies are randomly sorted into the _____ cells and so one gamete-making cell will produce _____ that contain different mixtures of chromosomes compared to others.

CB4 Natural Selection

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.

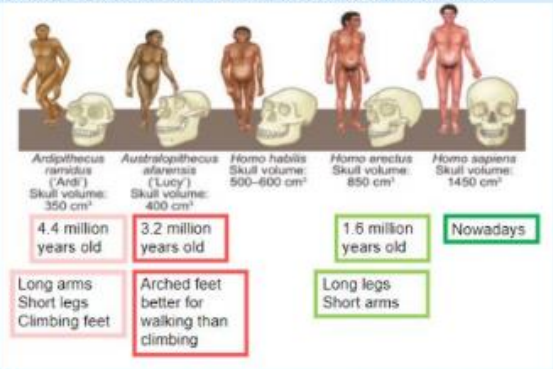
NATURAL SELECTION – those with the resistance survive and reproduce.

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.

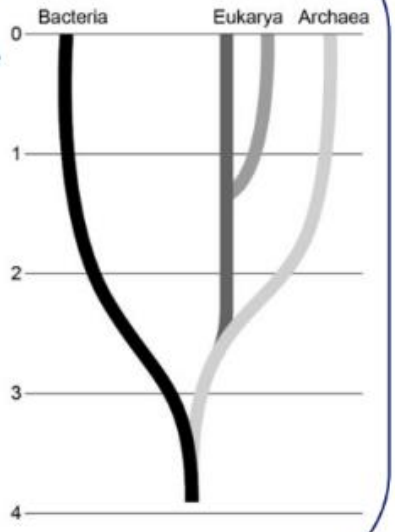
3. Classification

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

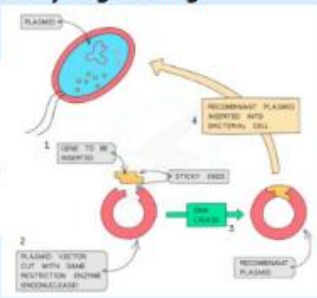
Artificial transfer of a gene responsible for a desired characteristic from one organism into another organism, so that it also has the desired characteristic.

Examples of genetic engineering:

- Golden Rice – rice that contains **beta-carotene**
- Bacteria containing the **human insulin gene.**

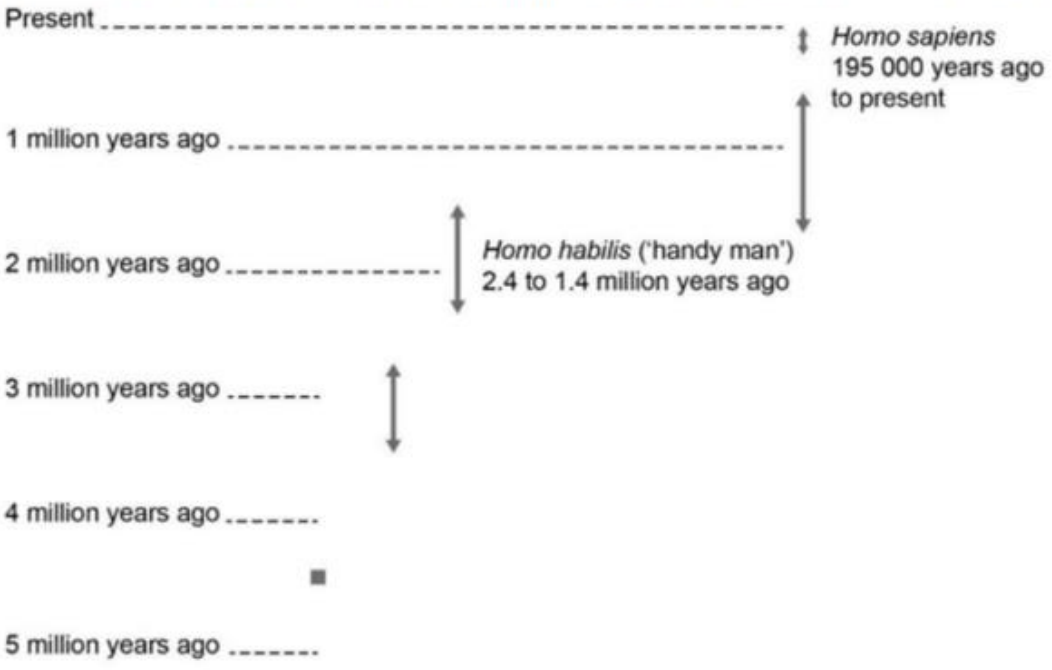
The stages of genetically engineering:

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** 2nd June

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. 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.

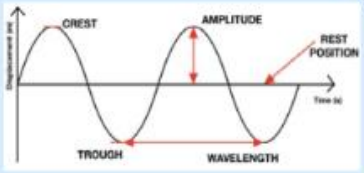
The **period** is the length of time it takes one wave to pass a given point.
The **wavelength** of a wave is the distance from a point on one wave to a point in the same position on the next wave, measured in metres.

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.



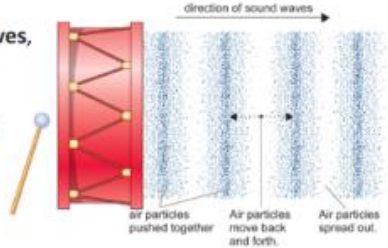
Examples of transverse waves include:

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

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.



4. Calculating wave speed

Worked example W1

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

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

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

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

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.

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

5. Calculating wave speed (again)

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

wave speed (m/s) = frequency (Hz) × wavelength (m)

Worked example W2

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

$v = f \times \lambda$

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

$= 6.5\text{ m/s}$

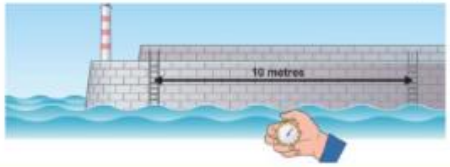
CP4 Waves

Hans Price Academy

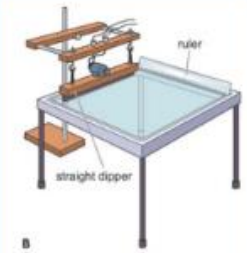
6. Measuring the speed of waves

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

Measuring waves on water

A Set up a ripple tank with a straight dipper near one side of the tank. Fasten a ruler to one of the adjacent sides so you can see its markings above the water level.

B Vary 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).

C Count how many waves are formed in 10 seconds and write it down.

D 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.

E 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

F Suspend a metal rod horizontally using clamp stands and rubber bands.

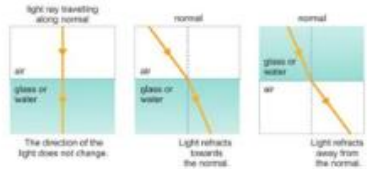
G Hit one end of the rod with a hammer. Hold a smartphone with a frequency app near the rod and note down the peak frequency.

H Measure the length of the rod and write it down. The wavelength will be twice the length of the rod.

I Use the frequency and wavelength to calculate the speed of sound in the rod.

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



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

Edexcel GCSE (9–1)

Sciences CP4a.4

Describing waves Homework 1

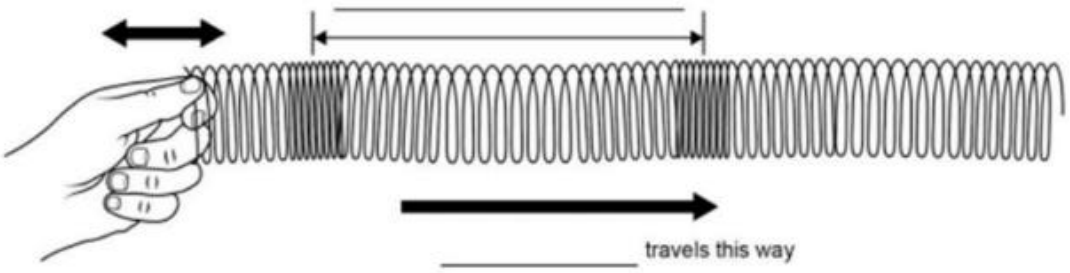
Name _____ **Class** _____ **Date** 21st July

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

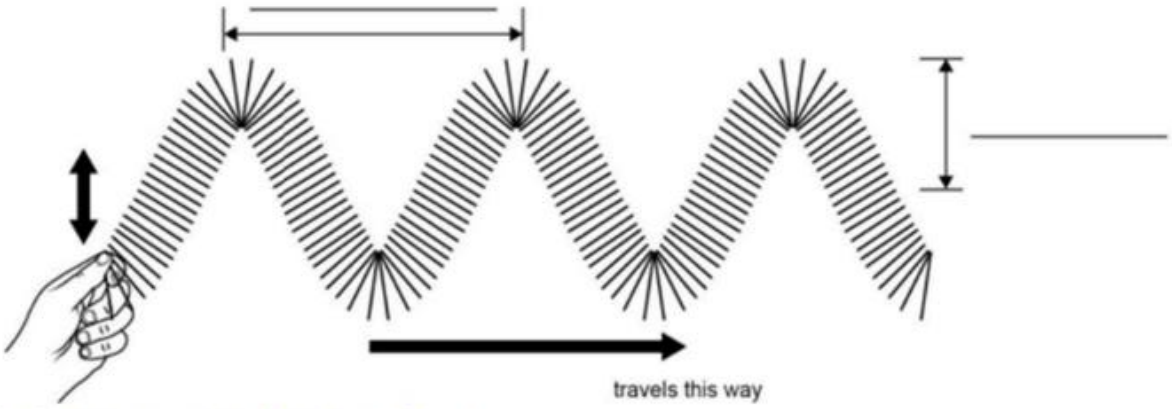
Label the diagrams using words from the box. You can use each word once, more than once, or not at all.

amplitude	energy	frequency	longitudinal
particles	period	transverse	wavelength

a _____ wave



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.

a In a ~~transverse~~ longitudinal wave, the particles move backwards and forwards 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.

Methods of Prevention and Detection

Firewall

- Controls which programs can send or receive data packets from your computer or network.
- Stops intruders/unauthorised users from accessing your computer system.
- Only trusted programs should be allowed to send and receive data packets.

Antivirus

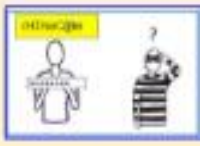
- Scans your computer periodically for malware.
- Quarantines malware so that it doesn't spread to other files or computers.
- You need to scan all downloads and email attachments before opening them.
- Needs to be updated regularly in order to keep up to date with the latest threats.

Encryption

- Scrambles data packets using a cipher so that they cannot be read by unauthorised users.
- You need a key to decrypt the data packets so that they can be read.
- Websites which require you to send personal information should be encrypted (HTTPS).
- WiFi connections should also be encrypted to stop unauthorised users from accessing your network.

Passwords

- Needs to be at least 8 characters long.
- Should include UPPERCASE, lowercase, numbers and Symbols (e.g. ! $ @ -).
- Stops unauthorised users from accessing your account/profile and changing/deleting/stealing your files.



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 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

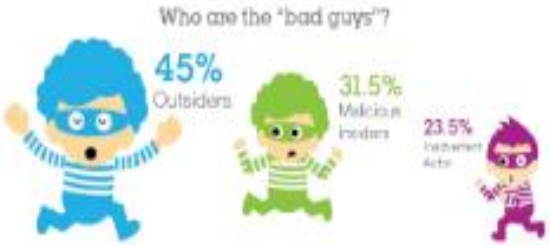
Computer viruses – insert themselves in normal programs. Viruses can replicate themselves and transfer from one computer to another. They are activated by a user often as email attachments and attachment to other files and programs.

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.



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

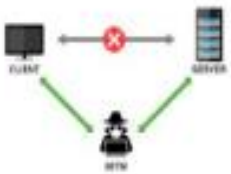
Brute-force Attack can be prevented by:

- ✔ 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**



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

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.

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

Key Terms Explained

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 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 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.

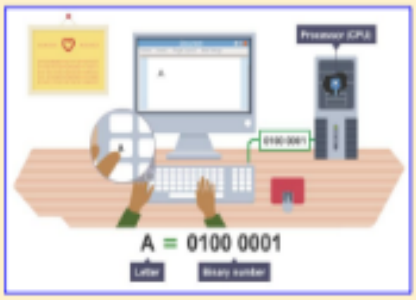
What are User Access Levels?

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.

Representing Characters

Why is text represented as a binary number?

Computers don't understand letters and numbers the way that we do. Everything in a computer is represented by an electrical signal which can be in one of two states: **on** or **off**. These two states (**on** and **off**) can be **represented** by two numbers (**1** and **0**). This means that we must **represent** all information, including text, as a **binary number** (made up of 1s and 0s). So we came up with **standard systems** for **representing** each character as a **binary number**. One **standard system** for representing characters is **ASCII Code** and another is **Unicode**



ASCII Code

ASCII stands for **American Standard Code for Information Interchange**. Originally, **ASCII Code** represented each character as a **binary number** with **8 binary digits** (**8 bits**). That's a binary number, made up of 8 values and each value will be either 1 or 0. For example, 1000001. So ASCII Code can represent 256 different characters (2^8).

- the letter 'a' has the binary number 0110 0001
- the letter 'b' has the binary number 0110 0010
- the letter 'c' has the binary number 0110 0011

Character Set

Characters are grouped together to form a **character set**. The **character set** is **all the characters** that a computer **understands** and **can display**. A **character set** includes:

- ✔ letters and numbers
- ✔ symbols (*, &, : etc.)
- ✔ control characters (e.g. Shift, Escape)

Unicode

Unicode was created to allow more characters to be represented. This allowed emoticons and characters from languages other than English to be represented. Unicode uses **16 bits** to represent each character (65,536 different characters: 2^{16}) and adapted versions of Unicode now use up to **32 bits**.

Representing Images

An image is made up of **pixels.** Each **pixel** will have a colour and the **higher the number of colours** that you want to use, the **higher the number of bits** you will need to represent each colour.

The **resolution** of the image is the number of **pixels per inch** that we use to display an image. The higher the resolution the **better the picture quality** but the **larger the file size**

The number of bits needed to represent an image is called the **colour depth.** The greater the colour depth, the **greater the number of colours** and the **better the image quality**...

...but the **more bits** we use for each pixel, the **larger the image file size** because each bit takes up space in the file

Binary Digit Values

Each **binary digit** has a **denary value** depending on which column it is in. So it can be converted to a number in our (denary) number system.

128	64	32	16	8	4	2	1
0	0	0	0	1	0	1	0

We just add the numbers together of all columns with a **1** in. So, this number has a **denary value** of **8 + 2 = 10**

Adding Binary Numbers

When two numbers that are less than 10 are added together in denary, sometimes we need two columns, two numbers to write the answer.

For example 7 + 5

$$\begin{array}{r} 7 \\ +\ 5 \\ \hline 12 \end{array}$$

The same is true in binary...

...but in binary, there are four rules that need to be followed. Here are the rules...

0 + 0 = 0

1 + 0 = 1

1 + 1 = 0 (carry the one)

1 + 1 + 1 = 1 (carry the one)

Converting Hex Digits to Denary

Method

a) Split the hex value

F | 8

b) Work out the nibble for each hex value. If it is a letter, then you will need to know the denary value.

F			
8	4	2	1
1	1	1	1

8			
8	4	2	1
1	0	0	0

c) Join the 2 nibbles and add them to 8 bits in a table

128	64	32	16	8	4	2	1
1	1	1	1	1	0	0	0

d)Add the denary number values of the table

128	+	64	+	32	+	16	+	8	=	248

Denary (Base 10)	Hexadecimal (Base 16)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

Converting Denary Numbers to Hex

Method

248

a)Convert the denary number to binary

128	64	32	16	8	4	2	1
1	1	1	1	1	0	0	0

b) Split the binary number into two nibbles and work out the hex value of each nibble

F			
8	4	2	1
1	1	1	1

8			
8	4	2	1
1	0	0	0

c)Join the hex digits together

F8

Denary (Base 10)	Hexadecimal (Base 16)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

Converting Binary to Hex

Method

a) Split into nibbles!

0011 | 1011

b) Work out each nibble as a hex value.

8	4	2	1
0	0	1	1

2+1=3

8	4	2	1
1	0	1	1

8+2+1=11

11 is B in hexadecimal

c) Join the 2 hex values together to get your answer!

3B

Denary (Base 10)	Hexadecimal (Base 16)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

Answers on next slide
Don't cheat!

Converting Hex Digits to Binary

Method

a) Split the hex value

F | 8

b) Work out the nibble for each hex value. If it is a letter, then you will need to know the denary value.

F			
8	4	2	1
1	1	1	1

8			
8	4	2	1
1	0	0	0

F is 15 in denary

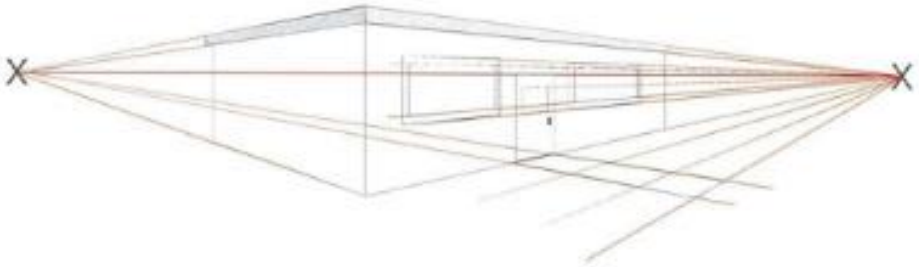
c) Join the 2 nibbles to get your answer!

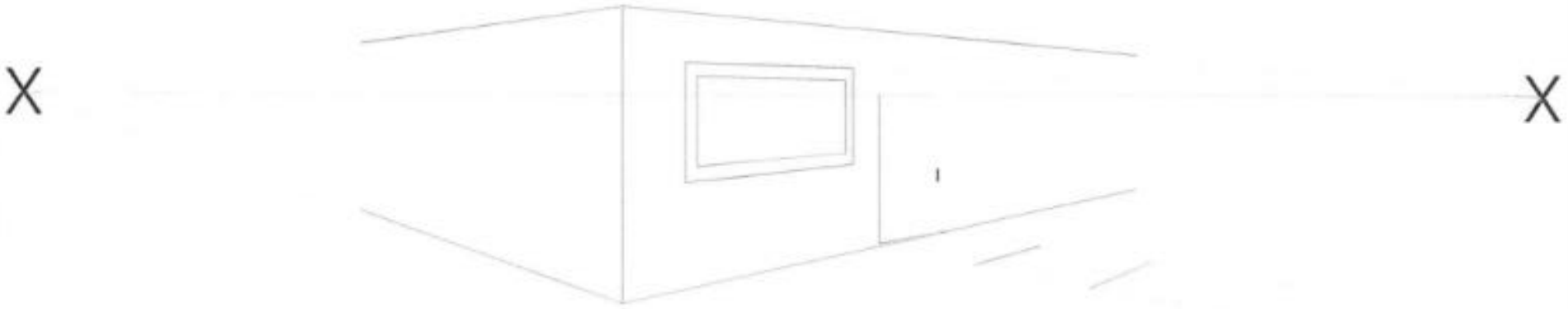
11111000

Denary (Base 10)	Hexadecimal (Base 16)
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	A
11	B
12	C
13	D
14	E
15	F

TWO POINT PERSPECTIVE - FLAT ROOF HOUSE

1. Using the basic outline below. Complete the drawing of the house with a flat roof
2. Add detail to the house. You may wish to include;
curtains, decorative window frames, door panels, plants in the garden etc...





Using coloured pencils or felt pens, render the outline drawing of the torch and the exploded view of the torch.

SHADING TECHNIQUES

USEFUL LINK
https://technologystudent.com/designpro/torch1.html

TORCH OUTLINE

SAMPLE

OUTLINE

EXPLODED DRAWING

SAMPLE

OUTLINE

QUESTION

ADVANCED - FELT PEN SHADING TECHNIQUES

QUESTION

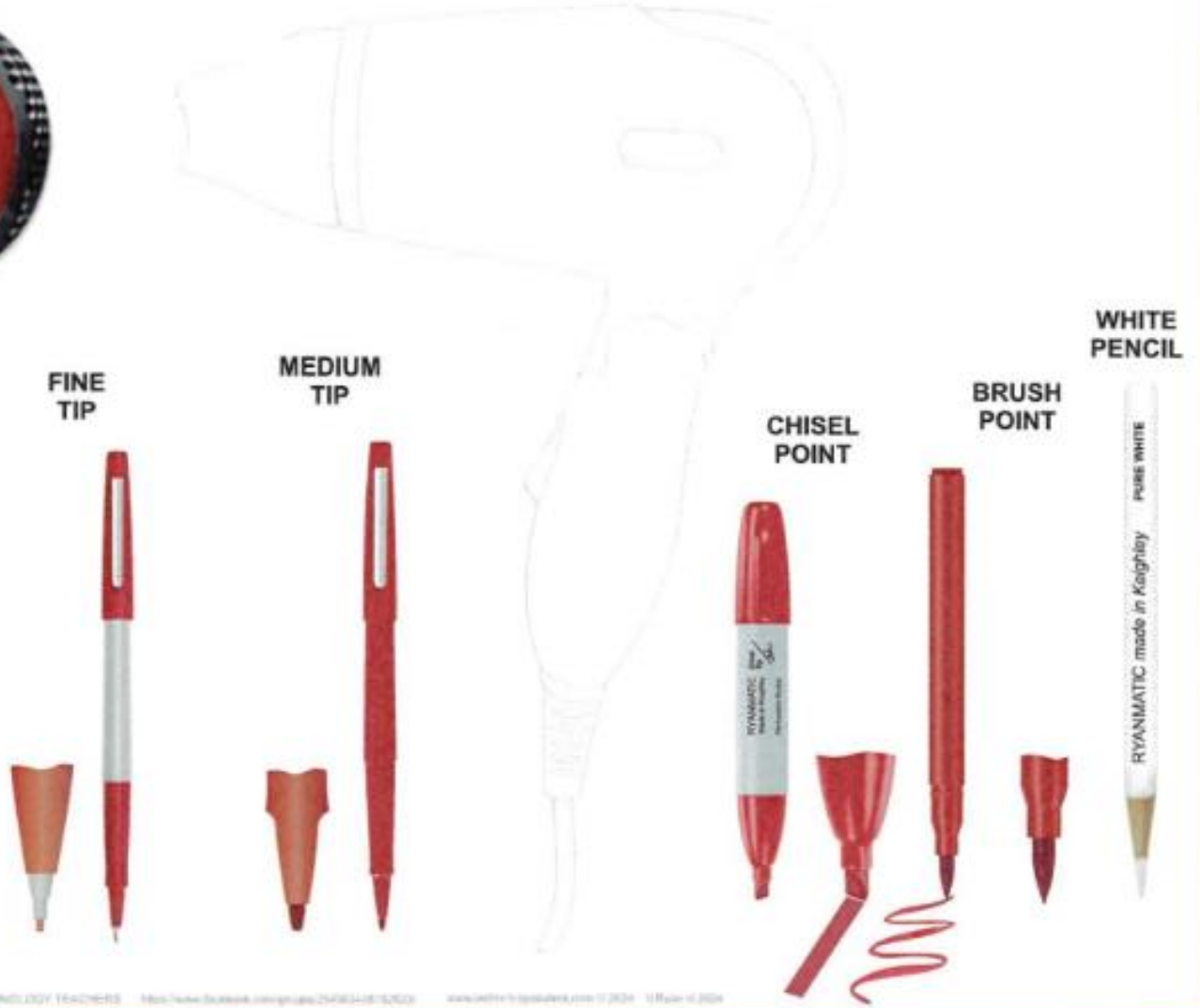
USEFUL LINK

https://technologystudent.com/designpro/hair1.html

A PHOTOGRAPH OF A TYPICAL HAIR DRYER IS SHOWN BELOW. STUDY THE COLOURS, SHADES AND REFLECTION OF LIGHT.
YOU ARE TO EFFECTIVELY 'RENDER' THE OUTLINE VERSION, USING A RANGE OF FELT PENS AND A WHITE PENCIL. SELECT YOUR OWN COLOURS.

PHOTOGRAPH

YOUR RENDERING / SHADING



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

Each serving (150g) contains

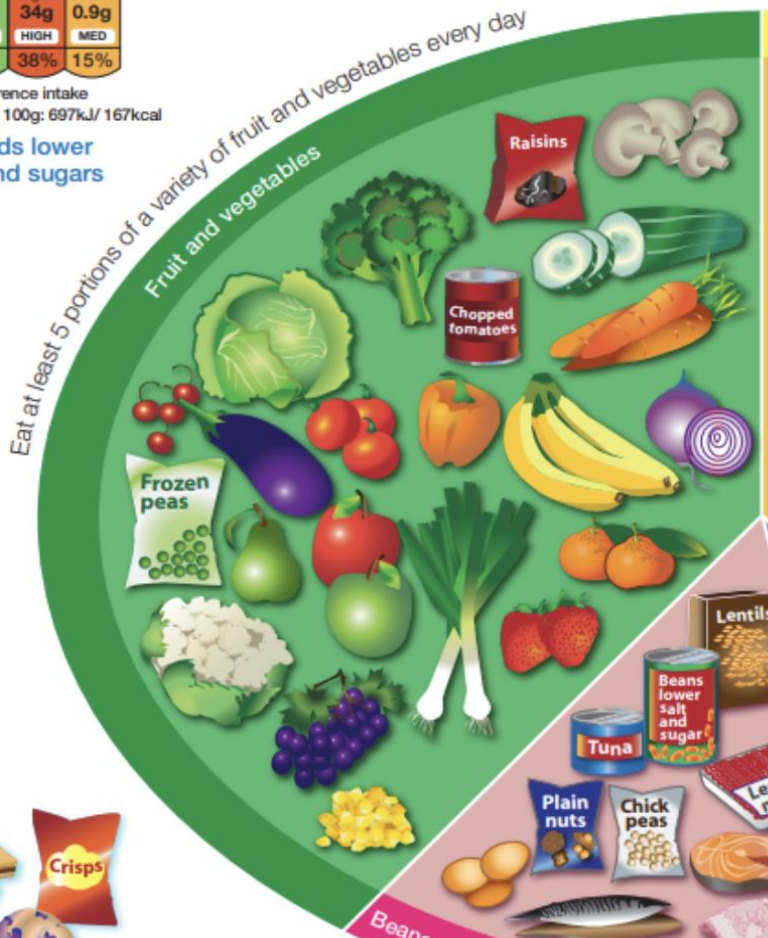
Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

Eat less often and in small amounts



Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Choose lower fat and lower sugar options

Choose unsaturated oils and use in small amounts

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.

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

9.12 Festivals and Culture

Listening check-list

Before I listen …

1. read the exercise carefully, paying attention to the instructions and pictures
2. think of possible words, phrases and ideas I might hear
3. think about how these words and phrases would be pronounced
4. think of the different ways certain phrases could be expressed

While I listen, pay attention to…

5. repetition or paraphrase
6. time marker phrases
7. the questions and tasks that go with the passage
8. all the things I predicted (questions, vocabulary, possible answers)

While I listen, I work out any words I don't know by…

9. using the words I understand to get the general meaning of the passage first
10. listening to words that come before or after the unknown word
11. using my general knowledge to think about what the unknown word might logically mean
12. listening to what comes later in the passage for further clues, or to check whether the unknown word does in fact mean what I think it means
13. using what I know about sentence structure to work out what kind of word it is (noun, adjective, verb)
14. thinking whether the unknown word is like a word I know in English or French/German/Spanish, and then checking whether that meaning would make sense

Reading – Top tips

- Read the introduction to the question carefully. This will help you to give sensible answers. Look for titles.
- Answer every question, especially where you have to write a letter. If in doubt, have a guess.
- Read the whole of the sentence so that you can check that your first reaction is right. If you think the answer is 'P' (positive) for example, read on in the text to make sure that the correct answer is not in fact 'P and N' (positive and negative).
- Do not copy whole chunks of the text because you might include the wrong answer as well as the right answer.
- If you are asked to give **one** reason or **one** detail, only give one.

VOCABULARY IS KEY!

Look through the vocab lists and try to refresh your memory of as much vocabulary as possible.

Translation – Top tips

- Read the whole sentence/paragraph first.
- Chunk the sentences e.g. I play / videogames / in my bedroom.
- Highlight what you don't know.
- Be as ACCURATE as you can.
- What are you being tested on, look out for different time markers.
- Make sure you reread your translation, does it make sense?

9.11 My school
Knowledge Organiser

School – Subjects, uniform and time
Future plans & jobs

The present tense	ER verb	IR verb	RE verb
Je (I)	-e	-is	-s
tu (you)	-es	-is	-s
Il/Elle/On (he/she/one)	e	-it	-
Nous (we)	-ons	-issons	-ons
Vous (you all)	-ez	-issez	- ez
Ils /Elles (they)	-ent	-issent	-ent

The future tense in French

You can talk about the future by using the **near future** tense.
Use part of the verb ALLER and the infinitive to say what you are **going** to do.

Ce soir, je vais jouer au tennis. This evening I am going to play tennis.
Demain, Paul va faire un gâteau. Tomorrow Paul is going to make a cake.

You can also use the following phrases with an infinitive to refer to the future.
Je veux= I want
Je voudrais = I would like
J'aimerais = I would like
J'espère = I hope
J'ai l'intention de = I intend / I am planning

Adjectives describe nouns e.g., a **black** blazer.

In French, adjectives normally go after the words they are describing e.g., une chemise bleue (a blue shirt) and they must agree with the noun they are describing.

Adjectives must agree with the noun (or pronoun) they describe in gender and in number.

This means that if the noun an adjective describes is feminine, the adjective must be feminine e.g., une veste noire (a black blazer).

If that same noun is also plural, the adjective will be feminine **AND** plural as well e.g., les chaussettes noires (black socks).

Comparatives – **to express more or less than**
… est plus + adjective + que - is more…adjective…than
… est moins + adjective + que - is less…adjective… than
… est aussi + adjective + que – is as…adjective…as
For example:
L'anglais est plus intéressant que la géographie. (English is more interesting than Geography)
L'histoire est moins amusant que l'E.P.S. (History is less fun than PE)
Le français est aussi difficile que les maths. (French is as difficult as maths).

9.11 My School Life – Vocabulary List

Les matières	School subjects
L'anglais	English
L'espagnol	Spanish
Le français	French
Le théâtre	Drama
Le dessin	Art
Le sport / l'EPS	PE
L'informatique	Computer Science
L'éducation civique	PSHE
La technologie	Technology
Les mathématiques	Maths
Les sciences	Science
Les sciences humaines	Humanities

Quelles sont les règles?	What are the rules?
On doit / On ne doit pas	You must / You must not
On peut / On ne peut pas	You can / You can not
Il faut	You must
Il est interdit de/d'	It is forbidden to
Écouter en classe	(to) listen in class
Utiliser son portable	(to) use your phone in class
Porter des bijoux	(to) wear jewellery
Porter du maquillage	(to) wear make-up
Porter des baskets	(to) wear trainers
Manquer les cours	(to) miss lessons
Être à l'heure	(to) be on time
Mâcher du chewing-gum	(to) chew chewing-gum
Faire ses devoirs	(to) do homework

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)

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/Veterinaire	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

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
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
Un prof	A teacher

9.12 Festivals
French Vocab List

¿Quelle est ta fête préférée?	What is your favourite festival
Ma fête préférée est...	My favourite festival is..
Le Noël	Christmas
Le Réveillon de Noël	Christmas Eve
La Saint-Sylvestre	New Year's Eve
Le Nouvel An	New Year's Day
Le Divali	Divali
Pâques	Easter
Le Hanoukka	Hanukkah
L'Aïd	Eid
Le premier avril	April Fool's day
L'anniversaire	Birthday
Le premier mai	May day
Une fête	Party
La fête des Mères	Mother's day
La fête de la musique	Music festival
Un jour férié	Bank Holiday
Le mariage/les noces	Marriage/wedding
Le 14 juillet	Bastille Day
La Saint-Valentin	Valentine's day
Le Mardi Gras	Shrove Tuesday

¿Qu'est-ce qu'on fait pour célébrer?	What do we do to celebrate?
Je me lève	I get up
Je me douche	I shower
Je m'habille	I get dressed
Je reçois des cadeaux	I receive presents
J'éteins des bougies	I blow candles out
Je décore l'arbre de Noël	I decorate the Christmas tree
J'achète des nouveaux vêtements	I buy new clothes
Je vais à l'église	I go to church
Je vais à la mosquée	I go to the mosque
Je vais à la place	I go to the square
Je vais à la maison de ...	I go to ...'s house
... arrive	... arrives
Nous mangeons...	We eat...
Nous jeûnons	We fast
Nous jouons des jeux de société	We play board games
Nous célébrons	We celebrate
Je m'amuse bien	I have a good time
Je regarde des feux d'artifices	I watch the fireworks
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	unforgetable
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'aurais ... 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 -Spanish Vocab List

Cabot Learning Federation

¿Cuál es tu asignatura favorita?	What is your favourite subject?
1. El inglés	English
2. El español	Spanish
3. El francés	French
4. El teatro	Drama
5. El dibujo	Art
6. El deporte	PE
7. La informática	Computer Science
8. La música	Music
9. La tecnología	Technology
10. La geografía	Geography
11. La historia	History
12. La religion	RE
13. La educación personal y social	PSHE
14. Las matemáticas	Maths
15. Las ciencias	Science
16. Las humanidades	Humanities
¿Cuál es tu opinión?	What is your opinion?
17. Es	It is
18. Interesante	Interesting
19. Práctico	Practical
20. Útil	Useful
21. Ínutil	Useless
22. Fácil	Easy
23. Difícil	Difficult
24. Aburrido	Boring
25.Emocionante	Exciting
26. Creativo	Creative
27. Importante	Important

¿Qué llevas?	What do you wear?
28. Llevo...	I wear
29. Una chaqueta	Blazer
30. Un jersey	Jumper
31. Una camisa	Shirt
32. Una camiseta	T-shirt
33. Una corbata	Tie
34. Una falda	Skirt
35. Unos calcetines	Socks
36. Unos pantalones	Trousers
37. Unos zapatos	Shoes
38. Unas medias	Tights
¿Cómo es tu uniforme escolar?	What is your school uniforme like?
39. Es...	It is ...
40. Feo	Ugly
41. Bonito	Pretty
42. (in)cómodo	(un) comfortable
43. Caro	Expensive
44. Barato	Cheap
45. De moda	Fashionable
46. Pasado de moda	Unfashionable

La jornada escolar	The school day
47. Salgo de casa	I leave home
48. Voy al insti	I go to school
49. Las clases empiezan...	Classes start...
50. Las clases terminan...	Classes end ...
51. Dura...	It lasts ...
52. El recreo	Break
53. La hora de comer	Lunch
54. Por la mañana	In the morning
55.Por la tarde	In the afternoon

¿Cuáles son las reglas?	What are the rules?
56. (no) se debe	You must(n't)
57. (no) se puede	You can('t)
58. Hay que	You have to
59. Está prohibido	It is forbidden
60. Escuchar en clase	To listen in class
61. Usar el móvil en clase	To use your phone in class
62. Llevar joyas	To wear jewellery
63. Llevar maquillaje	To wear make up
64. Llevar zapatillas de deporte	To wear trainers
65. Dañar las instalaciones	To damage the facilities
66. Respetar el turno de palabra	To wait your turn to speak
67. Comer chicle	To chew gum
68. Hacer los deberes	To do homework

¿Qué quieres hacer en el futuro?	What do you want to do in the future?
69. Quiero / Me gustaría ...	I want / I would like ...
70. Aprobar mis exámenes	To pass my exams
71. Sacar buenas notas	To get good grades
72. Hacer un aprendizaje	To do an apprenticeship
73. Buscar trabajo	To look for a job
74. Trabajar como voluntario	To work as a volunteer
75. Viajar por el mundo	To travel the world
76. Tener hijos	To have children
77. Casarme	To get married
78. Aprender a conducir	To learn how to drive
79. ¿Qué vas a ser en el futuro?	What are you going to be in the future?
80. Voy a ser ...	I am going to be ...
81. Médico/a	Doctor
82. Profesor(a)	Teacher
83. Abogado/a	Lawyer
84. Mecánico	Mechanic
85. Fontanero	Plumber
86. Bombero	Firefighter
87. Veterinario	Vet
88. Peluquero	Hairdresser

9.11 My School Life – Vocabulary List

Cabot Learning Federation

¿Cuál es tu asignatura favorita?	What is your favourite subject?
El inglés	English
El español	Spanish
El francés	French
El teatro	Drama
El dibujo	Art
El deporte	P.E.
La informática	I.C.T. (Computer Studies)
La música	Music
La tecnología	D.T.
La geografía	Geography
La historia	History
La religion	R.S. (Religious Studies)
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 punctual	(to) be on time
Comer chicle	(to) chew chewing-gum
Hacer los deberes	(to) do homework

¿Cuál es tu opinión?	What is your opinión?
Es / no es	It is/It is not
interesante	Interesting
Práctico	Practical
Útil / Ínutil	Useful/not useful
Fácil / Difícil	Easy/difficult
Aburrido	Boring
Emocionante	Exciting
Creativo	Creative
Importante	Important
demasiado	Too
muy	Very
bastante	Quite
Un poco	A bit (a little)

¿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 camisa	A shirt
Una camiseta	A t-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

9.11 My school Knowledge Organiser

School – Subjects, uniform and time
Future plans & jobs

The present tense	AR verb	ER verb	IR verb
yo (I)	-o	-o	-o
tu (you)	-as	-es	-es
él/ella (he/she)	-a	-e	-e
nosotros/as (we)	-amos	-emos	-imos
vosotros/as (you all)	-áis	-éis	- ís
ellos/ellas (they)	-an	-en	-en

The future tense in Spanish

You can talk about the future by using the **near future** tense.
Use part of the verb IR + a + the infinitive to say what you are **going** to do.

Este tarde **voy a jugar** al tenis. *This evening I am going to play tennis.*
Mañana Paul **va a hacer** un pastel. *Tomorrow Paul is going to make a cake.*

You can also use the following phrases with an infinitive to refer to the future.
Quiero = I want
Me gustaría = I would like
Quisiera = I would like
Espero = I hope

Adjectives describe nouns e.g. a **black** blazer.

In Spanish, adjectives normally go after the words they are describing e.g. una camisa azul (a blue shirt) and they have to agree with the noun they are describing.

Adjectives must agree with the noun (or pronoun) they describe in gender and in number.

This means that if the noun an adjective describes is feminine, the adjective must be feminine e.g. una chaqueta negra (a black blazer).

If that same noun is also plural, the adjective will be feminine AND plural as well e.g. las medias negras (black tights).

Comparatives – to express more or less than
... es más...adjective...que - is more...adjective...than
... es menos ...adjective ....que - is less...adjective... than
... es tan...adjective....como – is as...adjective...as
For example:
El inglés es **más** *interesante* ***que*** *la geografía. (English is more interesting than Geography)*
La historia es ***menos*** *activa* ***que*** *la educación física. (History is less active than PE)*
El francés es ***tan*** *difíil* ***como*** *las matemáticas. (French is as difficult as maths).*

Festivals Year 9.12 Spanish – Knowledge Organiser

3 Time frames

Cabot Learning Federation

The preterite tense of **regular verbs** is formed on an infinitive stem with the following endings:

Infinitive:	hablar	comer	vivir
Stem:	habl-	com-	viv-
Yo (I)	hablé	comí	viví
Tú (you)	hablaste	comiste	viviste
él/ella/usted (he/she/you)	habló	comió	vivió
Nosotros (We)	hablamos	comimos	vivimos
Vosotros (You all)	hablasteis	comisteis	vivisteis
ellos/ustedes (They/ you all)	hablaron	comieron	vivieron

Ser / Ir (To be /to go)

fui (I was / I went)
Fuiste (You were / You went)
Fue (he/she was // he /she went)
Fuimos (we were / we went)
Fuisteis (you all were / you all went)
Fueron (they were /they went)

The future tense of **regular verbs** is formed adding the endings **e, as, a emos, eis, an** to the infinitive.

FUTURE SIMPLE			
Person	Verbs		
	Hablar	Comer	Vivir
Yo	hablar - é	comer - é	vivir - é
Tú	hablar - ás	comer - ás	vivir - ás
Usted, él, ella	hablar - á	comer - á	vivir - á
Nosotros-as	hablar - emos	comer - emos	vivir - emos
Vosotros-as	hablar - éis	comer - éis	vivir - éis
Ustedes, ellos, ellas	hablar - án	comer - án	vivir - án

Regular verbs – present tense endings			
	AR verbs	ER verbs	IR verbs
I	o	o	o
you	as	es	es
he/she/it	a	e	e
we	amos	emos	imos
you(pl)	áis	éis	ís
they	an	en	en

9.12 Festivals
Spanish Vocab List

Cabot Learning Federation

¿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

¿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
Insoportable	Unbearable
Impactante	Striking

¿Qué pasa en los encierros / las corridas de toros ?	What happens in the bull running / bull fighting?
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?	What happens in 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

9.12 Geography & History
Spanish Vocab List

Cabot Learning Federation

La geografía	Geography
El país	The country
La región / la comunidad	The region
La ciudad	The city
El pueblo	The town/ village
La costa	The coast
Las islas	The islands
El interior	The inland regions

La historia	History
Castellano / Español	Spanish language
La Reconquista	Period of time when the Christian kingdoms "reconquered" the península from the Muslims (Moors).
Moros	Moors – Muslim inhabitants of modern-day Spain in
Conquistadores	Conquerors of American territories in the 16th century
La Colonización	Colonisation of the Americas
La Guerra Civil Española	The Spanish Civil war between 1936 and 1939
La Dictadura fascista	The fascist dictatorship in Spain between 1939 and 1975
La Transición	Transition into democracy after the dictatorship
La monarquía parlamentaria	The current political system in Spain: a parliamentary monarchy, like in the UK

El lenguaje de todos los días	Everyday language
¡Hola!	Hello
Buenos días	Good morning
Buenas tardes	Good afternoon
Buenas noches	Good night
¿Cómo te llamas?	What's your name?
Me llamo...	My name is...
¡Adiós!	Goodbye
Hasta luego / hasta la vista	See you later
Por favor	Please
Gracias	Thank you
Muchas gracias	Thanks a lot
De nada	You are welcome
Perdone / Perdón	Excuse me / Apologies
Lo siento	I'm sorry
¿Habla inglés?	Do you speak English?
Hablo un poco de español	I speak a bit of Spanish
No entiendo	I do not understand
¿Dónde hay un buen restaurante?	Where is a good restaurant?
¿Dónde está el centro / la playa?	Where is the centre / the beach?
Me he perdido	I am lost
Busco un hotel / un hospital / un banco	I am looking for a hotel / hospital / bank
Busco la estación / el aeropuerto / la parada de bus	I am looking for the station / airport/ bus stop
¿Me podría sacar una foto?	Could you take a picture?
¡Cuidado!	Be careful!
¡Vamos!	Let's go!

History – Year 9 Knowledge Summary

What was life like in Nazi Germany?

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).

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	**Nature**: What is the type of source? **Content**: What does it tell us? **Origin**: Who wrote it? When? Where? **Purpose**: Why was the source made?

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

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

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.

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.

People owned **fridges** so food could be kept fresh for longer. **Before this food was stored in a cool rom called a larder.** Shopping was done at **lots of smaller shops** rather than one supermarket.

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**.

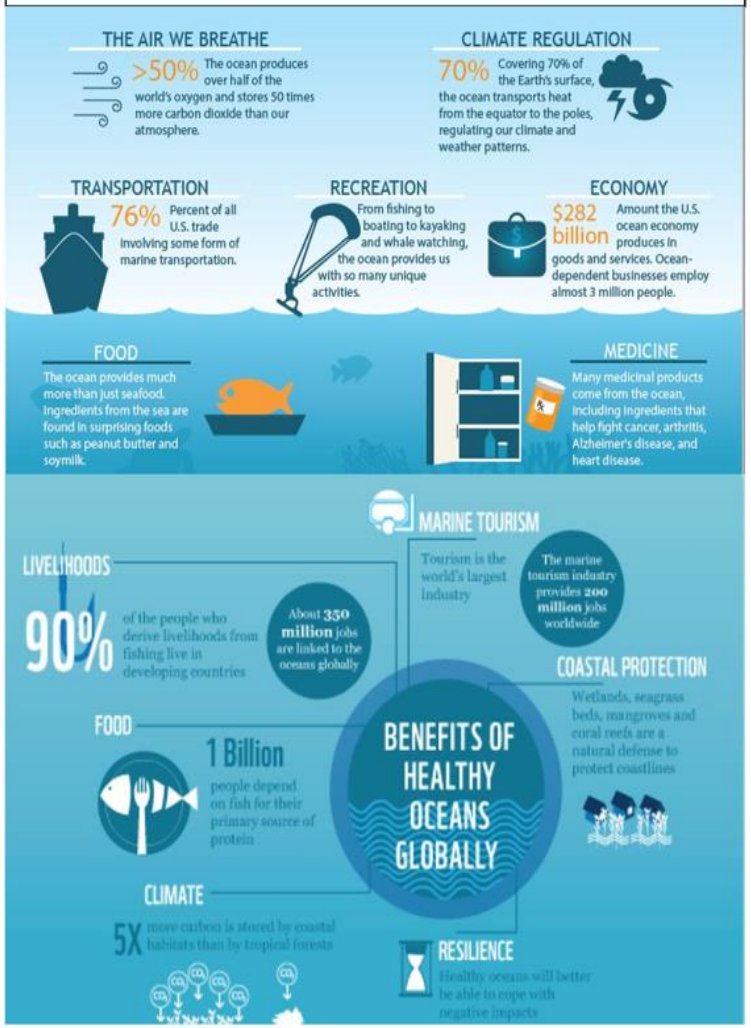
The number of families with **cars increased a lot** during the 60's. **Motorways were built** to allow people to travel between different parts of the country.

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.

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 degrage 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-calcifying 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

9.1 Decision Making Enquiries

Sea level rise in The Maldives

Global sea levels are rising due to:

- Global warming is melting the polar ice caps
- Global warming causes thermal expansion of the world's oceans

This is threatening the future of The Maldives, where much of the islands are less than 2m above sea level.

The Maldives are considering 3 options for their long-term future:

1. Evacuate the islands and move the population elsewhere.
2. Build sea walls around the islands to protect them from the rising water.
3. Reclaim land from the shallow seas around the islands, by dredging sand from the lagoons and building up the height of the islands.

Stakeholders are divided over the issue. Many do not want to lose the unique culture of the Maldives by moving elsewhere. Others do not want to change forever the delicate ecosystems in the island chain.

The UK's energy mix

The UK's energy mix (where we get our energy from) has changed a lot over the past 30 years. Fossil fuels - gas, coal and oil – still account for more than 50% of our energy mix, but renewable sources of energy such as solar and wind power have been steadily increasing.

Cleve Hill is a proposed solar park in Kent, with construction due to begin in 2022. It would be the UK's biggest solar farm and would generate enough electricity for 91,000 homes.

Stakeholders are divided over whether the solar park should go ahead.

- Some think that it is an essential step in moving the UK away from dependence on the fossil fuels that are causing climate change.
- Some are concerned about the impact on the habitat of local wildlife and migrating birds in particular.
- Some are in favour due to the huge local investment and jobs that will be created.
- Others are opposed due to the 'eyesore' effect.

Economic impacts are those that affect money, business and jobs.

Social impacts are those that affect people and communities; families, health, education, communication.

Environmental impacts are those that affect the quality of the environment, pollution and the balance of the ecosystem

Sustainability is when materials and resources are used in a way which balances the needs of people in the present with the need to maintain something in to the future.

Stakeholders are individuals and groups of people with a particular interest in an issue.

Flood management on the Somerset Levels

The Somerset Levels have always been prone to flooding. However, in 2014 the floods were so bad that huge amounts of damage were caused to farms and homes. Since then, the debate has continued: should the Somerset Council spend more on building flood defences on the Levels?

- Farmers and local residents want the flood defences to protect their homes and work places.
- The Council knows that the defences – dredgers and building levees – are expensive, leaving less in the budget for schools and other services.
- Some environmentalists think that dredging rivers won't work in the long term, will disturb the natural habitat of wildlife and may even make the floods worse.

War: When people disagree Knowledge Organiser

NEED TO KNOW WORDS

Justice	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:

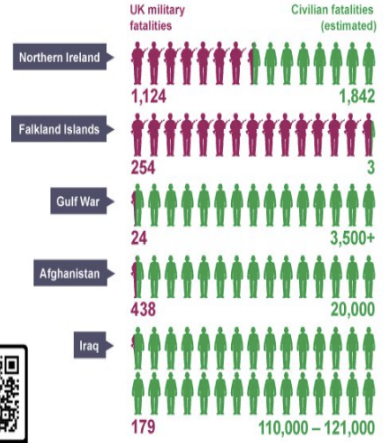
- attack or invade another state, to **gain territory or resources**
- **resist** such an attack or invasion by an aggressor
- **protect another** state from attack by an aggressor
- **impose domination or political change** on another state, or to resist such domination
- **challenge a threat** to 'essential national interests' by another state
- counter perceived threats from a **different ideology, religion or ethnic group**
- defend the **national honour** when under threat

War can also occur internally within a state between organised groups. This is known as **civil war**.

SCAN ME

Who or what are the casualties of conflict?

Estimated number of military and civilian fatalities in major UK conflicts since World War Two



The main casualties of war include:

- 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

What does Christianity teach about war and peace?

Live by the sword, die by the sword Matthew 26		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	nation shall not lift up sword against nation, neither shall they learn war any more. Isaiah 2:4	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

SCAN ME

What are the two types of Jihad?

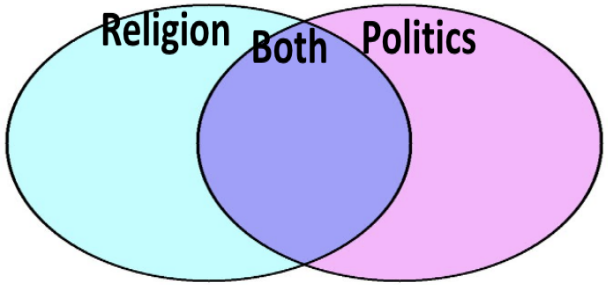
SCAN ME

Greater	Lesser	
The struggle against oneself	Non-violent	Violent
	The word of justice in front of the oppressive ruler	To defend, not attack
Spiritual	Verbal	Physical (military)
Against yourself	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 of, 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

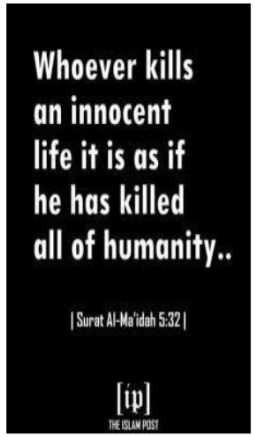
Greater jihad: The personal, inward struggle of all Muslims to live in line with the teachings of their faith.

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)



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 Cortés, conquered the Aztec Empire.

Cortés 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

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

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.

Speciesism – Peter Singer

Peter Singer is a philosopher and ethicist who is known for his work in animal rights

Contributions to change

- 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.

Significance

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:

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.

Activism:

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.

Humanities IS Term 4:

Please complete the questions for Geography, History and RE (RWV) for your Humanities IS. Your humanities teacher will tell you which day it is due a week before. It will be checked and marked in that lesson.

Year 9 Geography Term 4:

Using the Why should we care about the oceans Page:

1. What is sustainable fishing?

2. What is a gyre?

3. What is biodiversity?

4. What is ocean acidification?

5. What are the impacts of ocean acidification?

Year 9 History Term 4:

Using the What was life like in Nazi Germany Knowledge Organiser Page:

1. What happened on the 30th January in 1933?

2. What did the Enabling Act allow?

3. What does abdication mean?

4. Who was the Kaiser of Germany?

5. What was the League of German Maidens?

Year 9 RE (RWV) Term 4:

Using the War: When people disagree Knowledge Organiser Page:

1. What does justified mean?

2. List two causes of war.

3. What is greater jihad?

4. What is lesser jihad?

5. What is Islamophobia?

Humanities IS Term 5:

Please complete the questions for Geography, History and RE (RWV) for your Humanities IS. Your humanities teacher will tell you which day it is due a week before. It will be checked and marked in that lesson.

Year9 Geography Term 5:

Using the Decision Making Enquiries Knowledge Organiser Page:

1. Give a reason sea levels are rising.

2. What are the 3 options the Maldives are considering for sea levels rising?

3. What is the UK's energy mix?

4. How much electricity could the UK's biggest solar farm produce?

5. Why are some divided on whether a solar park should be built?

Year 9 History Term 5:

Using the Were the 1960s a decade of 'revolution' Knowledge Organiser Page:

1. What does appliance mean?

2. What is a bungalow?

3. What did many homes have in the 1960s?

4. What was clothing like in the 1960s?

5. How was food stored before fridges?

Year 9 RE (RWV) Term 5:

Using the War: When people disagree Knowledge Organiser Page:

1. What is a denomination?

2. What is the golden rule?

3. What is a missionary?

4. What is apostasy?

5. What does persecution mean?

Humanities IS Term 6:

Please complete the questions for Geography, History and RE (RWV) for your Humanities IS. Your humanities teacher will tell you which day it is due a week before. It will be checked and marked in that lesson.

Year 9 Geography Term 6:

Using the asking Enquiries Knowledge Organiser Page:

1. What is a stakeholder?

2. What are the Somerset Levels prone to do?

3. What do we mean by 'social' in geography?

4. What do some environmentalists think about dredging rivers?

Year 9 History Term 6:

Using the Democracy in Britain Knowledge Organiser Page:

1. What does casual mean?

2. What does formal mean?

3. Was health care free in the 1960s?

4. What was built in the 1960s for cars?

5. What band was popular in the 60s?

Year 9 RE (RWV) Term 6:

Using the Changemakers: How does belief inspire change Knowledge Organiser Page:

1. What does activism mean?

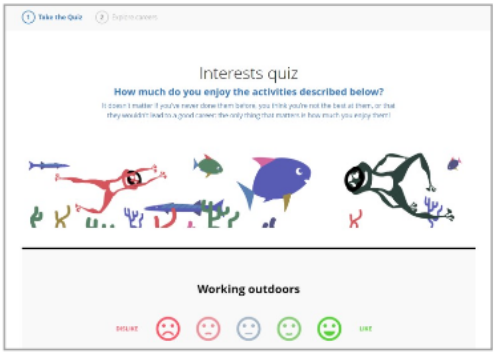
2. What is civil disobedience?

3. What is social justice?

4. Give examples of activism.

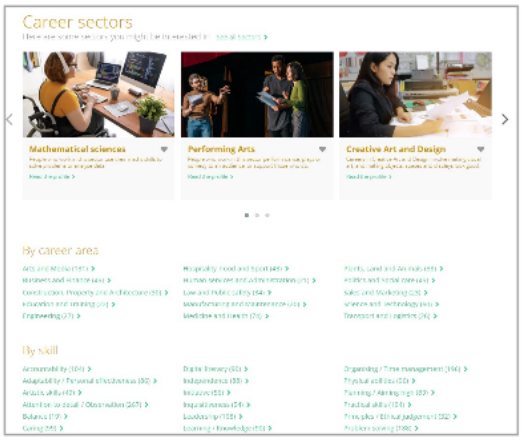
5. What does Islam teach about prejudice and discrimination?

CAREERS AT HPA

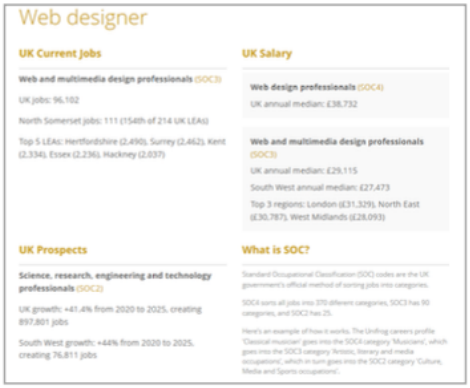


Our Careers guidance and provision at Hans Price offers a wide range of experiences and opportunities to inform and develop aspirations for the future. In addition to a careers featuring in our SPACE curriculum and weaving through all subjects taught at Hans Price, all students use UniFrog to support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

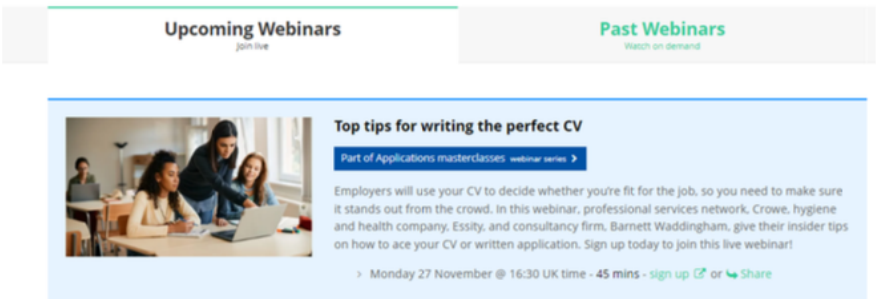
Unifrog is the universal destinations platform and is designed to support learners in making the most informed decisions about their futures. It has a range of tools that are suitable for all year groups. Each student has their own account where they can explore all the career and next step options available 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



You can use this page for your artwork if you need paper

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.

Try some new clubs this term