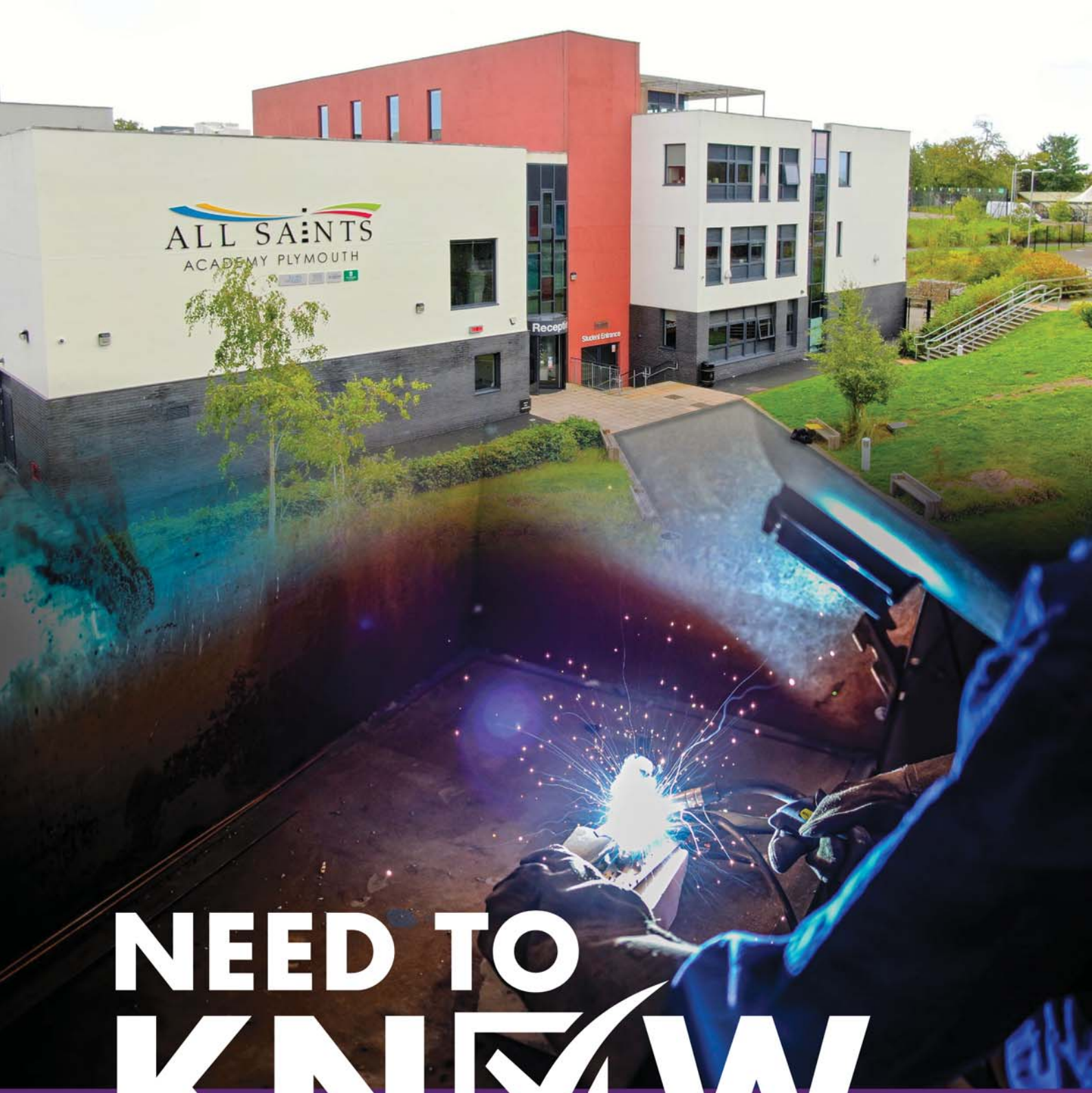


NEED TO KNOW BOOK

Year 11
Autumn Term 2024

ALL SAINTS
ACADEMY PLYMOUTH

Table of Contents

Week A

Period	Monday	Tuesday	Wednesday	Thursday	Friday
Tutor					
1					
2					
3					
4					
5					
6 or Extra Curricular					

Week B

Period	Monday	Tuesday	Wednesday	Thursday	Friday
Tutor					
1					
2					
3					
4					
5					
6 or Extra Curricular					

Homework Expectations

You are expected to compete up to 1hour and 30 minutes of Homework per night. This is split into 3 subjects at 30mins each.

	3 x 30 Minute Sessions		
	Subject 1 30 mins	Subject 2 30 mins	Subject 3 30 mins
Monday	Science	Science	
Tuesday	English	English	French
Wednesday	History/Geography/Travel & Tourism		Maths : Sparx
Thursday	Option A	Option A	Maths : Sparx
Friday	Option B	Option B	Maths : Sparx

Where is my homework?

Maths sparx

You maths homework is found at www.sparxmaths.uk.
You will complete your Compulsory Homework on a Monday.
If you have completed over 80% and are stuck on your last few questions, your teacher will help you on Tuesday.

Science Educake

Your Science homework can be found at www.educake.co.uk. You will answer a series of questions once a week. When it comes to revising, you will have the option of picking a topic, reading an overview, and taking a quiz.

Other Subjects:

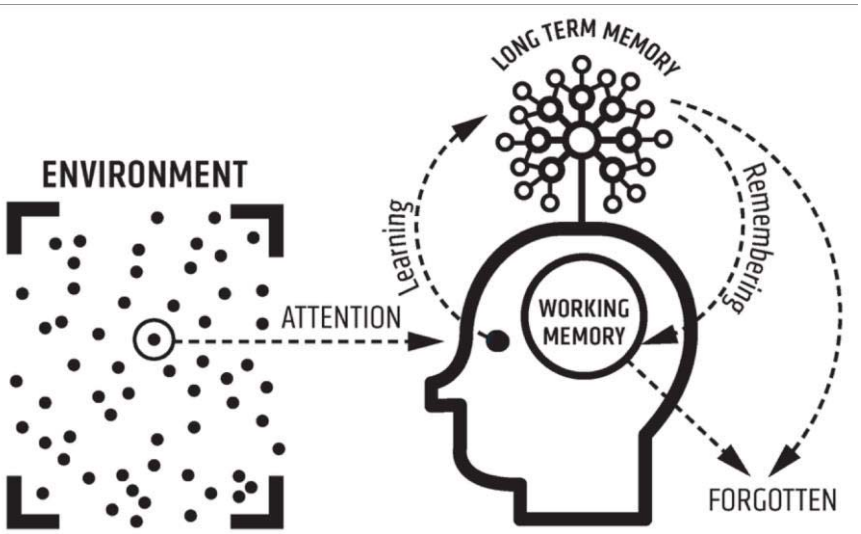
Homework for these subjects will be found in your Google Classroom in the form of a quiz. These quizzes are to test that you have learned the knowledge in your Need to Know booklet. We have high expectations of you and expect students to try their best and achieve the best possible marks. We will give rewards for excellent attainment and we will help everyone achieve by using after school interventions to make sure no one falls behind.

At All Saints, we are organised and don't make excuses for ourselves. If we know we have evening plans, we complete our homework the night before to make sure we are free to go to our planned event. We always want the best for ourselves and my teachers want the same.

Memory

Your memory is split into two parts: the working-memory and the long-term memory. Everybody's working-memory is limited, and can therefore become easily overwhelmed. Your long-term memory, on the other hand, is effectively limitless.

You can support your working memory by storing key facts and processes in long-term memory. These facts and processes can then be **retrieved** to stop your working memory becoming overloaded.

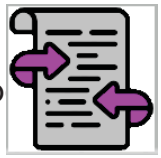


Need to know booklets are a key way to help you learn. Each booklet has the key information that needs to be memorised to help you master your subject and be successful in lessons.

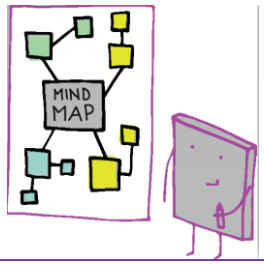
There is strong scientific evidence from cognitive psychology that shows the benefits of **self-quizzing** in promoting **retrieval strength**. This is your ability to quickly recall key facts related to your subject or topic

How should I self-quiz and how often?

There are lots of different ways to learn the material in your need to know b

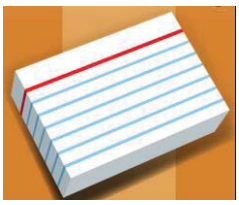


You could:



Draw a mind map, jotting down everything that you can remember from the need to know booklet.

Cover up one section of the need to know booklet and try and write out as much as you can from memory.



Make flash cards based on the need to know booklet and ask someone to quiz you.

SENTENCES.
HAND
ARTICULATE.
PROJECT
Eye contact

Make up mnemonics to help you remember key facts, then write these out from memory.

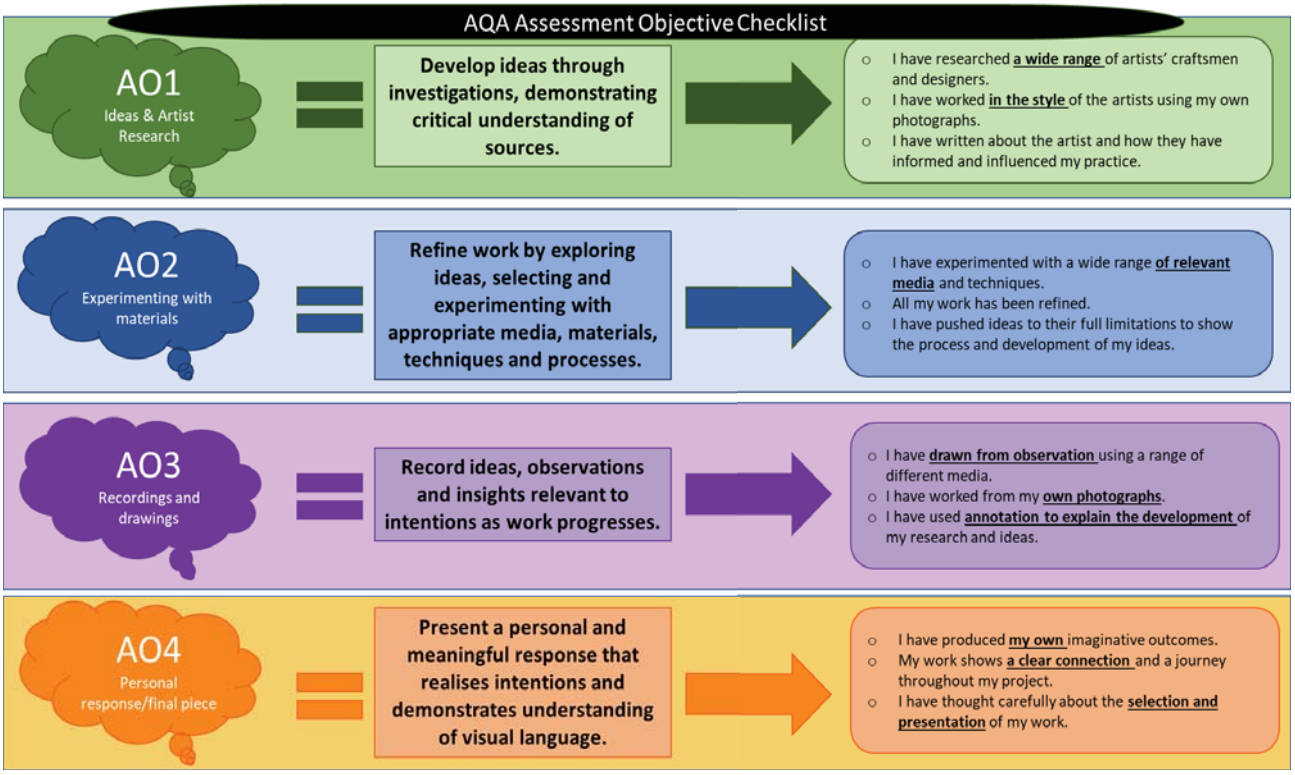
Making revision notes and self-quizzing will help you be a more successful learner.

Visit our amazing careers section of the ASAP website or use your UNIfrog account to help you make those all important decisions for your future.

Post 16 pathways of Plymouth — Sixth forms — Apprenticeships — Employment — Resources

Support — Opportunities — Choosing a career — Parents guide —Writing a CV— Employability skills

Year 11: My Identity and Art



Minimum Task Checklist for 'My Identity and Art'	Number of Page (Suggested minimum)
Mind map on chosen theme - Word eye turned into title page	1
Mood board of collected ideas on chosen theme - annotate	1
Initial ideas proposal – Statement of intent	1
Artist research – Frida Kahlo	2
Recording through observation – Frida Kahlo grid drawing with collage flowers	1
Experiment and develop 1	4 - 6
Artist research 2	1
Recording through observation 2	4
Experiment and develop 2	6
Experiment and develop 3 (creatively and individually) 3	2
Artist research 3	1
Experiment and develop 4	6
Experiment and develop 5 refine ideas before final piece development	4
Collect ideas for your final piece – Mood board or recorded observations or photographs	4
Final ideas plan	2
Annotate throughout	Every page
Final piece	A2
Evaluation	1

		Assessment Objective 1	Assessment Objective 2	Assessment Objective 3	Assessment Objective 4
Marks		**Develop ideas through investigations, demonstrating critical understanding of sources.** **RESEARCH-IMAGES & ARTISTS**	**Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes** **EXPERIMENTS WITH MEDIA**	**Record ideas, observations and insights relevant to intentions as work progresses.** **IDEAS, OBSERVATIONAL DRAWINGS & EXPLANATIONS**	**Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language** **FINAL IDEA, FINAL PIECE, LINKS w. ARTISTS**
9	**24 Convincingly**	An **exceptional** ability to effectively develop ideas through creative and purposeful investigations. An **exceptional** ability to engage with and demonstrate critical understanding of sources.	An **exceptional** ability to thoughtfully refine ideas with discrimination. An **exceptional** ability to effectively select and purposefully experiment with appropriate media, materials, techniques and processes.	An **exceptional** ability to skillfully and rigorously record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	An **exceptional** ability to competently present a personal and meaningful response and realise intentions with confidence and conviction. An **exceptional** ability to demonstrate understanding of visual language.
	23 Clearly				
	22 Adequately				
	21 Just				
8	**20 Convincingly**	A **highly developed** ability to effectively develop ideas through creative and purposeful investigations. A **highly developed** ability to demonstrate critical understanding of sources.	A **highly** developed ability thoughtfully refine ideas. A **highly** developed ability to effectively select and purposefully experiment with appropriate media, materials, techniques and processes.	A **highly** developed ability to skillfully record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	A **highly** developed ability to competently present a personal and meaningful response and realise intentions with confidence and conviction. A **highly** developed ability to demonstrate understanding of visual language
	19 Clearly				
7	**18 Adequately**				
	17 Just				
6	**16 Convincingly**	A **consistent** ability to effectively develop ideas through purposeful investigations. A **consistent** ability to demonstrate critical understanding of sources.	A **consistent** ability to thoughtfully refine ideas. A **consistent** ability to effectively select and purposefully experiment with appropriate media, materials, techniques and processes	A **consistent** ability to skillfully record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	A **consistent** ability to competently present a personal and meaningful response and realise intentions. A **consistent** ability to demonstrate understanding of visual language.
5	**15 Clearly**				
	14 Adequately				
4	**13 Just**				
	12 Convincingly	A **moderate** ability to effectively develop ideas through purposeful investigations. A **moderate** ability to demonstrate critical understanding of sources.	A **moderate** ability to thoughtfully refine ideas. A **moderate** ability to effectively select and purposefully experiment with appropriate media, materials, techniques and processes.	A **moderate** ability to skillfully record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	A **moderate** ability to competently present a personal and meaningful response and realise intentions. A **moderate** ability to demonstrate understanding of visual language.
3	**11 Clearly**				
	10 Adequately				
	9 Just				
2	**8 Convincingly**	**Some** ability to develop ideas through purposeful investigations. **Some** ability to demonstrate critical understanding of sources.	**Some** ability to refine ideas. **Some** ability to select and experiment with appropriate media, materials, techniques and processes.	**Some** ability to record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	**Some** ability to present a personal and meaningful response and realise intentions. **Some** ability to demonstrate understanding of visual language.
	7 Clearly				
	6 Adequately				
	5 Just				
1	**4 Convincingly**	**Minimal** ability to develop ideas through investigations. **Minimal** ability to demonstrate critical understanding of sources.	**Minimal** ability to refine ideas. **Minimal** ability to select and experiment with appropriate media, materials, techniques and processes.	**Minimal** ability to record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses.	**Minimal** ability to present a personal and meaningful response and realise intentions. **Minimal** ability to demonstrate understanding of visual language.
	3 Clearly				
X	**2 Adequately**				
	1 Just				
	0	Work **not** worthy of any marks.			

LO1 1.1- Factors which affect the decision to have children When is the best time to have a child?	
Relationship between partners	Couples should have been together long enough to form a happy, stable, caring and secure relationship. They should be able to trust, respect and be loyal to each other. Couples should be able to cope with demands of having a child.
Finance	Raising a child is expensive (i.e. feeding, clothing, housing, entertaining) **Factors to consider (Finance):** Is where they live big enough (enough bedrooms) to accommodate a child? Can they afford child care or a career break? Can they afford to provide a warm, clean, safe and secure home? Can they afford a child?
Parental Age (can affect fertility and suitability)	**Age of mother–** After the age of 35 quality of eggs declines. **Age of father–** Men produce sperm all of their adult life, so are capable of fathering children. **Factors to consider (Age):** Are they mature enough to take on responsibility of a child? Are they willing to change their lifestyle for a baby? Are they fit/healthy enough to have a child? Are they 'running out of time' due to fertility issues for older women?
Peer pressure/ social expectations	People can feel pressured if their friends are having babies or if their family expects them to.
Genetic counselling for hereditary conditions	Genetic disorders are inherited from either the mother of father, these include: -Down's syndrome - Cystic fibrosis - Sickle cell anaemia - Muscular dystrophy Genetic counselling (genetic tests) offered if there is a family history of birth defects, genetic disorders or some forms of cancer. Other reasons include: Mother has had repeated miscarriages Blood relationship between partners (cousins)

LO1 1.2– Pre-conception health How can couples ensure their health positively impacts the baby they conceive?	
Diet (what should parents eat)	- Eat a healthy diet (e.g. at least 5 portions of fruit and vegetables) - Reduce sugar intake- Risk of diabetes - Avoid foods at risk of food poisoning (e.g. raw meat) - Women should take FOLIC ACID during pregnancy to reduce risk spina bifada
Exercise	- Being fit helps a mother cope with pregnancy - Helps to maintain fitness and well-being
Healthy weight (dangers of being overweight)	- Being overweight can affect fertility and ovulation - Can increase likelihood of needing a caesarean - Being overweight can lead to diabetes
Smoking / alcohol / recreational drugs	- Men who smoke or drink may have a lower sperm count - Risk of premature birth, miscarriage, still birth and foetal abnormalities - Women are advised to avoid alcohol - Drugs can lead to addiction/fertility issues - Drugs should not be taken in the month prior to conception
Up-to-date immunisations	- Immunisations are good for women's health to avoid specific illnesses - Prevent risk of rubella - Genetic screening– be aware of genetic conditions they are at risk of

LO1 1.3– Roles and responsibilities of parenthood– What must a parent provide?			
Food	Food must provide the right nutrients to have energy for growth and development.	Shelter and Warmth	Housing must be safe and provide warmth. Damp conditions can lead to asthma and chest conditions.
Clothing	Clothing that fits, is clean and for all weather conditions.	Rest/sleep	Rest and sleep is needed for a child's wellbeing, learning, growth and development.
Love and nurture	Helps a child to feel supported and thrive. Supports social and emotional development.	Socialisation/ Customs / Values	Children can be taught understand social acceptable behaviour. Parents act as role models.

LO1 1.4 To recognise and evaluate methods of contraception, their efficiency and reliability





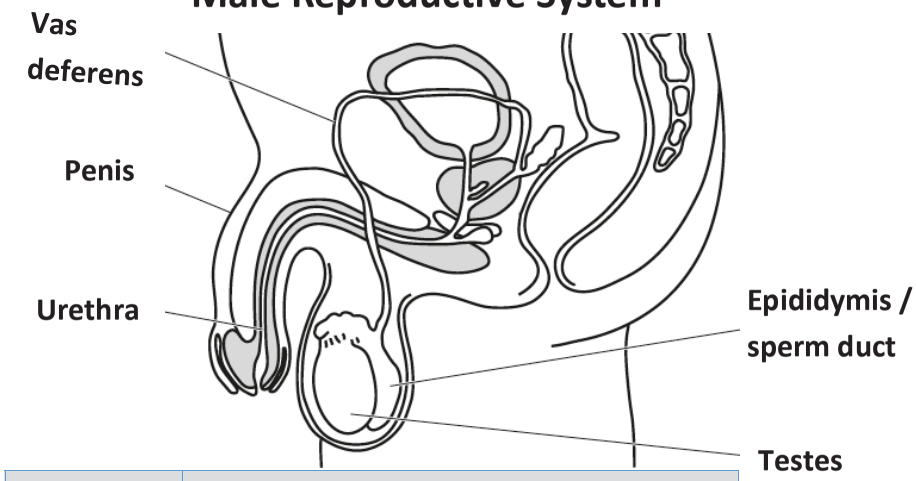





Method	Description	How effective?	Advantages	Disadvantages
Male condom (Barrier method)	Latex sheath placed onto erect penis before contact with vagina	98% effective if used correctly	- Widely available / sometimes free - Protects against many STIs - No serious side effects	- Condom can split or come off - Can only be used once - Sex might have to be interrupted
Female condom (Barrier method)	Polyurethane sheath put inside vagina before contact with penis, creates barrier between sperm and cervix	95% effective if used correctly	- Widely available to buy - Protects against many STIs - No serious side effects	- Condom can split or come off - Can only be used once - Expensive - Sex might have to be interrupted
Diaphragm or cap (Barrier method)	Dome shaped piece of latex, covers the cervix. Inserted into vagina before sex, used with spermicidal gel to kill sperm.	92% effective if used correctly	- Inserted by woman herself - Can be washed and reused - Can be fitted in advance of sex	- A GP/nurse must fit for correct size - Little protection against STIs - Takes time to learn how to use
Combined pill (Contraceptive pill)	Tablet containing hormones (oestrogen and progestogen) that prevent ovulation and sperm reaching egg.	99% effective if used correctly	- Highly effective if taken as instructed - Reduces period pain and can prevent heavy, painful periods - Can protect against ovary, womb and colon cancer - Doesn't interrupt sex	- Woman needs to remember to take at same time (inconvenient) - No STI protection - Woman can still become pregnant if sick or they have diarrhoea (or forget) **Combined pill=** Mood swings, headaches and weight gain **(side effects)** **Progestogen pill=** Spotty skin, tender breasts and irregular periods **(side effects)**
Progestogen-only pill (Contraceptive pill)	Tablet containing progestogen only. Taken daily, within a three hour time period. Thickens mucus in the cervix, preventing sperm contacting the egg.	99% effective is used correctly		
Intrauterine device/ system (IUD or IUS)	A small, t-shaped plastic device inserted into the uterus by doctor/nurse.	99% effective **if fitted** correctly	- Do not have to think about contraception - Doesn't interrupt sex - Provides some protection against some cancers and infections	- Has to be fitted by a doctor - Insertion can be painful - No STI protection
Contraceptive injection	Injection every few weeks/12 weeks.	99% effective if used correctly		- Can cause mood swings, headaches, weight gain and tender breasts - No STI protection
Contraceptive patch	Worn on the skin, introduces hormones into the body. Thickens mucus in cervix.	99% effective if used effectively		- Can cause headaches, raised blood pressure and blood clots - No STI protection
Contraceptive implant	A small tube inserted in the skin of woman's upper arm.	99% effective if used correctly		- Swelling or bruising after insertion - Periods may be heavier - No STI protection
Natural methods (Family planning / withdrawal method)	Woman understands when she is fertile and abstains from sex on these days. Man withdraws before ejaculating.	98% effective **if understood** **Withdrawal= Unreliable**	- Does not cost anything - No side effects - Compatible with all cultures/ faiths	- Takes time for woman to learn - Can't have sex without condom on fertile days - Withdrawal method is unreliable as semen can be released before ejaculation
Emergency contraceptive pill	Pill taken within 24 hours or up to 72 hours after unprotected sex	24 hrs = 98% 72 hrs = 52%	- Effective if taken within 24 hours - Widely available / sometimes free	- Vomiting and diarrhoea makes it ineffective - May cause headaches - No STI protection

LO1 1.5 The structure and function of male and female reproductive systems

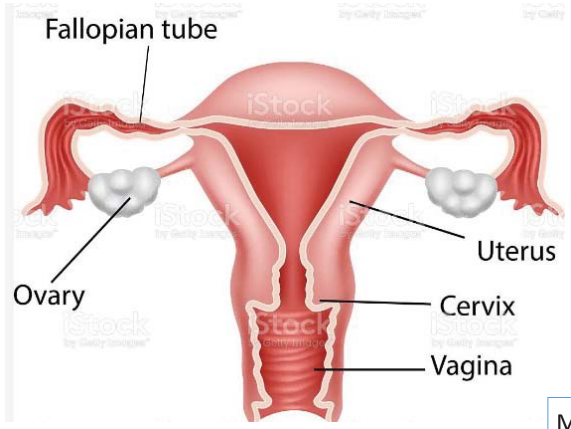
Male Reproductive System



Structure	Function
Testes	Male reproductive glands where sperm and
Epididymis / sperm duct	Sperm duct system consists of epididymis which stores the sperm.
Vas deferens	Muscular tube which extends upwards of
Urethra	The tube insides the penis, carries both urine and
Penis	Involved in sexual intercourse and

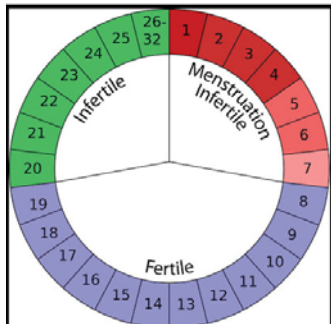
Signs and Symptoms of Pregnancy
Missed period or a very light period
Breast changes– Just before a period breasts feel larger or tender. Nipples may appear darker.
Passing urine frequently
Tiredness Nausea- 'morning sickness'

Female Reproductive System



Structure	Function
Ovaries	Controls the production of the hormones oestrogen and progesterone. Contains
Fallopian tube	Connect the ovaries to the uterus. Ovaries release an egg once a month to the tube.
Uterus (womb)	Uterus (also called the womb), a pear shaped muscular bag where the baby (foetus) develops.
Cervix	Strong ring of muscles between uterus and vagina. Keeps the baby securely in place in the womb during pregnancy. Cervix dilates during
Vagina	Muscular tube leading downwards, connects the cervix to outside of body. A males penis

Menstrual Cycle and Fertlisation of Egg



Menstrual cycle lasts 28 days.

Phases–
Blood loss or menstruation– normally lasting from day one to day five

Ovulation (release of an egg)
This occurs when an egg is released from one of the ovaries and travels along the fallopian tube. Normally takes place between day 12 to 14.

Conception/Fertilsation
This happens when a sperm penetrates an egg following ejaculation of sperm from the penis into the vagina. The sperm meets the egg in fallopian tube. Egg and sperm fuse together as one cell. Fertilised egg continues along fallopian tubes.

Implantation
Fertlised egg arrives in the uterus. Once attached firmly, conception has been achieved and the egg Is called an embryo.

LO2 Antenatal care and preparation for birth

LO2 2.1– Roles of health professionals supporting the pregnant mother	
Midwife (Low risk pregnancies)	Look after the pregnant woman and her baby throughout antenatal care, during labour and birth, and up to 28 days after birth. **First antenatal appointment between 8 to 12 weeks.** - Teach new and expectant mothers how to feed (e.g. breastfeeding), care and bathe baby - Monitor and support women during labour - Complete checks (examinations and screening) during pregnancy - Identify high risk pregnancies
Obstetrician (High risk pregnancies)	Handle complex births when there is: - Pre-existing acute (short term) or chronic (long term) medical condition in the mother that complicates pregnancy and/or birth - A complication **during** pregnancy or baby is distressed during labour
General Practitioner (GP)	Test to confirm the pregnancy. They will support mother by: - Answering questions and making referrals - Discuss specific issues with mothers health - Respond to emergency concerns or non-pregnancy illnesses - Provide postnatal medical care
Gynaecologist	A specialist in the female reproductive system and the ability to reproduce/fertility problems. - Give emergency care for problems in early pregnancy (e.g. abdominal pain or bleeding) - Termination of a pregnancy, including pre-assessment and counselling.
Paediatrician	A doctor specialising in care of babies and children. Attends all difficult births and checks the health of the baby.

2.3 Routine checks carried out at antenatal clinic, including scans
Check for STIs (chlamydia, gonorrhoea, syphilis) **Examine the uterus** (condition of cervix) and which way baby is facing **Baby's heartbeat** (normal heart rate is 100-160bpm) **Urine test–** Check for protein in urine (infection), STIs, diabetes and ketones

LO1 2.2– Importance of antenatal and parenting classes Preparing for labour and parenthood	
Mother Advice and Information on pregnancy, birth and parenthood	**Preparing for safe pregnancy and delivery by:** - Giving advice on staying fit and healthy through exercise and diet. - Provide information on various arrangements for labour and birth. - Create a birth plan - Give mother chance to ask questions to key professionals
Preparation of parents (mother and father or partner) **for labour**	Antenatal classes help to prepare for labour by: - Helping know what to expect during labour / contractions / breathing techniques - Know how to support the mother during labour so they feel useful - Can help father/partner feel more confident to talk through options on places to give birth/pain relief - Both parents will be aware of procedures that the mother may have to go through if birth is not straight forward—forceps or ventouse delivery
Role of the father/partner supporting the mother **throughout pregnancy and birth**	Give information on how to support and help through: - Massaging the back, shoulders or legs - Encouragement - Timing contractions - Learning relaxation and breathing techniques - Being emotionally supportive - Helping find a comfortable position - Give her rest - How to provide reassurance

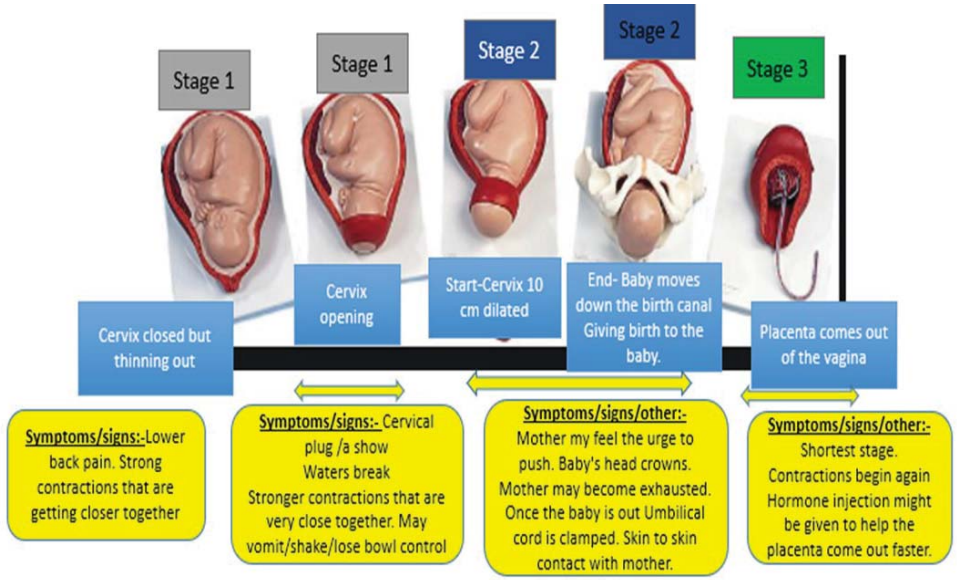
2.3 Routine checks carried out at antenatal clinic, including scans	
Weight Check– Establish mothers baseline (starting weight).	**Too much weight gained** = greater risk of pre-eclampsia **Too little weight gained** = baby might have stopped growing or illness in mother **Check that weight gain is steady** during pregnancy
Blood test– Women are tested for:	Anaemia **(lack of iron).** High blood pressure (diabetes) , Blood group (if needing a blood transfusion), German Measles (Rubella), Hepatitis B and C and HIV.
Ultrasound dating scan (done by sonographer)	Checks babies development at **8-14 weeks into pregnancy**, whether there is more than one baby, how far along the pregnancy is and if

LO2 Antenatal care and preparation for birth

2.4 Specialised diagnostic tests (to check the health of the baby)	
Ultrasound Anomaly Scan / **Mid-pregnancy scan**	Detailed scan carried out at **18-21 weeks of pregnancy**, checks for major physical problems. Scan looks at: - Bones - Heart - Brain - Spinal cord - Face - Kidneys - Eyes Sonographer will look for spina bifida and cleft lip
Nuchal translucency **(NT)** test	**Down's Syndrome screening** (estimate level of risk) Offered at **11-13 weeks**
Alpha fetoprotein **(AFP)** test	**Blood** taken from mother to check whether a baby might have **Spina Bifida.**
Chorionic villus sampling **(CVS)**	Checks for **Down's Syndrome.** Needle takes small **sample of placenta.** Carried out between **11-14 weeks.** **Can cause miscarriage or risk of infection.**
Amniocentesis	Screens for Down's Syndrome after **15 weeks of pregnancy**. Small **sample of amniotic fluid** taken from uterus. **Can cause miscarriage.**

2.6– The Three Stages of Labour

Stage 1– neck of the uterus opens	**Stage 2–** the birth of the baby	**Stage 3–** delivery of placenta and membranes

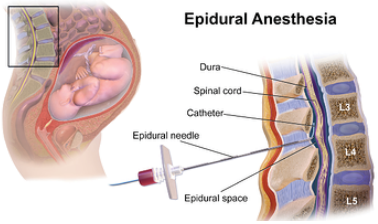


2.5 The choices available for delivery– Where can mothers give birth?		
	Advantages	**Disadvantages / Not advised when**
Hospital birth	- Mother may feel safer - Trained staff if a problem - Caesarean, delivery methods and all pain relief can be used - Can meet other mothers	- Less privacy - Less personal - Noisy - Risk of illness or infection - Not the same midwife
Home birth	- Familiar surroundings - Quiet/calm environment - Many people can be present for birth - Partner can spend more time with mother and baby - Privacy guaranteed before, during and after - Same midwife helping to build trust and relationship	- Should be avoided if complications or health problems (baby in incorrect position, pre-eclampsia) - Not advised for young mothers or first baby - Specialist support not immediately available (e.g. need for caesarean) - If the mother has health problems such as diabetes or obesity - If there is more than one baby
Domino Scheme (Home then hospital)	- Mother stays at home with community midwife for as long as possible and is then moved to hospital late for delivery - Returns home soon after with midwife - Greater feeling of control	- Specialist support not immediately available if there are complications - May feel anxious if having to rush to hospital - Not available in all areas
Private hospital / Independent midwife	- Likely to have excellent facilities - Easier to maintain privacy	- Can be very expensive

2.6 Methods of Delivery

Alternative methods of delivery may be needed during labour or planned in advance. They are only used when necessary. This is because: - There are concerns about the **baby's heart rate** - The **baby** is in an **awkward position** - The **mother** is **too tired** / exhausted

Type of Method	How the baby is delivered using this method?	Why the method might be used?
Forceps 	- **Large metal tongs** placed around baby's head - Used to turn the baby into the correct position - Used by **obstetrician** to gently ease head out to deliver	- Baby is distressed - Concerns over baby's heart rate - Baby is in awkward position - Mother is too tired to push / labour is taking too long
Ventouse 	- **Suction cup** is placed on a baby's head to assist delivery - Rubber cap gives gentle suction - Helps to pull baby out	- Used when contractions are not strong enough to push baby out - May bruise the baby's head but returns to normal
Elective / emergency Caesarean section 	- Starts with an **epidural** - Takes 40-45 mins - Mother normally awake - Carried out by **obstetrician** - Carried out in operating theatre - **Cut** made across the abdomen and women - Baby delivered / taken out through cut - Cut / opening is stitched up	- Baby is distressed - Baby is feet first (Breech position) - Baby is too large - Birth canal is too narrow - Excessive vaginal bleeding - Pre-eclampsia - Risk to the mother or baby's health - Mother is too tired to push / delivery is taking too long



2.7 Pain relief options

Type of pain relief	Advantages	Disadvantages / Potential side effects
Gas and Air (Entonox) Mix of oxygen and nitrous oxide, used **when contractions start**	- Does not harm the baby - Works very quickly - Easily breathed through mask - Mother controls intake	- Does not relieve all pain - Wears off quickly - Can make mother sick - Can make mother dizzy
Pethidine Used in **early labour** to help mother relax and rest	- Lasts for two to four hours - Useful in early stages of labour - Strong pain killer - Given by midwife	- Have to have injection - Can take 20 minutes to work - Can make mother sick, disorientated or sleepy - Can affect baby's breathing
Epidural Numbs the nerves that carry pain impulses. Used when a mother is in a very long or painful labour or is distressed.	- Can provide total pain relief - Does not cause sickness or drowsiness	**- TIME** Can take 10 minutes to give and 15 minutes to work - Mothers legs feel heavy - Risk of headache and sore back - Cannot walk **- TIME–** Longer second stage of labour as contractions may not be felt
TENS Machine Gives electrical stimulus that interferes with pain signals to brain. Helps mother to relax	-No side effects for mother or baby (Drug Free) - Quick and easy to use - Mother is in control and vary stimulus - Can be used at hospital or at home	- Cannot be used if mother has a pacemaker, epilepsy or heart problem - Shouldn't be used in early pregnancy.
Water Birth	- Can help mother relax - No side effects - Can be used at hospital or at home	- Limited number of pools available - Will have to be arranged ahead of time in birthing plan

LO3 Postnatal checks, postnatal provision and conditions for development

3.1 Postnatal checks of a new born baby

Straight after the birth the **doctor and/or midwife** carry out routine checks to see if the baby has physical prob-

APGAR Score Appearance (**Colour**) Pulse (**Heart beat**) Grimace (**Reflexes**) Activity (**Muscle tone**) Respiration (**Breathing**)	Evaluates **five vital signs** (see to the left). Baby is given a score. Score of 9 = healthy, normal score with no complications and only routine care needed.
Skin (check for birthmarks, these nornally disappear)	Salmon patches (stork marks) Mongolian spots Strawberry marks

Vernix- White greasy substance on baby's skin

Lanugo- Soft, fine hair. Disappears after a few days or weeks.

Weight- So the baby's weight can be tracked on centile charts. Important to check if baby is healthy and growing.

Head circumference– Used to check baby's development.

Fontanelle- Baby's head is checked for soft spots. Baby's skull is not fused until one year of age.

Eyes- Shine a light in eyes to check for cataracts.

Mouth/Tongue– Check is suckling reflex is working.

Feet– Toes counted and checked for webbing. Check for clubfoot.

Fingers– Counted and checked for webbing.

Hips– Check for dysplasia (problems with hips joints).

Genitals– Baby boys are checked to see if their testicles are in right place.

3.1 Postnatal checks– REFLEXES

Sucking reflex– If you gently touch the **baby's mouth** they will make **sucking motions.** This helps them to feed.

Rooting reflex– when a **baby's lips or head is touched**, the new-born will move their head to **search for mothers nipple** or teat to feed.

Grasp reflex– if you touch a **baby's palm** they will grasp your fingers with their fingers.

Startle reflex– if a **baby** wakes suddenly or hears a loud noise, they will **make a fist and stiff arms** away from their body.

Standing and walking reflex– when a baby is held upright with their feet on firm surface they will make stepping movements.

3.2 The specific needs of the pre-term (premature) baby– Born before week 37 of pregnancy and require medical help.

Premature babies are likely to have:
- Breathing difficulties as lungs are undeveloped
- Weak immune system, means infection more likely
- Inability to suck or swallow, difficulty to digest milk
- Problems regulating body temperature
- Low iron and calcium levels - Low blood sugar levels

Pre-term babies may need extra vitamins and minerals for growth.
They may be given special formula milk.
May be fed through a tube (IV) if too weak to feed normally.
May be placed into an incubator to supply oxygen,

Specific needs for premature babies- **Treatment for infection–** given antibiotics or medications
Breathing problems– May be put on incubator to help breathing. **Feeding problems–** May be fed through IV.

3.3 Postnatal provision available for the mother and baby and the postnatal needs of the family

Health visitor visit at 10 days-
- Advises on whether baby is making expected progress
- Provide emotional support - Advice on baby routines
- Breast feeding support - Advice on diet
- Check for post natal depression 'baby blues'

Mother postnatal check/review at 6-8 weeks from birth:
- **Doctor or health** visitor checks weight, blood pressure
- Asks about contraception - Asks about periods
- Checks stitches or cuts - Asks how they are
- Check for post natal depression 'baby blues'

Role of father/partner/family– Support with feeding the baby, changing nappies, bathing the baby, shopping, housework and emotional support. This gives mother time to rest/sleep, time to herself and reassurance.

LO3 Conditions for development

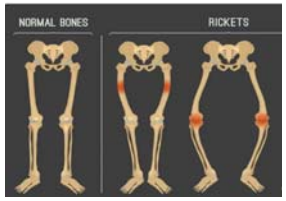
3.4 Conditions for development For children to successfully thrive, develop and grow	
Love and security	Children need to feel loved, wanted and nurtured. This makes them feel emotionally secure helping their confidence and self-esteem.
Warmth	Heating in the home (including clothing and bedding) is important to avoid asthma and lung conditions.
Rest and sleep	This is crucial for a child's physical health, well-being, learning, growth and development. Without sleep children can become irritable.
Exercise / fresh air	Helps to develop physical health and well-being. This: - Builds fitness - Muscle tone - Muscle and bone strength - Co-ordination - Vitamin D (sunlight)
Cleanliness	Children's immune systems are less mature, so cleanliness is needed to avoid infection. Children need to be bathed / washed daily. Bedding and clothing must be washed regularly.
Stimulation / Play	Play is important to develop their imagination and social skills. Play should be appropriate for a child's age group.
Routine	Routines help children feel safe and secure. They improve behaviour, opportunities to socialise and their development. Important routines include bedtime, bath time and feeding.
Opportunities for talking and listening	This helps to their social and emotional development through speaking about feelings and interacting with others. Children also learn through conversations which develops their intellectual and language development.
Awareness of Sudden Infant Death Syndrome	Parents and carers should know how to prevent SIDS. This includes not allowing the baby to overheat, sleeping baby 'feet to foot of cot' and not smoking in babies presence.

3.4 The need for acceptable patterns of behaviour and approaches to discipline	
Need for boundaries	Children need to be aware of boundaries set (know what they can and cannot do) - Boundaries should be consistent. It is unfair for a child to receive mixed messages - Adults should explain why particular behaviour is unacceptable, to help them understand and think through the situation, helping future behaviour.
Consideration of others	- Teaching children kind and considerate behaviour towards other people - Young children are often unaware of how their behaviour affects others - Adults should role model and talk through situations (e.g. sharing) - Over time children become more kind (e.g. toddlers can be seen helping others who have hurt themselves)
Safety	- Rules should be put in place to keep children safe (e.g. holding hands when crossing a road, not standing on a table) - Rules should be explained so that children are more aware on how to keep themselves safe independently
Promoting positive behaviour	Adults should **role model positive behaviour** for children to copy. - Adults should notice and **praise specific positive behaviour** as children feel more proud and this encourages children to repeat good behaviour. - Adults can **reward positive behaviour** with a reward chart or visual reward system
Managing challenging behaviour / tantrums	**Consistent with rules–** Stick to rules to avoid confusion **Create some consequences—**Make children aware of the consequences of them continuing with this behaviour. Parents must follow through on this for this to work. **Distract–** Point to something else that they are interested in. Direct their attention somewhere else. **Ignore–** Carry on with what you are doing. Children knows they are not getting attention and will stop. **Give choices–** Give child an alternative choice. **Stay Calm–** Parent should remain calm (take a deep breath, smile and talk slowly). Child will react worse if parents shows anger or stress

LO4 Understand how to recognise, manage and prevent childhood illnesses

4.1 How immunity to disease and infection can be acquired	
Babies natural immunity	Immunity is the ability to resist disease. During pregnancy antibodies from the mother are passed onto the unborn baby through the placenta. Some immunity can be passed on through breastfeeding. Immunity is only temporary and childhood vaccinations starts at 2 months. Babies receive antibodies in the last 3 months of pregnancy. Premature babies have fewer antibodies passed to them, so have increased infections.
Childhood immunisations and vaccinations	Vaccinations help to protect children against fatal diseases and are offered free of charge by the NHS. Routine vaccinations include: - Whooping cough - Measles, Mumps, Rubella (MMR) - Flu - Polio
Reasons for vaccinations	- Vaccinations are quick, safe and extremely effective. - Once a child has been vaccinated they have a greater chance of fighting disease - If unvaccinated, children have a higher risk of catching and becoming very ill from illness
4.2 How to recognise and treat common childhood ailments and diseases	
General signs of illness	Children often present multiple signs of illness together. Common signs of illness include: - Vomiting and diarrhoea - High temperature - Tiredness - Reduced appetite - Headache - Cough - Runny nose
Common childhood ailments and diseases	Common cold (sore throat, sneezing, runny nose, headache) Chicken pox (Itchy rash, slight fever, red spots with a white centre) Gastroenteritis (vomiting, diarrhoea, dehydration) Tonsillitis (sore throat, fever, headache, pain on swallowing, aches and pains in back and limbs)
4.3 When to seek treatment and help– signs and symptoms	
When to seek emergency health	NHS Advice line (111) or an ambulance should be called when: - Breathing difficulties - Convulsions/seizures/fitting - Child in significant pain - Child is unresponsive - Sensitive to light

4.3 Illnesses which require urgent medical assistance (signs and symptoms, treatment)	
Meningitis	- High temperature - Vomiting - Severe headache - Sensitivity to light - Stiff neck - Skin rash (glass test)
Asthma	Airways go into spasm. Difficulty breathing– wheezing, coughing and breathlessness. Can be caused by allergens and cold weather. Treatment includes: - Inhaler - Reassurance - Keep them calm - Sit casualty upright - Stay with them
Seizures	May be due to epilepsy or high temperature. Violent muscle twitching, clenched fists and arched back. Treatment includes: - Make the immediate area safe– clear of sharp objects - Surround casualty with soft pillows - Call ambulance and stay with them
4.4 Diet-related illnesses	
Childhood obesity	Can be caused by incorrect nutrition, overeating and lack of exercise. To avoid obesity NHS recommends– 60 minutes of play a day, providing healthy meals, drinks and snacks, child sized portions. Obesity effects **physical well-being** (risk of heart attack, high blood pressure, pressure and strain on joints) and **emotional well-being** (increased anxiety, lack of self confidence, depression, low self-esteem)
Dietary deficiencies	If children do not have an appropriate diet and receive the correct nutrients they risk developing a deficiency. **Scurvy** (Lack of Vitamin C) - Citrus fruits helps to avoid condition **Anaemia** (Lack of Iron)- Milk, Eggs, Red Meat, Fish, leafy green vegetables **Rickets** (Lack of Calcium)- Fish and dairy products **Impaired vision** (Lack of Vitamin A)- Cheese, eggs, carrots



LO4 Understand how to recognise, manage and prevent childhood illnesses

4.4 Diet related illnesses	
Food intolerances and allergies	A child's diet may need to restricted due to allergies, tolerances or medical conditions. Food which can cause allergies include nuts, milk, eggs, shellfish.
Anaphylactic Shock	An **anaphylactic shock** is a severe allergic reaction and life threatening. Signs of this include: red, itchy rash, swelling of face and eyes, difficulty breathing. Treatment includes: - Call for an ambulance - Administer Epi-Pen (if trained) - Sit upright with shoulders slightly forward - Continue to monitor and assess them 
Diabetes	Diabetes is where a child doesn't produce insulin. This affects bodies ability to process sugar or glucose found in food. This is treated with insulin injections. Changes to blood sugar can impact health: - **Hypo**glycaemia—Where the **blood sugar** is **too low** - **Hyper**glycaemia– Where the **blood sugar** is **too high** **Signs and symptoms of Hypoglycaemia:** - Drowsiness - Feeling weak or faint - Confusion - Confusion - Sweating and cold, clammy, pale skin Treated with—orange juice, sugary drinks **Signs and symptoms of Hyperglycaemia:** - Drowsiness - Feeling thirsty - Rapid breathing - Passing urine frequently - Fruity, sweet smelling breath Treated with—emergency medical treatment (call an ambulance)

4.5 Caring for the needs of an ill child	
Physical needs (helping the body to recover)	A sick child needs plenty rest and will often feel tired. They also need: - Fluid (to prevent dehydration) - Medication (to aid recovery) - Fresh air - Warmth (blankets, for comfort and temperature) - Sleep (to speed up recovery) - Regular meals (to provide energy and meet nutritional needs)
Intellectual needs (prevent boredom)	It is important to avoid boredom, provide mental stimulation or interaction. Examples include: - Reading books - Colouring / drawing - Play games (board / card games) - **Educational TV**
Emotional and Social needs (provide reassurance)	An ill child can feel confused and frightened at being ill. A parent should: - Provide reassurance (so they know they will get better and not feel frightened) - Show love / affection (so they feel safe) - Pay them attention, keep them company and talk to them

4.6 Preparing a child for a stay in hospital	
Preparing child for hospital visit	Going to a hospital can be very worrying for a young child. When admission is planned, adults can prepare a child. This can help to reduce anxiety.
Ways to prepare a child for hospital visit	**Hospital / ward visit** (allows them to meet doctors / nurses, know where they are staying, helps them to become familiar with surroundings) **Acting out fears and hospital games** (allows them to act out fears and what might happen so that they are less anxious and more prepared. **Books and DVDs** (read stories and watch TV about going to hospital. Helps children to become familiar with hospital environment and see how characters manage the experience) **Explanation and honesty** (parents should be honest about why they need to go and what treatment involves. Lying can cause distrust. Parents should explain in simple terms what will happen.) **Involvement in child's care** (parents can often sleep on the ward. Parents can continue to bath and feed children. This helps the child feel more relaxed, secure and settled.)

LO5 Know about child safety

5.1 Safety in the home	
Safety gates and barriers	These help to stop babies and toddlers climbing stairs and falling down them. It also stops children going into rooms which are dangerous to them (e.g. kitchen).
Window locks, safety catches, cupboard locks	This can stop the window opening too wide and your child being able to climb out. Drawer and cupboard locks prevent children accessing chemicals, medicines, knives, etc.
Five point harnesses and Reins	These help to stop children falling out of highchairs and pushchairs. Reins stop children running off.
Corner protectors	These can help protect babies or toddlers if they fall or hit their body / head on the edge of sharp furniture.
Hob guard **Fire guard**	Helps to keep children away from hot objects.  
Safety glass / safety film	This must be fitted to all low level glass. This helps to toughen glass and stop it from splintering if broken.
Smoke alarms	Increases chance of survival in event of fire as family are made aware early.



5.2 Safety Labelling	
BSI Safety / Kitemark 	UK product and service quality certification mark. Used for products where safety is paramount such as bicycle helmets and smoke alarms. Gives assurance that product is safe and reliable. **Examples–** Bike helmet, high chair, pram, car seat
Lion mark 	Appears on toys. Around 95% of toys sold in the UK are supplied with a Lion Mark. **Examples–** puzzles, board games, soft toys
Age advice symbol 	This identifies when equipment or a product is not suitable for children under the age of 3. This is because product may be a choking risk for children. **Examples–** small figure toys, board games with small pieces, Lego
CE symbol	This is a common label found on toys and has to be displayed on toys made in the EU to show that it meets safety standards. **Examples–** toy car, puzzle, books, soft toys
Nightwear labelling 	Nightwear can set on fire quickly and can cause serious injuries. Labels confirm the flammability of garments should be checked. Flammability means how likely the fabric/object is to set on fire.

R093—Exam Content—Creative iMedia in the Media Industry

Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

Topic of Learning	I will need to know:	So that I can:
Media industry sectors	That there are two types of media –traditional media and new media. How has new media evolved? How has the Internet had an impact on how media products are created, viewed, used? Traditional media refers to media products such as film, television, radio and print publishing. New media refers to computer games, interactive media, the internet and digital publishing.	Explain in detail the different media sectors and how they have developed.
Media industry products	There are a vast range of media products that can be produced by and used in, different sectors. These media products can include– video, audio, music, animation, special effects (SFX, VFX) digital imaging and graphics, social media platforms and apps, digital games, comics and graphic novels, websites, multimedia, eBooks, augmented reality and virtual reality.	Explain using relevant examples the different media products and how they are used by different sectors.
Job roles in the media industry	The job roles within the media can fall into three categories—creative, technical and senior. How do these job roles work together to produce a media product? What are some of the responsibilities of each role? Some job roles are specific to pre-production, production and post-production. Depending on the size and scale of a product being produced, some job roles span multiple production phases. Creative: animator, graphic designer, illustrator, web designer. Technical: camera operator, web developer, sound editor, games developer. Senior: director, editor, creative director, production manager.	Identify the key job roles for a media design project and explain how their role contributes to the production of media products.
Purposes of media products	That media products are created for specific purposes. These include to advertise/promote, to educate, to entertain, to inform and to influence. The product style, content and layout are specifically planned to ensure that the final product meets the required purpose. That style, content and layout will include the use of colour, formal/informal language, positioning of elements, conventions of genre, tome of language, style of audio/visual representation.	Identify the different purposes of media products and explain how specific products meet their intended purpose.
Categories of audience segmentation	There are different categories of audience segmentation—these are age, gender, occupation, income, education, location, interests and lifestyle. How audience characteristics can influence the design and production of media products along with the reasons for and benefits of, audience segmentation.	Explain in detail the different audience categories and how a product would need to be designed to meet their requirements.

R093—Exam Content—Creative iMedia in the Media Industry

Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

Topic of Learning	I will need to know:	So that I can:
Client requirements and how they are defined	How to recognise keywords and information in client briefs. The requirements in client briefs that inform product planning eg type of product, purpose, target audience, content, genre, theme, timescales, client ethos, style. Why requirements in client briefs can constrain planning and production of digital products. How to interpret requirements in client briefs to generate ideas and plan. Know the different ways that client briefs are communicated such as; formal, commission, informal, meeting, written, negotiated.	Interpret a given client brief and understand all of the requirements in order to be able to effectively plan, design and create a digital product.
Planning documentation used to generate ideas	Concept sketches and visualisation diagrams can be used to develop ideas for a media product. Visualisation diagrams can be used to show design, layouts, colours, white space, placement of text and images and annotations can be included to further explain design ideas. Mind maps and mood boards. Both can be digital or hand drawn.	Sketch a detailed visualisation diagram which clearly shows the design of a media product that all members of a design team can follow.
Research methods, sources and types of data	The reasons for, and benefits of, conducting research. There are two types of research—primary and secondary research. Examples of primary research methods—focus groups, interviews, online surveys, questionnaires. Examples of secondary research methods—books, journals, internet sites, research, magazines, newspapers, television. Research data can be qualitative or quantitative information.	Identify the most appropriate method of research for a specific project and be able to explain the advantages/ disadvantages of each method of research.
Documents used to design and plan media products	The purpose of each planning document including, asset log, flow chart, script, storyboard and visualisation diagram, wire frames. The components and conventions of each document and the hardware and software used to create each one. What makes each document effective and selecting which document is appropriate for use. How to improve the effectiveness of documents for users in given contexts.	Identify the most appropriate document for the product being designed and to explain the key content required for each.
Components of work plans	The purpose of work planning and the components and role of a work plan. Components of a work plan include: tasks, activities, work flow, timescales, milestones, contingencies, resources such as hardware, software and people. The advantages of using work plans when planning a digital media product and how they can be used to manage time, tasks, activities and resources for individuals and large teams.	Create an effective work plan that includes all of the required content and can demonstrate how they can be used to manage a project.

R093—Exam Content—Creative iMedia in the Media Industry

Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

Topic of Learning	I will need to know:	So that I can:
Legal issues that affect media	The legislation that relates to the creation of media products including, intellectual property rights to protect copyright, ideas, patents and trademarks. The purpose of, and reasons for, legislation to protect intellectual property. Data protection to protect the rights of data subjects in the collection, use and storage of personal data. Defamation: libel and slander. Privacy and permissions relating to the rights for recording images/taking photos in public places and the commercial use of images and invasion of privacy. Using copyrighted material: watermarks, symbols and creative commons licences.	Explain the key legislation relating to the creation of media products using relevant examples.
Media codes used to convey meaning, create impact, engage audiences	Media codes can be technical, symbolic or written. Ways that meaning and/or engagement are created using animation, audio eg dialogue, music genre, silence, sound effects, vocal intonation. Use of camera techniques eg angles, shots and movement. The use of colour, graphics, interactivity, lighting, mise-en-scene, movement, transitions and typography to help convey meaning, create impact and engage audiences.	Explain how the combination of content and codes work together to convey meaning, create impact and engagement.
Health and safety issues when creating digital media products	The health and safety risks/hazards in all phases of production, risk assessments and location recces. The purpose of risk assessments and location recces. The common risks and hazards in media production and what media producers can do to reduce these risks and hazards.	Identify and explain the commons risks/hazards in media production and how these can be reduced.
Media distribution platforms to reach audiences	The different platforms used to distribute media to audiences. Online: apps, multimedia, web. Physical platforms: computer, interactive tv, kiosks, mobile devices. Physical media: CD/DVD, memory stick, paper based.	Explain the characteristics of the different platforms and the advantages/disadvantages of each along with how their characteristics affect the selection of final product file format.
Properties and formats of media files	Image files: DPI/PPI resolution, pixel dimension, raster, bitmap, vector, compressed and uncompressed. Audio files: bit depth, sample rate, compressed, uncompressed. Moving image files: frame rate, resolution, SD, HD, 4K, 8K, animation, video, uncompressed, compressed. File compression: lossy/lossless compression.	Explain the properties of each media format to determine the most appropriate format and their limitations.

Week	I will need to know:	So that I can:
1 Engineering Drawing Conventions	Different line types are used in Engineering Drawings to communicate details which might not be visible or to show how components fit together, for example [- - - - - - Hidden detail line] [— - — - — Centre line] [⟵—⟶ Dimension line]. A **title block** is where crucial information about the Engineering Drawing will be given, such as the **scale**, **units of measurement**, **tolerance** and what type of Engineering Drawing it is. The symbol to the right represents '**third angle orthographic projection**'.	Communicate ideas effectively using appropriate Engineering Drawing conventions.
2 Sustainable Design	The **6 Rs** of sustainability are a useful framework that aim to help us reduce our environmental impact and improve sustainability, and can be considered by the designer, the manufacturer and the customer. They are **Reduce**, **Reuse**, **Recycle**, **Repair**, **Rethink** and **Refuse**.	Design more sustainable products.
3 CAD	Computer Aided Design (**CAD**) is where designers use computer software to generate 2D or 3D representations of a design. Software includes 2D Design, AutoCAD, Sketchup, Fusion 360, Onshape and many more. The advantages of CAD over hand drawn sketches are that you can be **extremely precise**, designs can be **shared easily** with the client or manufacturer, **changes can be made quickly** without deleting the whole design, you can view the product from **multiple angles**, and concepts can be made to look realistic using textures and patterns (this is called **rendering**).	Present my ideas professionally.
4 CAM	Computer Aided Manufacture (**CAM**) is where a CAD model is made using **machinery**. For example, a 2D vector drawing can be uploaded to a laser cutter or vinyl cutter which will then cut components out (**subtractive manufacturing**), or a 3D model can be sent to a 3D printer which will build the product up layer by layer (**additive manufacturing**). The advantages of CAM over hand making products are that CAM can be **very precise**, meaning that **less waste** is created, **identical components** can be made, and CAM can **reduce the time required** to produce components.	Prototype ,my ideas for testing and communication.
5 Isometric and oblique drawing	There are many different methods of creating a 3D Drawing - isometric and oblique are two that are frequently used in Engineering Drawings. **Oblique projection** is where a drawing is created from a **side view**, and **45 degree lines** are added to create a 3D projection. This method can be used to give **accurate measurements** of a product. **Isometric drawing** is a type of drawing which is set out using 30-degree angles, and often grid paper will be used and drawn upon to help the designer. Both types of drawing can be drawn to scale and therefore can be used to give the measurements of a product, however, they also do not take into account perspective and will therefore not look realistic.	Present my ideas professionally
6 Technology Push vs Market Pull	**Technology push** is when **advances in technology** create demand for new products. New products may be released that use new technology to introduce new features, or to reduce costs. **Market pull** is when new products are developed in **response to demand from customers**. Consumers might see a new product they want to buy, or a competitor will launch a similar product, which drives greater demand for similar products.	Understand what drives product development
7 The 6 Rs	Considered when designing any product and will help the designer create a ***more sustainable product***. Remember this means an environmentally friendly product. **Recycle** (can materials be recycled?), **Re-use** (can parts be used again?), **Reduce** (can less material or energy be used?), **Re-think** (can the design be changed? Can we step back to the original problem and find a radically new way to solve it with less environmental impact?), **Refuse** (refuse to use harmful materials or processes), **Repair** (make spare parts available and make it easy to repair and maintain so its life will be longer and not need replacing so quickly.)	Be responsible and protect our planet through my design decisions.

A Christmas Carol

Prepared Introduction:

Dickens presents [focus] to criticise misanthropy in Victorian London. As a philanthropist, Dickens uses his didactic allegorical novella to show the need for social reform. Dickens crafts this through Scrooge's redemption arc as he progresses from a 'covetous old sinner' to being 'quite a baby' symbolising his redirth.

Key Quotations:

1	'**solitary** as an **oyster**'	'his own **heart** laughed'
2	'I wear the **chain** I **forged** in life'	'light as a **feather**'
3	'decrease the **surplus** population'	'If these **shadows** remain unaltered by the Future, the child will **die**.'
4	'Another **idol** has displaced me ... a **golden** one'	'as good as **gold**'
5	'biting weather' 'freezing fog'	'**Golden** sunlight; **Heavenly** sky'
6	'**gruff** old bell was always peeping **slily** down at Scrooge'	'**merry** bells'
7	'are there no **prisons**?'	'**Ignorance**' & '**Want**' 'Beware ... on his brow ... **Doom**'
8	'**Father** is so much kinder than he used to be, that home's like **Heaven**!'	'to Tiny Tim, who did not die, he was a second **father**'
9	'**edge** his way along the **crowded** paths of life'	'open their shut-up **hearts** freely ... as if they really were fellow-passengers to the **grave**'

'a strange figure—like a **child**: yet not so like a child as like an **old man**'	'a **jolly Giant**, glorious to see; who bore a glowing torch...Girded round its middle was an antique scabbard; but no sword was in it'	'a solemn **Phantom**, draped and hooded, coming, like a mist along the ground, towards him.'

A Christmas Carol

Philanthropy: the desire to help others.

Malthusian: reflecting Thomas Malthus' theories.

Exploit: make use of someone in an unfair way.

Avarice: extreme greed for wealth/material gain.

Ignorance: lacking knowledge, often deliberately.

Misanthropic: showing a dislike of other people.

Didactic: a story with a moral instruction or message.

Redemption: being saved from sin or wrongdoing.

Miser: someone who hoards wealth and spends little.

Foil – a character create to be another's opposite, with the purpose of exaggerating viewpoints through contrast.

Idol: something that is admired in a godlike fashion.

Solitary: existing alone.

Melancholy: sadness without having a particular cause.

Context: Victorian England
The Victorian Era of Britain saw a lot of changes in society. Industry took over and with it came a **wider class divide than before**. There was a **huge divide between rich and poor.**

Context: The role of the church
Religion was important during the Victorian era. Most people believed in **heaven as a reward for good behaviour and hell (or purgatory) as a punishment.**

Context: Ghost Stories
Ghost stories were hugely popular during the Victorian era. **Dickens wrote a ghost story, aimed at upper class readers, as he knew it would sell well.**

Context: Thomas Malthus and Malthusian economics
Malthus was an economist who believed that **if the population grew too large, there would be a crisis around food supply**. Malthus believed that to **help society and the population, some had to die.** Malthus' theory implied that this should be those least important to society (the working class!)

Context: Poor Law
In Victorian times, those is poverty were not viewed kindly. If someone was poor or in debt, they were sent to debtors jail or a workhouse. **This meant that poverty was seen as a crime and the working class, criminals.**

Key Themes:

Redemption	Supernatural
Social justice	Kindness
Exploitation	Greed

An Inspector Calls

Prepared Introduction

Priestley presents **[THEME]** to **criticise capitalist culture** within Edwardian England. As a socialist, Priestley wanted his audience to 'learn [the] lesson' that 'we are all responsible for each other'. Priestley crafts the cyclical structure to subvert the murder mystery genre so that we gradually realise that everyone must 'share our guilt'.

	Key Quotations	
1.	'**Burnt** her inside out'	'**Fire** and blood and anguish'
2.	'**unsinkable**, absolutely **unsinkable**'	'we're all in it – up to the **neck**'
3.	'obscene fat **carcass**'	'We are members of one **body**'
4.	'A **chain** of events'	'He's giving us the **rope** - so that we'll hang ourselves'
5.	'I'd give **thousands** - yes, **thousands**'	'**Millions** and **millions** and **millions** of Eva Smiths'
6.	'**Mummy**'	'**Mother** - stop - stop!'
7.	'(with sharp **sarcasm**)...You were the **wonderful Fairy Prince**.'	'young and **fresh** and charming''
8.	'Girls of that **class**-'	'You mustn't try to build up a kind of **wall** between us and that girl'
9.	'she was **pretty** and a good **sport**'	'Just **used** her...as if she was an **animal**, a **thing**, not a person'
10.	'Lower **costs** and higher prices'	'A man has to mind his own business and **look after his own.**'

Stage Directions:

'The lighting should be pink and intimate until the Inspector arrives and then it should be brighter and harder.'
' Arthur Birling.... Rather provincial in his speech. His wife is.... Her husband's social superior.'
'The general effect is substantial and heavily comfortable but not cosy and homelike.'

An Inspector Calls

Hindsight – to understand a situation only after it has happened.

Mouthpiece – a dramatic device where a character speaks for the author, communicating their point of view within the play.

Dramatic irony – when the audience has knowledge of the significance of some information that the characters lack.

Naïve – lacking in wisdom or judgement.

Remorseless – without regret or guilt.

Nomenclature – the selection process of naming things.

Microcosm/microsociety – literally 'small world'. A system that represents the larger word, usually through the use of symbolism and allegory.

Callous – cold-hearted and uncaring

Materialistic – excessively concerned by what one owns or money.

Omniscient - all knowing.

Allegory - a story with a hidden meaning

Cyclical structure - a story that begins and ends in the same way (In AIC, the doorbell being rung)

Objectification - referring to something as an object, rather than a human being.

Context: Priestley and Socialism
Priestley was born in **Bradford, Yorkshire.** He believed in the political idea of **Socialism.** A **Socialist society** would be one that shared wealth and created less of a divide between the rich and poor.

Context: Capitalism
A political idea whereby people keep as much as they earn. This creates a **divide in society** between those who are rich and those who are poor. **Priestley disagreed with Capitalism.**

Context: Hindsight
The play was written in 1947 but set in 1912. This means, as a writer, Priestley had experienced two world wars and the suffragette movement but this had yet to happen in the play.

Context: Suffragette Movement
The **suffragette movement began in the 1920's and gave women a voice** to create change in society. Sheila, as a character, is presented as a future suffragette. Before this, **women were seen as housewives and their value was mostly based on their appearance. This is seen thr9ugh the repeated use of the word 'pretty' to describe Eva Smith throughout the play.**

Context: Play Form
An Inspector Calls is a play which is designed to be performed on stage. A director of a play considers**: props, setting, costumes, lighting and staging.**

Key Themes:

Responsibility	Role of women
Social Justice	Greed
Equality	Reform

Macbeth

Prepared Introduction:

Shakespeare presents [focus] to criticise Machiavellian immorality in the Jacobean era. As a humanist, Shakespeare wanted to explore the extent to which Macbeth's hamartia or supernatural forces dictate his downfall. Shakespeare crafts this through the tragic arc of Macbeth from the almost deified start as 'Bellona's bridegroom' to the ignominious and hellish end of this 'dead butcher and his fiend-like queen'.

Key Quotations:

1	**'Fair** is **foul**, and **foul** is **fair'**	'the **equivocation** of the fiend That **lies** like **truth'**
2	**'Stars**, hide your **fires**, Let not **light** see my **black** and deep **desires**.'	**'Vaulting ambition'**
3	'look like the innocent **flower**, But be the **serpent** under't.'	'We have scotch'd the **snake**, not kill'd it: She'll close and be herself'
4	**'unsex** me here'	**'dash'd** the brains out'
5	'A **dagger** of the mind, a false creation'	'O, full of **scorpions** is my mind, dear wife!'
6	'Macbeth does murder **sleep"**	'To **bed**, to **bed**, to **bed**!'
7	'mine eternal **jewel** Given to the common enemy of man,'	**'Seyton**!--I am sick at heart'
8	'I shame to wear a heart so **white'**	'Out, damned **spot**!'
9	**'Neptune's ocean'**	'gash'd stabs look'd like a **breach in nature'**
10	'What **beast** was't then ... When you durst do it, then you were a **man'**	'Too full o'the milk of human kindness''

Prophecies:

beware **Macduff**	none of **woman born** Shall harm Macbeth.	Macbeth shall never vanquish'd be until Great **Birnam wood** to high Dunsinane hill Shall come against him.

Macbeth

Hamartia – tragic flaw

Ambition – desire to achieve success

Tragic hero – from Greek tragic theatre

Treachery – betraying trust

Regicide - the crime of killing the king

Divinely appointed – chosen by God

Paranoia – suspicion without true cause

Masculinity - typical behaviours associated with men and boys (such as violent, powerful etc)

Supernatural – things that cannot be explained (such as visions, hallucinations of ghosts)

Tyrant - to rule through fear and violence

Fate - decisions and futures predetermined

Free will - making our own choices to determine our future

Insanity -- to no longer think clearly/ the brain loses its ability

Context: Jacobean Era
Shakespeare wrote Macbeth during the Jacobean era. The king was King James I. King James was obsessed and terrified of witches. He wrote a book called Daemonologie to help identify witches. During his reign, witchcraft became illegal causing thousands to die.

Context: Shakespeare and money
In order to be successful and make money, Shakespeare needed King James to like his plays. As such, Shakespeare wrote Macbeth to impress King James by vilifying witches and traitors.

Context: Chain of Being
The Chain of Being was a belief of the Jacobean people there was a natural hierarchy (decided by God) in society. God and the king were at the top and most powerful, with dirt at the bottom. **If the Chain was broken this was considered a sin and an act against God, disrupting nature.**

Context: Divine Right of Kings
The belief that God chooses the king. If anything were to happen to the king, this would be an act against God and a sin.

Context: Gunpowder Plot
James was an unpopular king having brought his Protestant views from Scotland into England. A group of Catholic men, including Guy Fawkes, attempted to blow up the House of Parliament and murder him. They failed – but the country, and James, was shaken by this political turmoil.

Context: Women
Women were expected to be housewives and mothers.

Key Themes:

Violence	Insanity
Masculinity	Leadership
Supernatural	Relationships

Travel and Tourism

Knowledge Organiser (Theme 2: Unit 8)

en vacances = on holiday

Places in town	
la blibliothèque	library
le château	castle
l'église	church
le magasin	shop
le marché	market
la patinoire	ice rink
la plage	beach
la station de ski	ski resort
l'auberge de jeunesse	youth hostel
le centre d'équitation	horse-riding centre
la colonie de vacances	summer camp
la piscine	swimming pool
la piste cyclable	cycle path
le bâtiment	building
la boucherie	butchers
la boulangerie	bakers
la charcuterie	delicatessen
le commissariat	police station
l'endroit	place

Where?	
à la campagne	in the countryside
au bord de la mer	by/to the sea
à la montagne	in the mountains
au centre-ville	in the city centre
en ville	in/to town
à l'étranger	abroad

Aller (to go)	
je vais	I go
tu vas	you go
il/elle va	he/she goes
nous allons	we go
vous allez	you go
ils/elles vont	they go

je voudrais (+ full verb) = I would like to
je vais (+ full verb) = I am going to

Depuis	
To say how long you've been doing something, use the present tense with 'depuis'	
e.g. je joue au foot depuis 5 ans	I've been playing football for 5 years

Sequencing words and phrases	
d'abord	first of all
enfin/finalement	finally
puis	then
après	afterwards
ensuite	next
plus tard	later

Time and Frequency	
le matin	in the morning
l'après-midi	in the afternoon
le soir	in the evening
chaque jour	everyday
tous les matins	every morning

Countries
Remember that countries are either masculine, feminine or plural!
If you want to say you live in or you are going to a country, you will use 'en', 'au' or 'aux' depending on the country. e.g. je vais en France, j'habite au Canada, il va aux Pays-Bas.
If you want to say in or to a town/city, you will use 'à' (e.g. je vais à Paris)

Feminine countries (the majority are feminine) 'en'	
la France	France
la Grande-Bretagne	Great Britain
l'Angleterre	England
l'Espagne	Spain
l'Italie	Italy
l'Écosse	Scotland
l'Algérie	Algeria
la Belgique	Belgium
la Grèce	Greece
la Chine	China
l'Allemagne	Germany
l'Irelande	Ireland

Masculine countries 'au'	
le Portugal	Portugal
le Canada	Canada
le Brésil	Brazil
le Japon	Japan
le Méxique	Mexico
le pays de Galles	Wales
le Royaume-Uni	United Kingdom
le Maroc	Morocco

Plural countries 'aux'	
les États-Unis	United States
les Pays-Bas	Netherlands
les Antilles	The Carribean

Activities	
les loisirs	free-time activities
bronzer	to sunbathe
les activités nautiques	water sports
lire un livre/ un roman	read a book/novel
faire du vélo	ride a bike
visiter les marchés	visit the markets
goûter la cuisine de la region	taste the region's food
faire une promenade	go on a walk
la planche à voile	windsurfing
se reposer	to rest
faire des achats	to do the shopping
faire du shopping	to go shopping (clothes)
faire du kayak	canoeing/kayaking
nager	to swim
s'amuser	to have fun
les sport d'hiver	winter sports
faire de l'aviron	rowing
s'égarer	to get lost/wander off
faire de la plongée	diving
tricoter	to knit

Past tense	
j'ai visité	I visited
je suis allé(e)	I went
j'ai fait	I did
j'ai joué	I played

Transport	
le moyen de transport	means of transport
en avion	by plane
en bateau	by boat
à pied	on foot
à vélo	by bike
en voiture	by car
en train	by train
voyager	to travel

Opinions	
j'aime mieux	I prefer
quelle barbe!	how boring!
ça me plaît	I like it
je trouve que	I find that

Adjectives	
difficile	difficult
ennuyeux(se)	boring
fatigant(e)	tiring
génial(e)	great
marrant(e)	funny
cher/chère	expensive
propre	own
seul(e)	only
agréable	nice
déçu(e)	disappointed
minable	pathetic
sale	dirty
célèbre	famous
ensoleillé(e)	sunny
pluvieux(se)	rainy
venteux(se)	windy
relaxant(e)	relaxing

TOPIC 8: Travel and tourism

D'habitude **je reste** en Angleterre *en été*	Normally **I stay** in England *during summer*
Il y a beaucoup **à faire** et *à visiter*	There is a lot **to do** and *to visit*
C'est ma destination **favorite/préférée**	It's my **favourite** destination
Je préfère **voyager** *en voiture*	I prefer **to travel** *by car*
parce que j'ai **toujours** *le mal de mer*	because I **always** get *seasick*
et **j'ai** *vraiment* **peur de** voler	and **I'm** *really* **scared of** flying
Quand j'étais petite *j'allais* en France	**When I was little** *I used to go* to France
Nous visitions Disneyland Paris	We used to visit Disneyland Paris
On **faisait la queue** depuis des heures	We **used to queue** for hours
pour voir **les manèges** et les princesses	to see **the rides** and the princesses
Je **ne** m'ennuyais **jamais**	I was **never** bored
Mes **dernières** vacances étaient terribles!	My **last** holiday was terrible!
On est allés en Californie **pendant un mois**	We went to California **for a month**
car mon père **a** toujours **voulu** *y* aller	because my dad **has always wanted** to go *there*
Mes frères se sont chamaillés tout le trajet	My brothers **bickered** the whole journey
La réceptionniste à l'hôtel était **impolie**	The hotel receptionist was **impolite**
et la chambre était très **sale**	and the room was very **dirty**
Le pire était de *perdre* mon passeport	**The worst thing** was *losing* my passport
Quel désastre!	What a disaster!
Si **je gagnais** la loterie	If **I won** the lottery
je voyagerais autour du monde	**I would travel around** the world
Je nagerais dans l'Océan Pacifique	**I would swim** in the Pacific Ocean
Je ferais de **la plongée**	I would go **scuba diving**
pour voir les poissons tropicaux	**in order to see** the tropical fish
Ce serait le pied!	**It would be awesome!**

My Studies & Life at School and College Knowledge Organiser

(Theme 3: Units 9 & 10)

Mes matières scolaires	
	le français
	le théâtre
	la géographie (la géo)
	la musique
	la technologie
	l'anglais
	l'EPS
	l'histoire
	l'informatique
	les arts plastiques
	les mathématiques (les maths)
	l'espagnol
	l'allemand
	les sciences (la biologie, la chimie, la physique)

L'uniforme	
la blouse	overall worn at school
la coiffure	hairstyle
la laine	wool
la mode	fashion
la raie	parting (in hair)
les vêtements de marque	designer clothes

Les classes	
la sixième	Year 7
la cinquième	Year 8
la quatrième	Year 9
la troisième	Year 10
la seconde	Year 11

Le transport	
le car	coach
le trajet	journey
le car de ramassage	school bus
je vais à vélo	I cycle
je vais à vélo	I walk
je vais en voiture	I go by car

Au collège	
la cantine	canteen
la cour	playground
les devoirs	homework
les notes	marks
les progrès	progress
l'arbre	tree
l'ambiance	atmosphere
le bruit	noise
l'inconvénient	disadvantage
l'intimidation	bullying
le prix	prize
la punition	punishment
la récompense	reward

Les gens	
le directeur/ la directrice/ le principal	headteacher
l'élève	pupil
l'instituteur/ l'institutrice	primary school teacher
le professeur	secondary school teacher
le professeur principal	form teacher
le/la correspondante(e)	pen friend/ exchange partner

Les affaires	
les affaires	belongings
le bulletin scolaire	school report
le cahier	exercise book
l'animal en peluche	cuddly toy
le cartable	school bag
l'ordinateur	computer
la poubelle	bin
le sac	bag
le tableau	board

les adverbes/les intensifs	
beaucoup	lots
assez	quite
régulièrement	regularly
absolument	absolutely
tellement	so much
tant	so much
très	very
trop	too (much)
si	so
vraiment	really

Les verbes	
faire attention	to pay attention
faire des efforts	to make an effort
oublier	to forget
acheter	to buy
apprendre	to learn
commencer	to start
comprendre	to understand
demander	to ask
distribuer	to hand out
énerver	to annoy
finir	to finish
remarquer	to notice
sonner	to ring (of bell)
voyager	to travel
avoir raison	to be right
avoir tort	to be wrong
être d'accord	to agree
passer un examen	to sit an exam
corriger	to correct
devoir	to have to (must)
écrire	to write
exprimer	to express
falloir	to be necessary
s'habiller	to get dressed
se moquer de	to make fun of
nettoyer	to clean
porter	to wear
pouvoir	to be able to (can)
respecter	to respect
vouloir	to want

Les adjectifs	
amusant(e)	fun
difficile	difficult
ennuyeux/se	boring
facile	easy
fatigant(e)	tiring
insuffisant(e)	poor
intéressant(e)	interesting
sévère	strict
utile	useful
bien équipé	well equipped
faux/fausse	false
pénible	painful/annoying
stressant(e)	stressful
tard	late
tôt	early
vrai(e)	true
interdit	not allowed
obligé(e)	obliged/ forced
propre	clean
sale	dirty

L'emploi du temps	
l'emploi du temps	timetable
le cours	lesson
la pause-déjeuner	lunch break
la récréation (la récré)	break
le temps libre	free time
le lundi	on Mondays
à __ heures, j'ai _____	at __ o'clock, I've got _____
le matin	in the morning
l'après-midi	in the afternoon
le mercredi après-midi	on Wednesday afternoon
le déjeuner	lunch
en retard	late

TOPIC 9-10: My studies/Life at school or college

Mon collège **s'appelle** ...	My school **is called** ...
C'est un collège **mixte**	It's a **mixed/co-educational** school
Pour les jeunes **de** onze **à** dix-huit ans	For young people **from** 11 **to** 18 years old
Je trouve les profs sympa mais *un peu* strictes	**I find** the teachers nice but *a little* strict
Le collège est **grand** et *assez* moderne	The school is **large** and *quite* modern
Il y a **environ** treize cent *étudiants*	There are **approximately** 1300 *students*
Je porte une chemise blanche,	**I wear** a white shirt
une veste noire et un pantalon noir	a black blazer and black trousers
Je n'aime pas du tout mon uniforme scolaire	I **don't like** my school uniform **at all**
c'est **inconfortable** et *moche*	it's **uncomfortable** and *ugly*
Les cours **commencent** à neuf heures	Lessons **commence** at 9am
et **finissent** à trois heures **de l'après-midi**	and **finish** at three **in the afternoon**
Au collège **de mes rêves**	In the school **of my dreams**
il n'y aurait pas d'uniforme scolaire	**there wouldn't be a** school uniform
et le collège **finirait** à midi	and school **would finish** at noon
pour que je puisse bavarder l'après-midi	**so that I could** chat in the afternoon
J'étudie **l'anglais**, *les maths* et l'EPS	I study **English**, *Maths* and PE
mais **ma matière préférée**, c'est le français	but **my favourite subject** is French
parce que c'est **très** amusant	because it's **very** amusing
et le prof est **vraiment** sympa	and the teacher is **really** nice
Par contre je déteste les sciences	**On the other hand** I hate science
car c'est **trop** difficile et ennuyeux	because it's **too** difficult and boring
Bien que j'aie choisi la géographie	**Although** I've chosen Geography
je ne suis pas douée en ça	**I'm not gifted** at it
mais je **le** trouve *très* intéressant	but I find **it** *very* interesting

Commodity: Meat, Poultry, Fish and Eggs

Farming methods

There are symbols on food packaging (RSPCA assured /red tractor symbol to show that meat and poultry have met welfare standards. Animal welfare refers to the well-being of animals and covers areas such as the animals access to fresh water , diet to maintain health, assurance that the animals are reared free of any discomfort, pain, injury disease and provided with adequate shelter.

Growth & Process

Beef: Organic beef and rare breed beef is the most expensive to buy. The time the beef has been hung will determine how flavoursome and tender it is.
Pork: the meat that comes from pigs. Ham, bacon and gammon are cured pork.
Goat: also called Cabrito, Chevon or Kid.
Venison: meat from deer, it is classified as game but can be farmed or park reared.

Nutrient Value

Meat and Poultry contain: Protein (**H**igh **B**iological **V**alue), Fat (red meat has a higher fat content than poultry, Vitamins A and D (fat soluble), B12 (water soluble), Minerals; Iron (for haemoglobin), Magnesium (strong bones and muscle health), Potassium, (electrolyte balance) Selenium (antioxidant) and Zinc (immune and reproductive systems).

Classification

Meat is sourced from animals, Poultry from domesticated fowl (eg chicken and turkey), Offal is edible internal organs, Game is sourced from wild animals (eg Rabbit, Pheasant, Pigeon). British meat and poultry must be born, reared and slaughtered within the UK. Under EU law all meat and poultry for human consumption must show traceability through all stages.

Storage

All meat and poultry should be stored at between 0-5^{o}C. Raw and cooked meat/poultry should be stored separately. Raw meats at the bottom of a fridge and cooked meats at the top. Poultry should be stored away from other meats to minimise Salmonella cross-contamination.
Red chopping boards for raw meat, Yellow for cooked meats and Blue for raw fish.

Diet

A portion of meat = 80g (roughly the size of a pack of cards). It is recommended not to eat more than 500g per week (approx. 6 portions).
Protein is a important macronutrient, it is essential for growth and repair of the body. 1g of protein can provide 17KJ/4 cal of energy. Animal proteins are HBV (high biological value proteins as they contain all essential amino acids).

Emulsions

Oil and Water do not mix. Some dishes we make need to have the oil and water permanently mixed together, to do this we make an emulsion. Placing olive oil, and vinegar and shaking them together forms a salad dressing, but they will settle out into layers. This is called a unstable emulsion. If you gradually add beaten egg into the solution, you will for mayonnaise which is a stable emulsion as it does not separate.

Classification

Meat proteins coagulate (harden) on heating. At around 60^{o}C the proteins begin to change in composition and structure. This process is called denaturation. As a result of denaturation the muscle fibres become firmer. Beyond 60^{o}C the muscle fibres shrink and the meat juices are squeezed out.
Marinades tenderise meats by changing collagen into gelatine, allowing the meat to hold more water.

Commodity: Soya and alternatives

Growth and Process

Many nuts and seeds are processed into oils. They are cleaned, ground and pressed. The oil released is collected, refined (to remove colour, odour and bitterness) before being bottled. Alternative proteins AKA Novel Protein foods (NPF) are based on vegetable proteins and microorganisms. Examples include; Tofu, Soya, Quorn and Textured Vegetable Protein.

Classification

Legumes AKA pulses are an edible seed which grows in a pod. Beans, Lentils and Peas are examples. Nuts are fruit encased in a hard shell, this gives them a long shelf live. Seeds are the embryo of the plant. Peanuts are legumes not nuts. Alternative proteins are foods used as a replacement for meat, they can be based on vegetable protein or mycoprotein.

Nutrient Value

Pulses are a cheap, low fat source of protein, fibre, vitamins and minerals which count towards your 5 a day. The fibre in pulses can help lower your cholesterol levels and are a good source of iron. Most plant sources of protein are missing one of the essential amino acids and so are called LBV proteins (low biological value).

Food Science

Conduction: the transfer of heat by direct contact from a hot surface. Eg; dry frying, griddling, searing and sauteing.
Convection: the transfer of heat by the mass movement of heated particles into a cooler mass or area. Eg; (dry heat methods) Baking, roasting and deep frying. (Wet heat methods) Boiling, braising, simmering, poaching, steaming and pressure cooking.

Food Science

Radiation (Infra-red): the heat is transferred using electromagnetic radiation, waves of heat or light strike the food. E.g; Toasting, grilling, and barbequing.
Radiation (Microwave): The magnetron in the microwave oven converts electricity to radio waves which penetrate the food. E.g; heating up leftovers, defrosting food, warming up ready meals.

Commodity: Milk, Cheese and Dairy

Food wastage

Food sustainability looks at the impact of food production on the worlds economy. Sustainable food should be produced, processed, bought, sold and eaten with consideration to; being waste free, buying locally and seasonally, eating healthily, choosing fair-trade, fishing sustainably, balancing diet and growing own produce. It is estimated that food production will need to increase by 60% by 2050 to feed the global population.

Growth & Process

The source of all dairy foods is milk which comes from female mammals for feeding their young. Milk is a 'complete food' as it contains all the indispensable amino acids and many of the essential nutrients needed for bone health. Dairy cows need to of given birth before they produce milk. They are milked twice a day. Cows tend to be productive for 3 years. Milk is collected and held in storage tanks before processing. This is primary processing.

Classification

All milk in the UK must be heat treated @75°C for 25 secs to destroy pathogenic bacteria (pasteurisation). Milk can then be; **Homogenised** (using a fine mesh under pressure to evenly distribute fat), **Sterilised** (heat treated at 50°C, homogenised, bottled and then steamed @110°C for 10-30 mins**), Ultra heat treated** (UHT- heated to 135°C for 1 sec) **Evaporated** (50% of water removed), **Condensed** (heated @110°C and sweetened) or **Dried**.

Nutrient Value

Cows are the primary source of milk in the UK. Its flavour and fat content are determined by; the breed of cow, season its produced, type of feed, the age and health of the cow. Milk is 85% water, the rest is made up of HBV protein (3.5%) , Fat (3.5-5%), Carbohydrate (4.8%), Vits B, A, D,C. Minerals; Phosphorous, Sodium, Iron, Calcium.

Diet

Lactose intolerance is when a person cannot digest lactose (natural sugar) in cows milk. Bacteria in the gut then feed on this sugar and produce abdominal symptoms. There are alternative milks such as sheep, goat or nut milks. A small number of people can be allergic to milk proteins, and will need to avoid dairy products. This is called CMPA- Cows milk protein allergy. Foods containing milk must have milk listed as an allergen on the packaging.

Food science

Milk is a emulsion meaning it has tiny globules of fat floating in water. Emulsions are colloides. The fat content of milk determines the type of milk (whole- 3.9%, Semi skimmed-1.7%, Skimmed-0.5%). The fat component of cheese melts at 65°C making it spreadable/stringy or dissolved in hot foods. Too high a heat causes the protein (caseinogen) and fat to burn.

Food science

Yoghurts is made from different types of milk. A bacterial starter culture is added to ferment the lactose into lactic acid this allows the proteins to coagulate and produce a sharp, tangy natural yoghurt. Sugar/sweetener can be added as well as fruit. Yoghurt can be 'live' (harmless bacteria present), Probiotic (beneficial gut

making cheese

A starter culture is added to pasteurised milk. The culture ripens the milk by fermenting the lactose into lactic acid. Once enough Lactic acid is produced rennet is added to coagulate into curds and whey. The Whey is drained from the curds. Curds are then 'scalded' to encourage 'syneresis'. It is then pressed to remove more whey and shaped.

Storage

Fresh milk should be stored at 5°C with a tight fitting lid away from strong smelling foods. Sterilised and UHT milk can be stored unopened at room temperature. Evaporated and condensed milk have long shelf lives and an be kept in a cupboard. Evaporated should be stored in the fridge once opened.

Year 11 - Geography- Cycle 1

Key vocabulary

- **Ecosystem**: A community of plants and animals that interact with each other and their environment.
- **Consumer**: Creature that eats animals and or plant matter.
- **Decomposer**: An organism such as a bacterium or fungus, that breaks down dead tissue, which is then recycled to the environment.
- **Producer**: An organism or plant that is able to absorb energy from the sun through photosynthesis.
- **Nutrient cycling**: A set of processes whereby organisms extract minerals necessary for growth from soil or water, before passing them on through the food chain – and ultimately back to the soil and water.

Week 1 –Local Ecosystem

Tropical rainforest vegetation

- Haldon Forest is a forest located in the Haldon Hills, Devon, England.
- 3,500 acres of woodland
- It is an ancient deciduous woodland. It has many native trees including oak, ash, elm and beech. There is a lower shrub layer of grasses, brambles and bracken that form the main producers in the ecosystem. There are many birds, mammals, amphibians and insects which are the consumers including Deer.

Week 2 – Tropical Rainforests

Tropical rainforest vegetation

Emergents: Tallest trees in the rainforest reaching around 50 metres.

Canopy: Receives 70% of sunlight and 80% of rainfall. Around 30 metres high.

Undercanopy: Sheltered layers of young trees growing to a height of 20 metres.

Shrub layer: Only small trees and shrubs. Less than 2% of sunlight reaches the forest floor.

Epiphytes: Some plants grow on larger trees as they only need water and air to survive e.g. orchids.

Convectional rainfall: Where the ground is heated intensely by the sun, the air rises and condenses to form clouds and heavy downpours.

Plant Adaptations: Buttress Roots, Epiphytes,

Animal Adaptations: Camouflage, Bright colours

Week 3 – Threats to the Rainforest

Threats to the rainforest

Deforestation: The cutting down of trees, transforming a forest into cleared land for other uses.

Logging: Trees cut down for items such as furniture, paper and utensils. Half of wood used for fuel.

Cattle ranching: Cattle raised on the cleared land to meet the demand for beef elsewhere e.g. USA.

Mining: The removal of solid mineral resources from the earth. These resources include ores, which contain commercially valuable amounts of metals

Palm oil plantations: Palm oil is monoculture farming.

Dam building: Often built to produce hydroelectric power for other activities such as logging.

Ecotourism: Responsible travel to natural areas that conserves the environment, sustains the wellbeing of the local people, and may involve education.

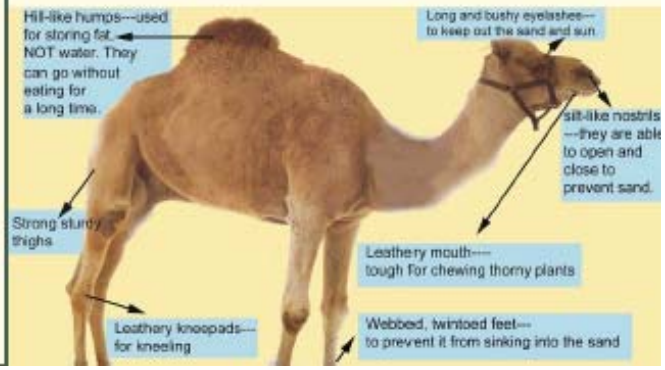
Week 4 – Management

- **Sustainable**- Actions and forms of progress that meet the needs of the present without reducing the ability of future generations to meet their needs.
- **Conservation** means that natural resources such as timber can still be used, but must be used sustainably.
- **Protection** means that the environment should be untouched and humans should not interfere, so ecosystems can find their own balance.

- **Local Scale** – small scale strategies, working with communities.
- **National Scale** – within country by the government.
- **International Scale** – Agreements on a global scale.

Week 5 – Hot Deserts

- Deserts cover one-fifth of the Earth's land surface.
- During the day, temperatures can reach 38°C with extremes of up to 50°C. However, during the night, the temperatures can fall to below freezing.
- Annual precipitation (this means rainfall) is around 40mm and very unreliable.



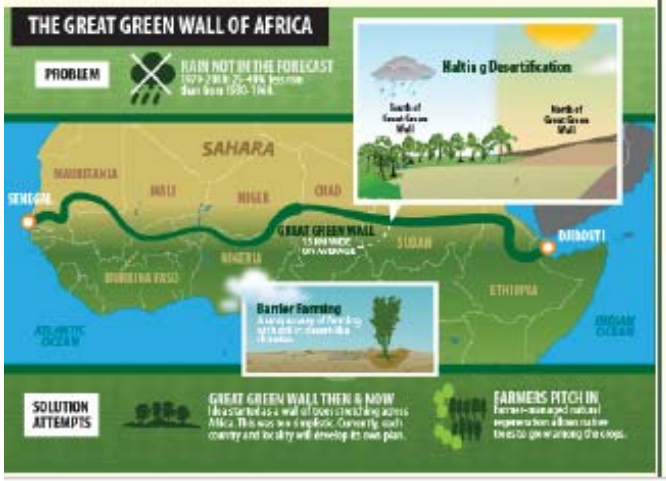
Desertification

On the borders of Hot Deserts are semi-arid areas known as drylands or 'desert-fringe' areas. An example is the Sahel which borders the southern part of the Sahara Desert. This area is at risk of **Desertification.** - The process by which land becomes drier and degraded, as a result of climate change or human activities, or both.

Great Green Wall

Great Green Wall

Project: **Reforestation** of an 8,000 km corridor to combat **desertification** and the effects of **climate change**.
Benefits also include the creation of local jobs.



Case Study: Amazon Rainforest

Location: The Amazon Rainforest is in South America and covers 2.1 square miles of land across many different countries. Brazil has about 480 000 hectares of rainforest and is home to 60% of the Amazon Rainforest.

Biodiversity: The Amazon Rainforest is home to 10% of the known species in the world There are approximately 3,000 fruits that grow in the rainforest that are edible. There are approximately 10 million species of animals, plants and insects known to man. Many plants around the world have medicinal qualities.

Deforestation: The UN estimates that around half of the world's tropical rainforests have now been deforested. The rate of deforestation has fallen in Brazil to a record low. It is estimated that around 50% of Brazil's remaining rainforest now has some form of protection status. However, 20% of the Amazon rainforest has now been cleared since 1970.

Causes:

- **Cattle ranching** accounts for 80% of deforestation
- **Logging** accounts for 3% of the causes of deforestation
- **Roads** link the Trans-Amazon rainforest account for 2%.
- In 1999, there were 10,000 hectares of land being used for gold **mining.** Today, there is over 50,000 hectares of land being used for gold mining.
- **Hydropower:** In Brazil, the Belo Monte Dam will block the Xingu River flooding more than 40 500 hectares of land and displacing 15 000 people.
- **Population growth** and migration to the area is also putting pressure on the Amazon rainforest.

Impacts:

- The roots of trees and plants bind the soil together. As soon as any part of the rainforest is cleared, the thin layer of topsoil is quickly removed by heavy rainfall. Bare slopes are prone to **soil erosion.**
- **Biodiversity** It has been estimated that 137 plant, animal and insect species are being lost each day due to deforestation. This amounts to 50, 000 species each

Case Study – Thar Desert

Location: Thar Desert is the world's seventh largest desert. It is a hostile environment that lies to the west of New Delhi. The desert straddles the border between India and Pakistan and covers over 200,000km squared. It is the most populated desert in the world with nearly 30 million people and is also the most densely populated with 83 people per km2.

Challenges: Hot deserts are hostile, remote and challenging environments for development.

Water supply: Precipitation levels are in the Thar Desert are very low, between 120-240mm, and evaporation rates are high. Stable water supplies are essential for economic development. Water is traditionally stored in natural ponds known as tobas and are used by farmers in remote locations. The Indira Gandhi canal was constructed to provide irrigation and drinking water in 1958. Many settlements have formed along rivers due to the availability of fresh water. However, climate change could lead to river levels being lower which will lead to water scarcity.

Inaccessibility: Covering 200,000km^2, The Thar Desert is vast. Despite having the highest desert population density in the world, it has a limited road network. Tarmac can melt in the hot temperatures, and sand can easily blow over roads.

Extreme Temperatures: Temperatures can exceed 50°C in the Thar Desert which makes it very challenging to for people, such as farmers, to work outside. High temperatures lead to rapid evaporation and a shortage of water.

Opportunities include:

- Mining
- Subsistence Farming
- Commercial Farming
- Energy Supply
- Tourism

The development of a hair or beauty product from conception to launch

Product development process - Design brief, formulation, sourcing, quality and compliance, packaging, product validation, marketing campaign, launch Specialists involved in the development process – Chartered Chemists- Cosmetic chemists are chemistry professionals who focus their research and development on creating new cosmetics, such as make-up, lotions or shampoos.

Toxicologists- A toxicologist is a scientist who researches and identifies the impact of chemicals, toxic materials, new medications and radiation. They test things such as tissue, water, plants, wildlife and air samples for the presence of harmful chemicals.

Microbiologists—A microbiologist helps in finding the right preservation system that will work with the product's function and form.

Regulatory Experts - A regulatory expert is someone who has an important role to play in a company. Their responsibilities are to make sure the product meets all local, national, international and industrial regulations.

Formulation of products

Active ingredient- An active ingredient is the component in the product which brings about a desirable and measurable change in the skin or hair. Compatibility All product formulations must be safe to use and not cause harm to human health. The product formulation should be tested on the particular area on which it will be used to check that it does not cause any harm to the skin (compatibility test)

Stability -Many products contain ingredients that provide the ideal breeding ground for micro-organisms, yeast, bacteria and fungal spores, and preservatives must be added to extend the life of the product and prevent spoilage from these micro-organisms. Consideration should also be given to packaging and storage, as both can extend the lifespan of a product, for example aromatherapy essential oils break down in sunlight and lose potency and should be stored in dark coloured glass bottles.

Preservation- It is vital that cosmetic formulations remain stable for the shelf life of the product. Stability tests are rigorously conducted; combinations of ingredients are tested under different conditions.

Solutions -A solution is a mixture made when a solute dissolves in a solvent. Solvents- A solvent is a liquid that a substance dissolves in. The most common one used in cosmetics is water. Solubility -Solubility is the ability to be dissolved. Some ingredients cannot dissolve. Emulsions -An emulsion is a mixture of oil and water. They will require a stabiliser/emulsifier to prevent the mixture from separating. Gels-A gel is when a liquid is dispersed with a medium solid which then sets to a semi-solid mass which is a gel. Some gelling agents in cosmetics are either synthetic or animal derived so scientists are trying to explore more natural alternatives.

Suspensions—A suspension is a solid particle dispersed in a bulk of liquid.

Relevant legislations and regulations – Cosmetic Products (Safety) Regulations, Cosmetic Products Enforcement Regulations, Trade Descriptions Act During the formulation part of the development of a cosmetic product the legislations and regulations dictate every part of that development.

The different types of design briefs

A design brief is a document for a project developed by a team or an individual in consultation with a client, outlining aims and objectives, timelines and marketing specifica tions to achieve what the client wants.

A client – an organisation (designer, product company), or person (an individual requiring a make-up design for a photoshoot, event) who uses the services of a professional company or person

Types of briefs - Creative brief – used for visual designs, copy, advertising and websites etc., usually directional (has a target market, a message, etc.) Examples include: magazines, product launches, fashion shows . **Product design brief** – a plan to design the goals and attributes of a product, examples include: a new product design (target audience, packaging, ingredients, etc.), plans for a theatre production (characters, costumes, scenes and settings)

Design principles

Design principles – rules to help guide important decision making throughout a project and help to develop a well-designed, attractive and effective presentation. Basic design principles – examples include: research, clarity, make it concise and to the point, make it memorable, make it balanced, clearly communicated, meet the needs of the brief

The use of research methods to help develop and inspire ideas for a design brief

Approaches to research – primary and secondary methods; Qualitative- data representing information and concepts that are not represented by numbers. Quantitative- data represented numerically, including anything that can be counted, measured, or given a numerical value. Finding information – sources, examples include: internet, social media, professional and trade magazines, journals and books, historical archives, photographs, paintings, films, television, theatre, local and national newspapers, business owners, industry professionals, customers. Analysing collected information – in terms of relevance, quality and reliability

Problem solving during a design brief project

Problem solving methods – Thought showers-
A 'thought shower' is a discussion in which new ideas are generated and discussed troubleshooting.

Mind mapping- A mind map is a visual diagram used to represent and organise information.

Word play- Word play is about the clever and witty use of words and their meanings . As a problem-solving method it is a more light-hearted group activity whereby a team can play on words and how words come together.

Interpret and plan a design brief

Client needs – ideas, research, organisations and products, style, function and purpose of brief, audience, age, race, gender, occupation, location, income, what needs to be produced/created, time restraints, costs, products, equipment, tools and materials needed. **Creative constraints –** availability of resources and materials, viability of ideas, technical requirements. **Personal intentions –** personal skills, building on strengths, self-development/CPD to be able to complete the brief . **The target audience –** tailoring the presentation to meet the target audience/clients' needs and requirements, timescales, feasibility, importance of analysis prior to developing design ideas

Importance of developing and reviewing action plans

Purpose of an action plan/development plan – a document that lists steps that need to be completed to achieve a goal that is set, goal can be set by self or others, used in education and project management. Key points in an action plan/development plan – what actions will take place, who will carry out the actions (yourself or client), when they will take place and for how long, what resources are needed, communication (who should know what) . SMART targets – specific, measurable, achievable, realistic and timebound. Regular reviews – to modify and update, learning from mistakes, evolution of ideas. Timescales, reviews for targets (short term, medium term, long term), what is working and what is not, discuss with mentor/line manager/trainer, adaptation of action plan, consider whether current support is appropriate, identify new support, identify new resource .

Presenting design brief ideas- Artistic principles for presenting design briefs ideas

Experimentation – using a variety of ideas, techniques and materials: - Formal elements – line, tone, shape, form, pattern, texture, colour, space, balance, emphasis, movement, pattern, repetition, proportion, variety. Frame and composition – examples include: rule of thirds, golden ratio, grids, perspective, direction. Visual language – use of colour, materials, shapes, lines, fonts.

Communicate and present design brief ideas

Communicating design brief ideas - Avoid technical language where possible, always respond and consider clients' /customers' confidentiality and requirements. Verbal – speaking (tone of voice, language used, how quickly and clearly), questioning (open, closed, probing) Non-verbal – body language, positive attitude (posture, facial expressions, hand gestures, distance), listening (be patient, try to understand) Presenting design brief ideas - Formal/informal presentation, an actual board or via computer software, PowerPoint presentation, portfolio, additional props, prepared speech/prompt cards, professional, varied communication skills (body language, tone, clarity, projection of voice). Interpersonal skills - Plan, prepare relevant information, samples, images, models before the presentation, practise before the final presentation, follow the mood board/plan during the presentation, work in an organised and methodical way, speak clearly, keep to the plan. Look and feel of presentation, use of colours and textures, how components, materials and media complement one another and how they satisfy the client needs/target market and hair and beauty brief

The importance of feedback

Definition of feedback - Structured, clear and constructive guidance that one person offers to another on what has been achieved and areas requiring development; can be verbal and/or written. Importance of feedback - Review and update action plan/development plan o Influence individuals to do something differently, or to change their approach, recognise and reward effort, improve the quality of the work they do, build and maintain relationships, influence motivation and manage performance. Responding to feedback - Listen, reflect, ask for support in improving, ask for direction if not meeting the design brief, plan next steps.

Use outcomes of review and reflection to inform future action planning

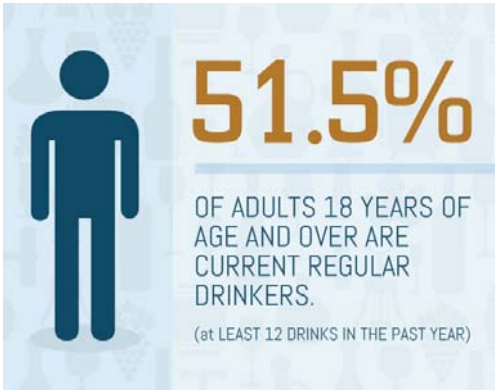
Reflective practice and reviewing own performance

Identify what went well and what could have gone better, reflect on areas for improvement, what could be done differently next time, self-evaluation of strengths and weaknesses (SWOT)

R035- Health Promotion Campaigns

Cambridge National Health and Social Care - Year 11

Alcohol Consumption



Task 1a- Choose a public health challenge

- Statistics regarding alcohol consumption in the UK
- Importance to society
- Bigger picture in regard to society
- Current health promotion campaigns
- Why you have chosen the issue
- The impact of an improvement in the issue

Task 1b

- Target audience for your health campaign
- Factors that could influence the target audience
- Barriers to leading a healthy lifestyle
- Benefits of following the health campaign (PIES)

Task 2- Plan your health promotion campaign

- Aims of the campaign
- Timescales
- Resources needed
- Safety considerations
- Communication
- Methods to engage target audience
- How you will gather feedback

Task 3- Deliver your health promotion campaign

- Introduce the health promotion campaign
- Deliver the health promotion campaign
- Collect feedback from your audience
- Use correct/appropriate communication skills

Task 4- Evaluate your own performance

Strengths/weaknesses of:

- Planning
- Communication skills
- Engagement of individuals
- What you would improve on next time

The American West, c1835-c1895

TIMELINE OF EVENTS

1830 = Indian Removal Act
1836 = Oregon Trail opens
1846-47 = Donner Party & Mormon Migration
1849 = Californian Gold Rush
Feb 1851= Indian Appropriations Act
Sept 1851 = Fort Laramie Treaty
1861-1865 = American Civil War
May 1862 = Homestead Act
July 1862 = Pacific Railway Act
1862 = Little Crow's War
1864 = Sand Creek massacre
1866 = Goodnight-Loving Trail opens
1867 = First "cowtown" (Abilene)
1868 = Red Cloud's War
1869 = Transcontinental railroad completed
June 1876 = Battle of the Little Bighorn
1879 = Exoduster Movement
1881 = Billy the Kid is shot dead
1883 = Buffalo herds exterminated
1886-1887 = "The Great Die-Up"
1887 = The Dawes Act
From 1889 = Land Rushes
1890 = Indian Frontier is closed
Dec 1890 = Wounded Knee massacre
1892 = Johnson County War

The early settlement of the West, c1835–c1862

The Indigenous peoples of the Plains

The people who lived in America before Europeans travelled to the continent had been pushed back from the coast to live on the Great Plains, beyond what the US government called "The Permanent Indian Frontier".

On the Great Plains the Indigenous people adapted to survive: they lived in tribes, hunted the buffalo and used it for nearly all of their essentials, their homes were mobile and wind proof, they relied on horses to cover vast distances and they learned to relocate during the winter.

This meant that they had a deep respect for the land and nature. The tribes competed with each other for resources, had an informal leadership system based on ability and had little concept of land ownership (as they were nomadic).

To the white settlers they appeared "uncivilised" and best left alone.

Early Pioneers

Adventurers went west to explore America. Mountain Men made money by hunting animals and selling their furs. These men learned the best routes across America. The South Pass in the Rocky Mountains was found by Jedidiah Smith in 1825. They also spread rumours about the incredible climate and fertile land in California and Oregon.

Farmers

People living in the East of the USA had heard about the land in the West and wanted to start a new life. Their lives in the East were often tough due to overcrowding and economic collapse in the late 1830s. The first settlers to use the Oregon Trail in a covered wagon went in 1836. Many more followed them (400,000 by 1869). Most farmers travelled to Oregon or California, but a few settled on the Great Plains themselves where they faced great challenges (and conflict with the Indians).

Mormons

The religious group known as the Mormons had been attacked and persecuted wherever they tried to set up a home in the east. In 1846 they set out for the West and established Salt Lake City and later, the state of Utah as their home. They worked with the Plains Indians and converted many. The Mormons paid for and helped many settlers to travel to Utah to join them.

Gold Miners

In 1849 gold was discovered in California; in 1858 it was also discovered in the Rocky Mountains. Over 300,000 people travelled west in under 10 years to seek their fortune. The places they settled in were basic, full of greedy people and they had lots of crime problems due to a lack of law and order.

In order to try and limit the conflict between settlers and the Plains Indians, the US government passed two new laws in 1851:

Indian Appropriation Act - request for money to spend on moving Indians to different areas.

Fort Laramie Treaty - a deal with Indian tribes to allow settlers to move across their land in peace.

The "Permanent Indian Frontier" was no more.

Development of the Plains, c1862–c1876

The Homestead Act 1862 – Offered plots of 160 acres (one square mile) to a family for only $10. If the family farmed the land for 5 years, they could buy the land for $30 and own it forever. Homesteaders settled 6 million acres of land in the West by 1876.

Pacific Railroad Act 1862 – Two railroad companies were set up to build a railroad across the USA: The Union Pacific and the Central Pacific. The US government provided $61 million of loans to build the railroad and gave the companies 45 million acres of free land to build on. The Transcontinental Railroad was completed in 1869, making the journey across the USA much faster and easier. Migration sped up. By 1880, the railroad companies had helped settle 200 million acres of land it was more successful than the Homestead Act! Later the US Government realised they had to help to improve communications and living standards in the West so they extended the railroad network to more towns and passed the

Timber Culture Act in 1873 – This law said that if settlers planted trees on half their land they would be given another 160 acres of land for free.

EXAM STYLE QUESTIONS

- Explain two consequences of the Gold Rush of 1849.
- Write a narrative account analysing the early settlers 1825-49.
- Write a narrative account analysing the settlement of the West 1860-73.
- Explain the importance of the buffalo for the Indigenous peoples of the Plains.
- Explain the importance of the tipi for the Indigenous peoples of the Plains.

The American West, c1835-c1895

TIMELINE OF EVENTS

1830 = Indian Removal Act
1836 = Oregon Trail opens
1846-47 = Donner Party & Mormon Migration
1849 = Californian Gold Rush
Feb 1851= Indian Appropriations Act
Sept 1851 = Fort Laramie Treaty
1861-1865 = American Civil War
May 1862 = Homestead Act
July 1862 = Pacific Railway Act
1862 = Little Crow's War
1864 = Sand Creek massacre
1866 = Goodnight-Loving Trail opens
1867 = First cow town (Abilene)
1868 = Red Cloud's War
1869 = Transcontinental railroad completed
June 1876 = Battle of the Little Bighorn
1879 = Exoduster Movement
1881 = Billy the Kid is shot dead
1883 = Buffalo herds exterminated
1886-1887 = "The Great Die-Up"
1887 = The Dawes Act
From 1889 = Land Rushes
1890 = Indian Frontier is closed
Dec 1890 = Wounded Knee massacre
1892 = Johnson County War

Development of the plains, c1862–c1876

After the Civil War there were millions of wild cattle in Texas (longhorn cows) and a shortage of beef in the eastern cities. Entrepreneurs and business people realised they could make big profits by buying the cattle cheaply in Texas and then selling them for a lot in the north, east, and west. The problem was transporting them. **John Iliff** set up the first ranches to rear cattle close to areas where there was no railroad – this made lots of cash. **Joseph McCoy** set up **Abilene** as the first "cow town" by building a stock yard and hotels (and marketing them). **Charles Goodnight** found a trail going west. The Goodnight-Loving trail provided beef to Indian reservations too. Cow towns appeared next to the railroad where cattle could be sold and loaded onto trains. Working on a ranch was very different from driving the cattle over the open range – some cowboys liked the stability of living on the ranch with regular pay, but most wanted the freedom of the open trail and the excitement once they got to the cow towns (and got paid).

The Indians started to fight back

Little Crow's War 1862: Starving people on a reservation fight back and steal food. They are defeated.
Sand Creek Massacre 1864: Black Kettle's village attacked by Colonel Chivington, survivors want revenge.
Red Cloud's War 1866-68: An alliance of tribes attacks US Army forts in their territory and wins.
Fort Laramie Treaty 1868: US Government takes down forts in Red Cloud's territory.
President Grant's Peace Policy 1868: an effort to make the reservations better to avoid Indian conflict.

Conflicts and conquest, c1876–c1895

In 1874 gold was discovered in the Black Hills of Dakota – this was a sacred area for the Sioux tribe and they would not sell it to the US government. As miners moved in and broke the Fort Laramie Treaty. Warriors left the reservations and formed an army. The US Cavalry was sent in to clear out the Indigenous army. 1876 marked a turning point in the way the US government dealt with the tribes – it was the year of the **Battle of Little Bighorn** – when the US Cavalry was beaten by Sitting Bull and Crazy Horse's warriors. After the battle, the US government wanted to solve the Indian question once and for all. **Reservations became smaller, children were sent to white boarding schools, Christianity was taught to Indians and farming was encouraged.** The buffalo herds were hunted nearly to extinction by whites (by 1883 they were almost wiped out). In **1887 The Dawes Act** was passed that offered 160 acre plots of land to individual Indigenous people. More and more Indigenous people became farmers and any leftover land was offered to white settlers in "Land Rushes". In desperation the tribes started to follow the **Ghost Dance** movement that was hoped to make all white people disappear and restore the tribes to their former glory. Instead it led to the **Wounded Knee Massacre in 1890** when people following the Ghost Dance movement were asked to give up their weapons and a firefight broke out. Wounded Knee marks the end of armed resistance of the Native Americans against the United States of America.

Conflict between the Ranchers and the Homesteaders

As the number of farmers increased in the West, conflict was inevitable (going to happen). Farmers wanted their crops to grow and ranchers wanted their cattle to roam freely across the plains to feed.
Cattle ranchers had lots of money and support from government.
The most famous conflict between the two groups was the **Johnson County War in 1892.**
After a period of cattle rustling, the ranchers paid for armed men to deal with the local farmers. The farmers fought back and the US Cavalry had to come and save the ranchers' "army". It showed that the ranchers were more powerful, and sometimes above the law.
Eventually conflict between the two groups reduced as more and more farmers (and ranchers) fenced off their land with barbed wire as well as law enforcement improved with better communications.

Lack of Law and Order

Communications between the Eastern USA and the West took time to build and connect. Telegraph wires were built along with railway tracks across the Great Plains. This meant that law and order was slow to respond and not directed from Washington DC until the end of the century. This led to lawmen being elected to defend individual towns – one example is **Wyatt Earp** who used violence to control lawless cowboy gangs in Tombstone, Arizona. It was easier for criminals to get away with crimes due to the lack of law and order: one example was **Billy the Kid** who went on a revenge killing spree across New Mexico from 1878-81.

EXAM STYLE QUESTIONS

- Explain two consequences of the Battle of the Little Bighorn.
- Write a narrative account analysing the Indian Wars 1860-68.
- Write a narrative account analysing the end of Indigenous people's society 1876-91.
- Explain the importance of the Dawes Act for ending the tribes' way of life.
- Explain the importance of the Johnson County War for law and order.

Weimar Germany, 1918–33

The Effects of The First World War on Germany:
11 million Germans fought in the war
2 million German soldiers were killed
4 million German soldiers were injured
750,000 German civilians died from hunger and disease
By November 1918, German soldiers weren't following orders and German cities were facing riots and strikes.

Treaty of Versailles:
The new German government had to sign the treaty that ended the First World War – this made them very unpopular because the terms were very harsh.
Germany was left weak (small army, navy, and no air force).
Germany lost lots of land.
German had to pay damages to the winning countries (reparations).

Germany after the First World War
Due to the German Army falling apart with lots of mutinies and the German civilians starving in the cities, there is a revolution which removes the Kaiser and creates the Weimar Republic. The new government is a democracy with a President, Chancellor, two houses of parliament and votes for everyone over the age of 21.
The new government has to agree to the ceasefire (armistice) and sign the Treaty of Versailles which takes away German land and limits the army to a tiny 100,000 men. Not a great start for a new government!

Weimar Republic in trouble 1919-23
After the First World War and the German Revolution, lots of political parties have private armies to protect them. Plus, there are lots of ex-soldiers called "Freikorps" who haven't given back their rifles and whose allegiance is unclear.
The Weimar Republic is new and is hated for signing the Versailles Treaty – it faces two challenges on its power.
Spartacist Uprising in 1919 is a Communist attempt on power and is stopped by the Freikorps
Kapp Putsch in 1920 is a Nationalist attempt to bring back the Kaiser and is stopped by the workers going on strike.
The Weimar Republic is only just hanging on!

Weimar Republic Recovers under Stresemann
Gustav Stresemann works as the Chancellor for a few months but then as the Foreign Minister for 5 years.
In these roles, Stresemann not only fixes the problems in Germany, but makes the Weimar Republic more popular because the German people are happier.
He introduces a new currency (Rentenmark) to stop hyperinflation; he gets the French out of the Ruhr with the Dawes Plan (1924) that secures massive American loans to boost the German economy.
Life in Germany gets better. The government uses the money to pay reparations and to invest in industry. The economy grows, unemployment falls, people have more money to spend, and Germany experiences some good years in the 1920s.
Stresemann also makes Germany look good in the world too – the Locarno Pact in 1925 (sets borders), joining the League of Nations in 1926 (international meetings), and the Kellogg-Briand Treaty in 1928 (promise not to go to war) all show Germany to be a "good" and honourable nation rather than the enemy from the First World War.

Rise of the Nazi Party
Hitler joins the DAP (German Workers' Party) in 1919
Hitler and Drexler (the leader of the DAP) draw up a 25 Point Programme, introduce the salute, the swastika, and change the name of the party to the National Socialist German Workers' Party (NSDAP or Nazi for short).
Membership increases to around 3000 by 1921 and Hitler is made the leader of the Nazis.
In 1923, Hitler and Nazis try to take power by force in Munich. It is a turning point for the party in many ways – Hitler goes to jail and writes Mein Kampf, he decides that votes are the way to win power, not revolution; and finally, he decides to reorganise the party.
Between 1924 and 1929 Hitler gets support from businesses that are afraid of the Communists and uses this money to pay for more SA troops. The SS are set up and propaganda begins with the help of Goebbels.
Despite these changes, the Nazi Party remains a small, radical party with only 3% of the vote (because the Weimar Republic is doing well and Germans are happier).
All the Nazis need is for some sort of problem or disaster to make Germans hate the government.

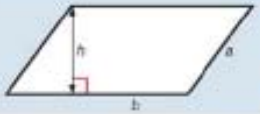
Wall Street Crash (1929) and its effects
The USA's economy is in ruins, so they call in all their loans around the world. Germany has to pay back the loans and continue reparation payments to Britain and France.
Unemployment reaches 6 million, production falls by 40% and the only solution offered by the Weimar Republic is more taxes to pay for unemployment benefits.
Votes for the Nazis and Communists increase because they offer solutions (Nazi votes in 1928 =1m, 1930 = 6m, 1932 = 13m)

Political problems
The Socialist Chancellor Von Bruning tries to ban the SA and SS but instead makes the right-wing parties (Nationalists) all team up against him in a coalition.
Von Bruning is sacked and von Schleicher works behind the scenes whilst von Papen takes over as Chancellor.
Hitler and the Nazis are finally invited into government and once there, they disrupt parliament until it cannot get any work done. With fighting in the streets between the SA and Communists, arguments in the Reichstag, and Nazi propaganda telling everyone they will bring order; Hitler is made Chancellor in January 1933 (after Von Schleicher attempts to take control with the military).

Areas

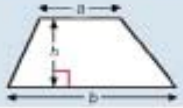
Rectangle = $l \times w$

Parallelogram = $b \times h$



Triangle = $\frac{1}{2} \times b \times h$

Trapezium = $\frac{1}{2}(a+b)h$



Circles

Circumference =

$\pi \times diameter = \pi d$

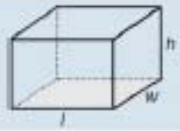
$2 \times \pi \times radius = 2\pi r$

Area of a circle =

$\pi \times radius\ squared = \pi r^2$

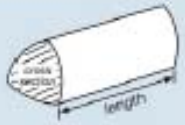
Volumes

Cuboid = $l \times w \times h$



Prism =

$area\ of\ cross\ section \times length$



Cylinder = $\pi r^2 h$

Compound measures

Speed

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

Density

density = $\frac{mass}{volume}$

Pressure

pressure = $\frac{force}{area}$

Constructing Pie Charts

The angle to draw for each sector is

$$\text{Angle} = \frac{\text{frequency}}{\text{total}} \times 360°$$

Angles in Polygons

Sum of Interior Angles $= (n-2) \times 180°$

Where n is the number of sides of the shape

Exterior Angles add up to 360°

One exterior angle in a REGULAR polygon $= \frac{360°}{n}$

$Interior + Exterior = 180°$

Other useful formulae

$gradient = \frac{change\ in\ y}{change\ in\ x}$

$\%\ change = \frac{difference}{original} \times 100$

Types of numbers

SQUARE NUMBERS

→ 1, 4, 9, 16, 25, 36, 49, 64, 81, 100 etc

(1x1) (2x2) (3x3) (4x4) (5x5) (6x6) (7x7) (8x8) (9x9) (10x10)

CUBE NUMBERS

→ 1, 8, 27, 64, 125 etc

(1x1x1) (2x2x2) (3x3x3) (4x4x4) (5x5x5)

PRIME NUMBERS

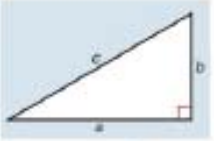
→ 2, 3, 5, 7, 11, 13, 17, 19, 23, 29 etc

Right-angled triangles

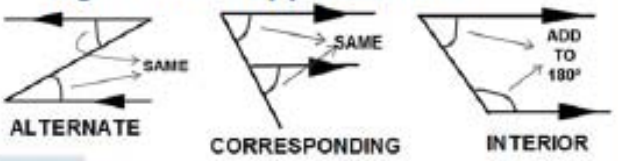
Pythagoras' Theorem

For a right-angled triangle,

$a^2 + b^2 = c^2$



Angles formed by parallel lines



Trigonometric ratios (*new to F*)

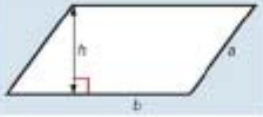
$\sin x° = \frac{opp}{hyp}$, $\cos x° = \frac{adj}{hyp}$, $\tan x° = \frac{opp}{adj}$

Foundation Formula Quiz

Areas

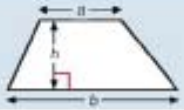
Rectangle =

Parallelogram =



Triangle =

Trapezium =



Circles

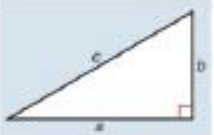
Circumference =

Area of a circle =

Right-angled triangles

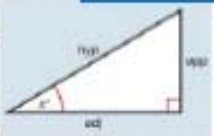
Pythagoras' Theorem

For a right-angled triangle,



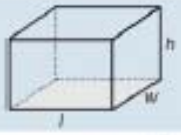
Trigonometric ratios (*new to F*)

sin $x°$ = cos $x°$ = tan $x°$ =

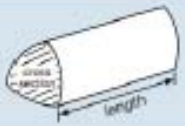


Volumes

Cuboid =



Prism =



Cylinder =

Compound measures

Speed

speed =

Density

density =

Pressure

pressure =

Angles formed by parallel lines

Constructing Pie Charts

The angle to draw for each sector is

Angle =

Angles in Polygons

Sum of Interior Angles =

Where *n* is the number of sides of the shape

Exterior Angles add up to

One exterior angle in a REGULAR polygon =

$Interior + Exterior =$

Other useful formu-

$gradient =$

$\%\ change =$

Types of numbers

SQUARE NUMBERS

CUBE NUMBERS

PRIME NUMBERS

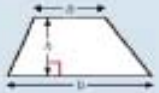
Foundation Formula Quiz

Areas

Parallelogram = $b \times h$

Triangle = $\frac{1}{2} \times b \times h$

Trapezium = $\frac{1}{2}(a+b)h$



Circles

Circumference =

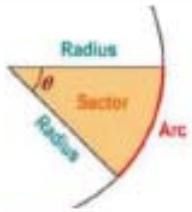
$\pi \times diameter = \pi d$

OR

$2 \times \pi \times radius = 2\pi r$

Area of a circle =

$\pi \times radius\ squared = \pi r^2$



Area of a Sector

$A = \frac{\theta}{360^\circ} \times \pi r^2$

Length of an Arc

$A = \frac{\theta}{360^\circ} \times \pi d$

Volumes

Prism =

$area\ of\ cross\ section \times length$

Cylinder = $\pi r^2 h$

Volume of pyramid =

$\frac{1}{3} \times area\ of\ base \times h$

Angles in Polygons

Sum of Interior Angles $= (n-2) \times 180°$

Where n is the number of sides of the shape

Exterior Angles add up to 360°

One exterior angle in a REGULAR polygon $= \frac{360°}{n}$

$Interior + Exterior = 180°$

Compound measures

Speed

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

Density

density = $\frac{mass}{volume}$

Pressure

pressure = $\frac{force}{area}$

Right-angled triangles

Pythagoras' Theorem

For a right-angled triangle,

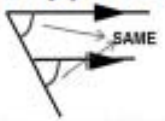
$a^2 + b^2 = c^2$

Trigonometric ratios (*new to F*)

$\sin x° = \frac{opp}{hyp}$, $\cos x° = \frac{adj}{hyp}$, $\tan x° = \frac{opp}{adj}$

Angles formed by parallel lines

ALTERNATE



CORRESPONDING

INTERIOR

Quadratic equations

The Quadratic Equation

To solve a quadratic equation in the form:

$ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Indices and surds

$a^0 = 1$ $\quad a^{\frac{1}{2}} = \sqrt{a}$

$a^{-n} = \frac{1}{a^n}$ $\quad a^{\frac{1}{n}} = \sqrt[n]{a}$

$\sqrt{a \times b} = \sqrt{a} \times \sqrt{b}$

$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

Straight lines

$gradient = \frac{change\ in\ y}{change\ in\ x}$

Given a gradient of a line m, the gradient of the line perpendicular to it is: $-\frac{1}{m}$

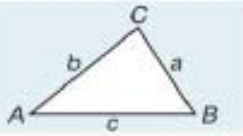
Perpendicular gradients multiply to give −1.

Trigonometric formulae

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

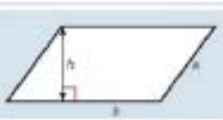
Area of triangle $= \frac{1}{2} ab \sin C$



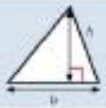
x	0°	30°	45°	60°	90°
$\sin x$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
$\cos x$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
$\tan x$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	Undefined (asymptote)

Areas

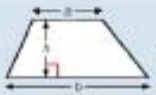
Parallelogram =



Triangle =



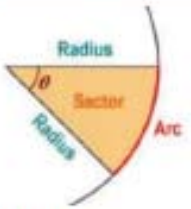
Trapezium =



Circles

Circumference =

Area of a circle =



Area of a Sector

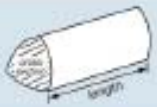
$A =$

Length of an Arc

$A =$

Volumes

Prism =



Cylinder =

Volume of pyramid =

Angles in Polygons

Sum of Interior Angles =

Where n is the number of sides of the shape

Exterior Angles add up to

One exterior angle in a REGULAR polygon =

$Interior + Exterior =$

Compound measures

Speed

speed =

Density

density =

Pressure

pressure =

Right-angled triangles

Pythagoras' Theorem

For a right-angled triangle,

Trigonometric ratios (new to F)

$\sin x^\circ =$ $\cos x^\circ =$ $\tan x^\circ =$

Angles formed by parallel lines

Quadratic equations

The Quadratic Equation

To solve a quadratic equation in the form:

$ax^2 + bx + c = 0$

Indices and surds

$a^0 =$ $a^{\frac{1}{2}} =$

$a^{-n} =$ $a^{\frac{1}{n}} =$

$\sqrt{a \times b} =$

$\sqrt{\frac{a}{b}} =$

Straight lines

$gradient =$

Given a gradient of a line m, the gradient of the line perpendicular to it is:

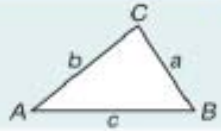
Perpendicular gradients multiply to give

Trigonometric formulae

Sine Rule

Cosine Rule

Area of triangle =



x	0°	30°	45°	60°	90°
$\sin x$					
$\cos x$					
$\tan x$					

Week 1: The Oneness of God (part 1)

⇒ One of the most important beliefs for Muslims is Tawhid (the belief that there is only one God).
⇒ This belief is repeated daily in the Shahadah (one of the five pillars).
⇒ A Muslim's most important duty is to declare faith in one God.
⇒ God is unique. No one can picture God which is why there isn't any pictures or statues of Him in Islam.
⇒ God is the only creator and controller of everything.
⇒ Muslims believe they should accept whatever happens as the will of God (supremacy of God's will)

'Say, He is God the One, God the eternal'. Quran 112:1-4
' Misfortunes can only happen with God's permission'. Quran 64:11

Enquiry task: Explain Muslim beliefs about the oneness of God. Refer to sacred scripture in your response [5]

Week 1: The Nature of Allah (part 2)

Enquiry Task:

Muslims believe God is:

⇒ Immanent (present in earth and involved with humanity)
⇒ Transcendent (outside life and beyond understanding)
⇒ Omnipotent (all-powerful)
⇒ Beneficent (all-loving and all-good)
⇒ Merciful (compassionate and forgiving)
⇒ Just (fair and judges humans actions)

'There is no God but Him, the Creator of all things'. Qur'an 6:102
'He is with you wherever you are'. Qur'an 57:4

Enquiry task: Explain how God can be both transcendent and immanent?

Week 2: Angels

Muslims believe angels bring the words of God to the prophets. They have no free will and are made from elements of light. Their roles are: Messengers, Guardians of people, Recording actions of humans,

Jibril:

⇒ Archangel
⇒ Relayed the Qur'an to Muhammad
⇒ Guided Muhammad through his entire life

Mika'il:

⇒ Archangel
⇒ Angel of Mercy
⇒ Responsible for sending rain, thunder and lightning

Enquiry Task: Explain the importance of Jibril to Muslims [4]

Week 3: Predestination

Sunni:

⇒ Believe God has already determined everything that will happen in the universe.
⇒ Linked to Sunni belief of the supremacy of God's will.
⇒ Doesn't mean that people have no choice about how they behave.

'Only what God has decreed will happen to us'. Qur'an 9:51

Shi'a:

⇒ Believe that God knows everything that is going to happen, but does not decide what is going to happen.
⇒ Shi'a Muslims do not see conflict between supremacy of God's will and human freed to act freely and make choices as God knows what you will choose but does not choose for you.

Enquiry Task: Predestination means humans have no freedom.

Evaluate this statement.

Week 4: Life after Death

For Muslims death isn't the end but the start of a new stage of life called Akhirah. After death you lie in the grave waiting for the day of Judgment this is called Barzakh. Angels are sent to question them about their life. If they are good and honest they will be rewarded if they are bad an untruthful they will be punished.

⇒ Heaven is described as the gardens of happiness, it is a reward for faith and good deeds
⇒ Hell is described as a place of fire and great torment and punishment for those who reject God and do evil

Enquiry Task: Can God be both merciful and a judge who punishes?

Week 5: Prophethood (part 1)

⇒ God has chosen people to bring the message of Islam to the people. These chosen people are called prophets.
⇒ They are important because they provide communication between God and humans.
⇒ In order for humans to live how God wants it is necessary for instructions to be delivered through prophets
⇒ Around 124,000 prophets of which 25 are named in the Qur'an
⇒ They are important role models as they were good people who lived according to God's will.

Adam:

⇒ First man on earth and first prophet of Islam
⇒ Father of the human race so treated with great respect
⇒ God created Hawwa (Eve) to stop Adam being lonely

They were told not to eat from the tree in the middle of the garden but they did and so sin entered the world.

Week 5: Prophethood (part 2)

Ibrahim:

⇒ Fulfilled all the tests and commands God gave him.
⇒ Was promised to be the father of all nations.
⇒ Demanded people to stop idol worship. Was supposed to be burnt alive but survived (miracle) so people began to follow God.
⇒ Re-built the Ka'aba after it was destroyed.
⇒ Stopped idol worship, gave the message of one God and rebuilt the Ka'aba

Muhammad:

⇒ Muhammad received the final revelation of Islam from God.
⇒ Known as the last and greatest prophet.
⇒ In 610CE on Mount Hira received his first revelation from God through the angel Jibril.
⇒ For more than 20 years received further revelations, which were combined together to make the Qur'an.

Enquiry Task: Explain the importance of Muhammad for Muslims [4]

Week 6: Holy Books

The Quran:

⇒ The Qur'an is the direct word of God, revealed to Muhammad over a period of around 22 years.
⇒ Contains the foundation of every believer's faith.
⇒ Is most sacred of all the holy books.
⇒ Is infallible (without error and non-changing)
⇒ There are 114 surahs (chapters) in total.
⇒ Those who can recite the Qur'an from memory are given the title 'Hafiz'.

The Torah (Tawrat):

⇒ Given to Moses (Musa).
⇒ Essentially the first five books of the Bible but additions and subtractions have been made.

The Psalms (Zabur):

⇒ Revealed to David
⇒ Similar to the Psalms in the Bible.

The Gospel (Injil):

⇒ Revealed to Jesus (Isa).
⇒ It is thought to have been lost but some of its message is still found in the Bible.

Scrolls of Ibrahim:

⇒ One of the earliest scriptures of Islam, revealed to Ibrahim.
⇒ No longer exist as they have been lost.

Enquiry Task: Why is the Quran considered the most sacred?

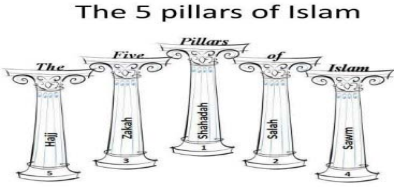
Week 7: The Five Pillars (part 1)

Support the main principles and beliefs of Islam, just as pillars are used to support a building. They help give Muslims an identity as one community and enable them to show their obedience and dedication to God.

Five pillars are:

⇒ Shahadah – declaration of faith in God.
⇒ Salah – prayer.
⇒ Zakah – charitable giving.
⇒ Sawm – fasting.
⇒ Hajj – pilgrimage.

Enquiry Task: Which of the 5 Pillars do you think a Muslim would find the easiest to follow. Why?



Week 8: The Ten Obligatory Acts (part 2)

For Muslims who follow the Twelver Shi'a Islam, there are ten duties they must follow. They include the five pillars except for Shahadah.

Ten Obligatory Acts:

⇒ **Salah:** prayer.
⇒ **Sawm:** fasting.
⇒ **Zakah:** Charitable giving.
⇒ **Khums:** a 20 percent tax on income once all expenses are deducted.
⇒ **Hajj:** pilgrimage
⇒ **Jihad:** the struggle to maintain the faith and defend Islam.
⇒ **Amr-bil-Maruf:** encouraging people to do what is good.
⇒ **Nahi Anil Munkar:** discouraging people from doing what is wrong.
⇒ **Tawallah**: to be loving to the friends of God, including Muhammad and the Imams.
⇒ **Tabarra**: disassociating from the enemies of God.

Enquiry Task: draw a symbol to represent each of the Ten Obligatory Acts

Week 9: Salah

Times of prayer:

⇒ Some Muslims are required to pray at 5 set times during the day.
⇒ They pray: just before sunrise, just after midday, afternoon, just after sunset and night.
⇒ Shi'a Muslims combine the midday and afternoon prayers, and the sunset and night prayers, so they pray 3 times a day.

Preparation for prayer:

⇒ It is important to be spiritually clean before prayer.
⇒ Muslims complete ritual washing or ablution which is called **wudu**.
⇒ Mosques have special rooms for washing, one for men and one for women.
⇒ It is completed with running water, if this is not possible they use sand or dust.

Direction of prayer:

⇒ It is important Muslims face the holy city of Makkah while praying.

Enquiry Task: Explain two ways in which the belief in the importance of prayer influences Muslims today [4]

Week 10: Sawm

⇒ Ramadan is the ninth month of the Islamic calendar and the time when they focus on fasting.
⇒ Muslims fast during daylight hours, so will wake up before sunrise to eat and drink enough to keep them going until sunset.
⇒ The command to fast can be found in the Qur'an, and it has been obligatory for Muslims to do it since the seventh century.
⇒ For Muslims fasting is not just about food or drink, smoking and sex are also forbidden in daylight hours.
⇒ The whole focus during the month of Ramadan is on God, for which purity of thought is required in order to cleanse the soul and free it form harm.
⇒ Fasting requires self-discipline, but allows Muslims to show they can sacrifice their physical needs as evidence of their submission to God.

'It was in the month of Ramadan that the Qur'an was revealed as guidance for mankind… Soany one of you who is present that month should fast'. Qur'an 2:18

Enquiry Task: How does fasting help Muslims focus on the poor?

Week 11: Zakah

⇒ Zakah is giving alms (giving money to the poor).
⇒ For Muslims who have enough savings it is compulsory to give 2.5 percent every year
⇒ By giving Zakah, Muslims acknowledge that everything they own comes from God, and that they should use their wealth to remember God and give to those in need.
⇒ Only Muslims who have savings greater than a certain amount are required to give Zakah.
⇒ Zakah can be donated directly to a charity such as Islamic relief or can be put into a collection box in the mosque to be distributed.
⇒ In addition to giving Zakah Muslims are encouraged to voluntarily give their money and time to charity at any point of the year. This is called Sadaqh.

Enquiry Task: What do you think the obligation to give Zakah teaches Muslims?

Week 12: Hajj

Hajj is a pilgrimage. It should be made at least once in a Muslim's lifetime, provided they ar healthy and wealthy enough to do so. Hajj starts and ends in the holy city of Makkah.

'Pilgrimage to the House is a duty owed to God by people who are able to undertake it'. Qur'an 3:97

⇒ Many Muslims go a number of times even though it is a requirement to only go once.
⇒ It can bring about a deep spiritual transformation that makes them a better person.
⇒ It teaches sincerity and humility in a person's relationship with God.
⇒ It shows self-discipline. The physical and mental demands it imposes are great.
⇒ It emphasises unity and equality.
⇒ It reminds Muslims of the faith and examples set by Ibrahim, Hajira and Ishmael.
⇒ It can lead to forgiveness of sin.

Enquiry Task: Explain two Muslim teachings about Hajj [4]

Week 13: Jihad

Jihad is an important concept for Muslims. It refers to struggling against evil, either as an individual or as the collective fellowship of Islam.

Greater Jihad:

⇒ A personal inward struggle of all Muslims to live in line with the faith.
⇒ They must observe the five pillars to bring them closer to God.
⇒ Muslims must devote their lives to God by avoiding temptations like drugs and alcohol.

Lesser Jihad:

⇒ Less important that greater Jihad. It is the outward struggle to defend Islam.
⇒ Muslims must follow the rules set about by Holy War when taking on the task of lesser Jihad.
⇒ Neither lesser Jihad nor holy war should be used to defend terrorist attacks. However lesser Jihad in misinterpreted in modern times

Enquiry Task: Explain two ways Muslim beliefs about Jihad influences Muslims today [4]

Week 14: Muslim Festivals: Eid (part 1)

Festival of Id-ul-Fitr

⇒ It marks the end of the month of Ramadan. During this time Muslims do not only celebrate the end of a month of fasting, but are thanking God for the strength he has given them to fast for a month.
⇒ Celebrated for either one, two or three days.
⇒ Muslims gather together in mosques or outdoor areas to say prayers. There is also a sermon from the Imam reminding them to forgive and forget issues during the year.
⇒ Everyone wears their best clothes and homes are decorated.
⇒ Special foods are eaten, and there are processions through the street.
⇒

Festival of Id-ul-Adha

⇒ It is the festival of sacrifice or **Greater Eid.**
⇒ It remembers and honours the Prophet Ibrahim, who was willing to sacrifice his son on God's command.
⇒ Begins with prayers in the mosque and a sermon from the imam about sacrifice. Animals are slaughtered to remember Ibrahim's sacrifice. Some Muslims buy slaughtered meat from their local butchers which has been slaughtered in a specific way. They share the meat between them or give money to charity.

Enquiry Task: What are the similarities and differences between the two Eids?

Week 14: Muslim Festivals: Ashura (part 2)

⇒ It is a day of mourning for Shi'a Muslims as it remembers the death pf Husayn the son of the Imam Ali, and grandson of Muhammad. It is a day or mourning for the martyrdom of Husayn.

Husayn's martyrdom is widely seen by Shi'as as a symbol of the struggle against injustice, tyranny and oppression.

Enquiry Task: Using the images above, explain how Ashura is commemorated

Key Words:

Allele: An alternative form of a gene.

Asexual Reproduction: The production of offspring from a single parent by mitosis. The offspring are clones of the parent.

Chromosome: Structures that contain the DNA of an organism and are found in the nucleus.

Cystic Fibrosis: A disorder of cell membranes that is caused by a recessive allele.

DNA: A polymer that is made up of two strands that form a double helix.

Dominant: An allele that is always expressed, even if only one copy is present.

Fertilisation: The fusion of male and female gametes.

Gamete: Sperm and egg cell in animals, pollen and egg cell in plants.

Gene: A small section of DNA that codes for a specific protein.

Genome: The entire genetic material of an organism.

Genotype: The combination of alleles.

Heterozygous: A genotype that has two different alleles, one dominant and one recessive.

Homozygous: A genotype that has two of the same alleles. Either two dominant or two recessive alleles.

Meiosis: The two stage process of cell division that reduces the number of chromosomes in the daughter cells. It makes gametes for reproduction.

Mutation: A change in DNA.

Phenotype: The characteristic expressed because of the combination of alleles.

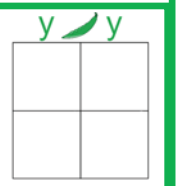
Polydactyly: Having extra fingers or toes. It is caused by a dominant allele.

Recessive: An allele that is only expressed if two copies of it are present.

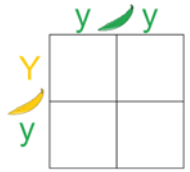
Sexual reproduction: The production of offspring by combining genetic information from the gametes of two parents. Leads to variation in the offspring.

Mitosis	Meiosis
Produces 2 daughter cells	Produces 4 daughter cells
Daughter cells are genetically identical.	Daughter cells are not genetically identical.
The cell divides once.	The cell divides twice.
The chromosome number of the daughter cells is the same as the parent cells. In humans this is 46 chromosomes.	The chromosome number is reduced by half. In humans, this is 23 chromosomes.
Used for growth and repair and asexual reproduction.	Produces gametes for sexual reproduction.

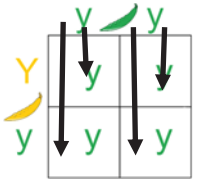
How to complete a Punnet Square



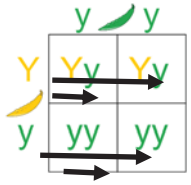
<u>Step One:</u> Put the alleles from one parent into the boxes at the top:



<u>Step Two:</u> Put the alleles from the second parent into the boxes on the left.



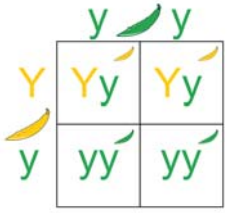
<u>Step Three:</u> Put the alleles from the first parent into the boxes underneath them.

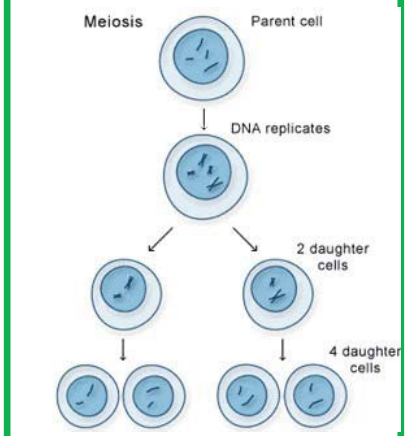


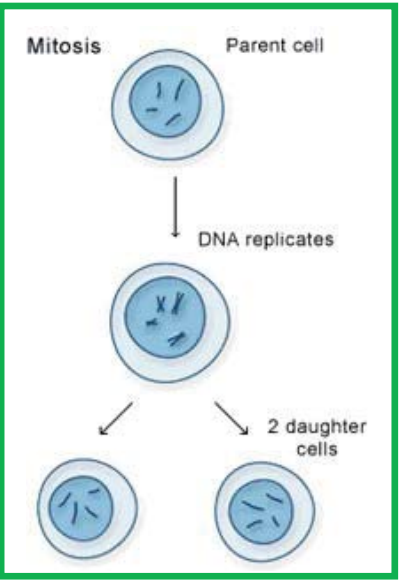
<u>Step Four:</u> Put the alleles from the second parent into the two boxes to the right of them.

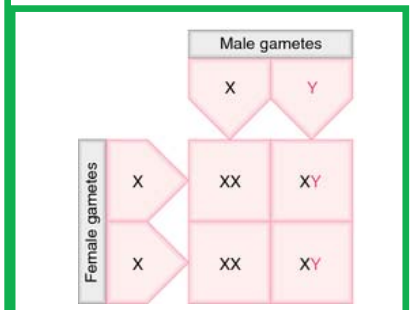
Probability: There are 4 possible combinations of alleles that an organism can inherit.

Two of the four combinations opposite are yy, so there is a 50% , 1/5 or 0.5 chance of inheriting









Key Words:

Embryo Screening: genetic tests carried out on an embryo to see whether it contains a faulty allele.

Evolution: a change in the inherited characteristics of a population over time through a process of natural selection.

Evolutionary Tree: a method used to show how scientists believe organisms are related.

Extinction: the permanent loss of all members of a species.

Fossils: the remains of organisms from millions of years ago that are found in rocks.

Genetic Engineering: The process by which scientists manipulate and change the genotype of an organism.

Natural Selection: the process by which organisms that are better suited to an environment are more likely to survive and reproduce.

Selective Breeding: humans selecting animals or plants, that have a required characteristic, for breeding.

Speciation: the process by which two species evolve from a single original species by natural selection. The two populations have become so different that they can no longer interbreed to produce fertile offspring.

Variation: differences in characteristics of individuals in a population.

Variation

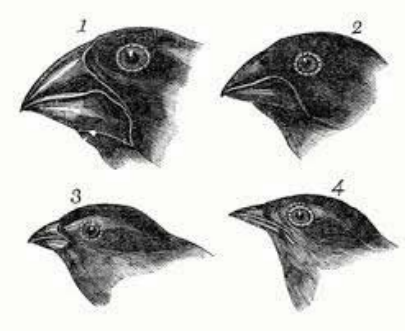
Variation may be due to differences in:

- The genes that have been inherited (genetic causes)
- The conditions in which they have developed (environmental causes)
- A combination of genes and the environment.

Evolution

All species of living things have evolved from simple forms of life by natural selection.

- If a variant/characteristic is advantageous in an environment, then the individual will be better able to compete.
- This means they are more likely to survive and reproduce.
- Their offspring will inherit the advantageous allele.



Fossils

Fossils can be:

- The actual remains of an organism that has not decayed;
- Mineralised forms of the harder parts, such as bones;
- Traces of organisms such as footprints and burrows.

Many early life forms were soft bodied so have left few traces behind.

Fossils help us to understand how much or how little organisms have changed as life developed on Earth.

Selective Breeding

1. choose parents who have the desired characteristics.

2. Select the best offspring and breed these to make the next generation.

3. these offspring are then bred again and again, over many generations, until a desired result is achieved.

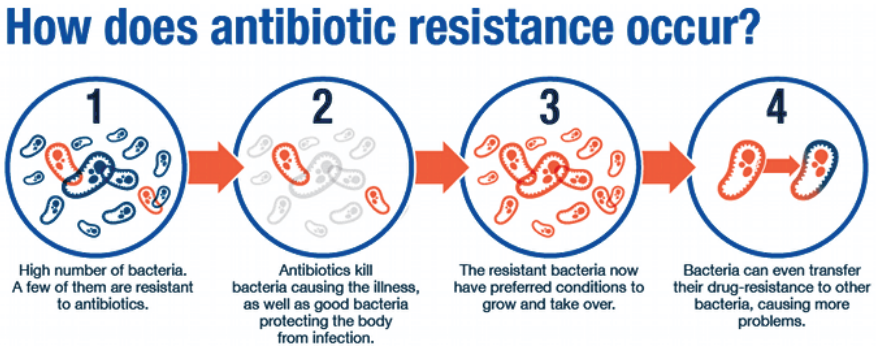
Classification

Linnaeus classified living things into kingdom, phylum, class, order, family, genus and species. Organisms are named by the binomial system of genus and species

Antibiotic Resistance

To reduce the rate at which antibiotic resistant strains appear:

- antibiotics should only be used when they are really needed, not for non-serious or viral infections,
- patients should complete their course of antibiotics, even if they start to feel better.



What is meiosis:

_____

_____

_____

_____

What is mitosis:

_____

_____

_____

_____

What are the name of male and female gametes.?

In animals: _____

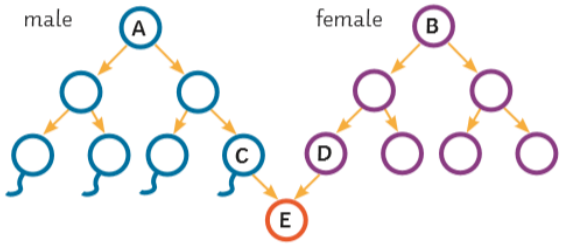
In plants: _____

What is asexual reproduction?

_____

_____

_____



How many chromosomes are in cell B? _____

What is the process that produces cell C from cell A?

_____

How many chromosomes in cell C? _____ E? _____

What is the process that produces cell E called?

_____

Define the following key words:

Genome:

_____

_____

Gamete:

_____

_____

Chromosome:

_____

_____

Gene:

_____

_____

Allele:

_____

_____

Dominant:

_____

_____

Recessive:

_____

_____

Homozygous:

_____

_____

Heterozygous:

_____

_____

Genotype:

_____

_____

Phenotype:

_____

_____

Why is it important that we study the human genome?

_____

_____

_____

_____

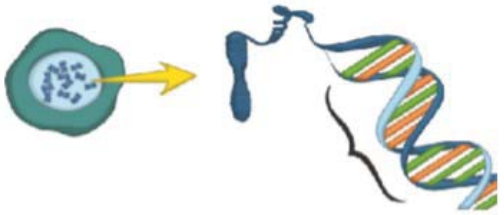
_____

Describe the structure of DNA:

_____

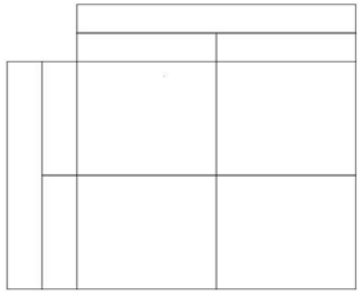
_____

Label the diagram with the following keywords: cell, nucleus, chromosome, gene, DNA



A woman with polydactyly is heterozygous for the polydactyly allele. The woman marries a man who does not have polydactyly. Draw a punnet square diagram to help you to explain what the probability of their first child having polydactyly is.

Use the symbol **A** for the dominant allele and the symbol **a** for the recessive allele.



The probability of their first child inheriting polydactyly is:

_____

_____

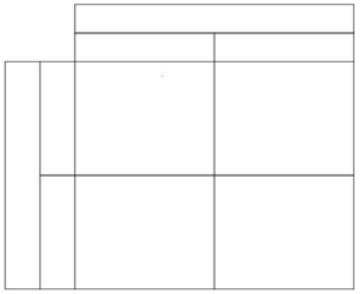
_____

_____

Which sex chromosomes do human females carry? _____

Which sex chromosomes do human males carry? _____

Complete the punnet square below to show the inheritance of sex



What are the chance that a pregnancy produces a girl? _____

What is embryo screening?

_____

_____

_____

Why do we carry out embryo screening?

_____

_____

_____

What are the benefits and drawbacks of embryo screening?

_____

_____

_____

_____

_____

What causes variation?

_____

_____

Give an example of variation between individuals that is affected by genetics (genetic variation)

_____

Give an example of variation between individuals that is affected by the environment (environmental variation)

_____

Give an example of variation between individuals that is affected by a combination of genetics and the environment

_____

What causes new variants in the genes of a species?

_____

What effects could this have on the phenotype of an organism?

_____

_____

_____

The Galapagos Finches are found on the Galapagos Islands. There are about 15 species of the finch that has evolved from a single species that colonised the islands.

The different finches have different shaped beaks to allow them to feed on different types of food. Explain how two different species of finch could have evolved from a common ancestor.

_____

_____

_____

_____

What is selective breeding:

_____

_____

Describe the process that farmers use to ensure they have varieties of cow that produce lots of milk:

_____

_____

_____

_____

Give 4 other examples of characteristics that might be chosen for selective breeding in plants or animals:

1. _____ 2. _____

3. _____ 4. _____

What is evolution? _____

What evidence do we have for evolution?

_____

_____

How are fossils formed? _____

Why do we not have a complete fossil record of how plants and animals have evolved over time?

_____

_____

Crude Oil

Hydrocarbons are compounds that are made up of the elements hydrogen and carbon only.

Crude oil is a non-renewable resource, a fossil fuel. Fossil fuels are fuels that come from old life forms that decomposed over a long period of time. The three most important fossil fuels are coal, petroleum, and natural gas. Crude oil is made up of a mixture of compounds, most of which are long and short chain hydrocarbons.

Most of the compounds in crude oil are hydrocarbons called alkanes. The Alkanes form a homologous series. This is a family of hydrocarbons that all share the same general formula and have chemical properties that are similar. Alkanes are held together by single bonds.

The general formula for an alkane is C_nH_{2n+2}. They differ from the neighbouring alkane with the addition of a CH_2.

Alkanes are saturated hydrocarbons. This means that all their bonds are taken up and they cannot bond to any more atoms.

Alkanes have similar chemical properties but have different physical properties due to differences in their chain length. The longer the chain length, the higher the boiling point of the hydrocarbon.

The first 4 alkanes are: methane, ethane, propane and butane.

Fractional Distillation

Fractional distillation is used to separate a mixture of long chain hydrocarbons in crude oil into smaller, more useful fractions.

Hydrocarbons have different boiling points depending on their chain length. Each fraction contains hydrocarbons of a similar chain length. These fractions will boil at different temperatures due to the difference in sizes of the molecules. The different parts of crude oil are called fractions because they are a small part of the original mixture.

Crude oil is heated and enters a tall column called a fractionating column. The column is hot at the bottom and decreases in temperature towards the top. As the crude oil is heated, it begins to evaporate and its vapours begin to rise up through the column. These vapours condense at the different fractions.

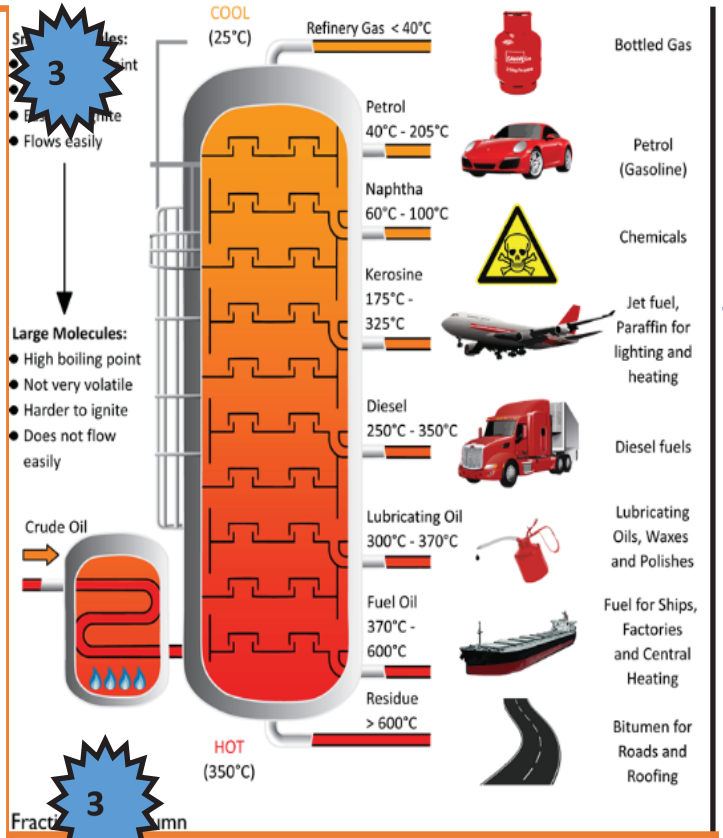
Short chain hydrocarbons are found at the top of the column. This is because the shorter chain molecules are held together by weak intermolecular forces resulting in low boiling points. These shorter chain hydrocarbons leave the column as gas.

Long chain hydrocarbons are found at the bottom of the column and are held together by strong intermolecular forces, resulting in high boiling points.

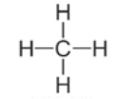
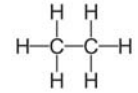
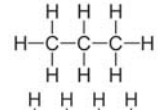
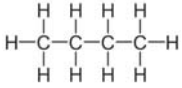
Combustion

Complete combustion occurs when there is enough oxygen for a fuel to burn. A hydrocarbon will react with oxygen to produce carbon dioxide and water.

Incomplete combustion occurs when there isn't enough oxygen for a fuel to burn. The products in this reaction are water, soot (carbon) and poisonous carbon monoxide.



Al- kanes

Name of Alkane	Structural Formula	Molecular Formula
Methane		CH_4
Ethane		C_2H_6
Propane		C_3H_8
Butane		C_4H_{10}

Cracking

4

Cracking is an example of a thermal decomposition reaction. Long chain hydrocarbons can be broken down into shorter, more useful hydrocarbon chains.

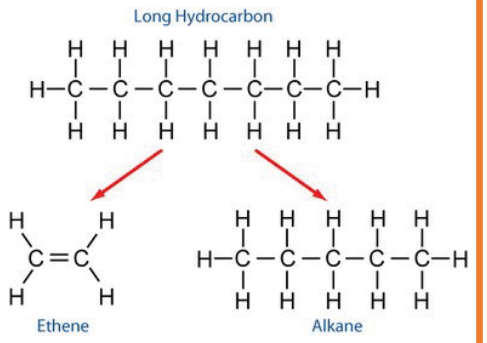
Cracking can be carried out with a catalyst in catalytic cracking or with steam in steam cracking.

Catalytic cracking involves heating a hydrocarbon to a high temperature (550° C) and passing over a hot catalyst.

Cracking of a long chain hydrocarbon produces a short-chain alkane and an alkene.

Alkenes are another type of hydrocarbon that contains a **C-C** double bond. The general formula for an alkene is C_nH_{2n}.

Alkenes are unsaturated hydrocarbons. In a chemical reaction, the double bond of an alkenes can break. This allows other atoms to bond to it.

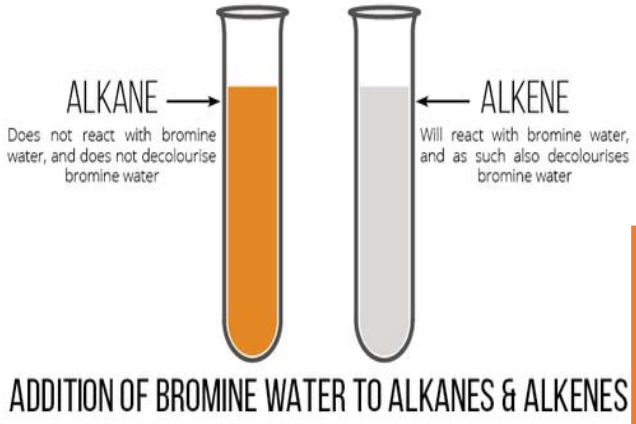


Tests for Alkanes

5

Bromine, when added to an alkane, will remain brown/orange. Alkanes are saturated hydrocarbons, they have no double bonds which could be broken to accept the bromine molecule and so remain orange.

Bromine when added to an alkene will change from brown/orange to colourless. This is because alkenes are unsaturated hydrocarbons. The double bond breaks and the bromine molecule is accepted.



ADDITION OF BROMINE WATER TO ALKANES & ALKENES

Making Polymers

5

The fractional distillation of crude oil and cracking produces an array of hydrocarbons that are key to our everyday lives.

Alkenes are used to produce plastics such as poly (ethene) which is used to make things such as plastic bags and drinks bottles. Poly(propene), another polymer, forms very strong, tough plastic.

Short-chain molecules	Increasing chain length	Long-chain molecules
COLD	As chain length increases, the boiling point of the hydrocarbon also increases.	HOT
THIN	Viscosity describes how easily a substance can flow, e.g. treacle is very viscous; it is thick.	THICK
VERY FLAMMABLE	Flammability is a measure of how easily a substance will burn	NOT AS FLAMMABLE

6

Did You Know?

6

Diesel has a higher freezing point than petrol. This is why diesel cars and lorries have trouble starting in very cold winters.

As the temperature falls, diesel can stop being a liquid at higher temperatures than petrol.

You could experience problems starting a diesel engine at –15°C

Key Information

6

Forces between molecules are called intermolecular forces.

Larger molecules have stronger forces of attraction between them than the forces between smaller molecules.

7 What is crude oil made up of?

_____

List 4 alkanes:

_____

_____

_____

_____

Draw the following alkanes:

C_2H_6

C_4H_{10}

Describe how crude oil is made:

_____

_____

_____

What are the uses of crude oil?

_____

_____

_____

Complete the combustion equation:

Hydrocarbon + oxygen —> _____ + _____

Complete the balanced symbol equation:

$CH_4 + O_2$ —> _____ + _____

Describe the process of fractional distillation. Use the diagram in the knowledge organiser to help you:

_____

_____

_____

_____

_____

_____

_____

How does the length of the hydrocarbon affect the boiling point?

_____

_____

What is bromine a test for? (circle) Alkane Alkene

What colour does it start as ? _____ change to _____

How does the length of the hydrocarbon affect the viscosity? (choose the correct answer)

As the length of the hydrocarbon increases, the hydrocarbon becomes more / less viscous.

Cracking is the breaking down of large chain _____ into shorter chains.

It produces _____ that have double _____.

Draw a diagram of an alkene:

What is the formula for alkenes?

_____

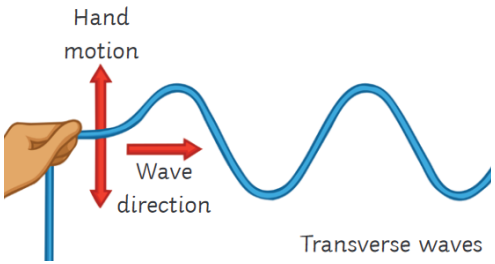
Show the cracking of a long chain molecule:

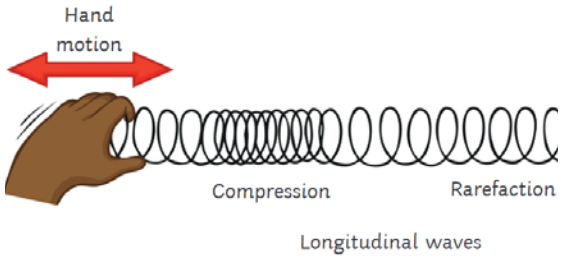
What are the 2 methods of cracking?

1. _____
2. _____

2 Waves can be either **transverse** or **longitudinal**.

In a transverse wave, the vibrations are at a right angle (**perpendicular**) to the direction of the energy transfer. The wave has **peaks** (or crests) and **troughs**. Examples include **water waves** and **light waves**.





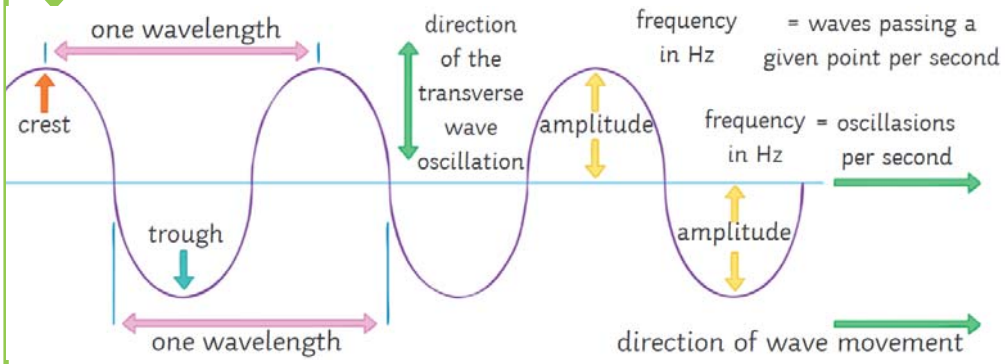
In a longitudinal wave, the vibrations are in the same direction (**parallel**) as the energy transfer. The wave has areas of **compression** and **rarefaction**. Examples of this type of wave are **sound waves**.

When a wave travels, energy is transferred but the matter itself does not move. Particles of water or air vibrate and transfer energy but do not move with the wave.

This can be shown by placing a cork in a tank of water and generating ripples across the surface. The cork will bob up and down on the **oscillations** of the wave but will not travel across the tank.

1 The **frequency** of a wave is the number of waves which pass a given point every second.

time period (s) = 1 ÷ frequency (Hz) **OR** **t = 1 ÷ f**



The **wave speed** is how quickly the energy is transferred through a medium (how quickly the wave travels).

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

v = f × λ

The speed of **sound waves** travelling through air can be measured by a simple method. One person stands a measured distance from a large flat wall, e.g. 100m. The person then claps and another person measures the time taken to hear the echo. The speed of the sound can then be calculated using the equation:

speed = distance × time.

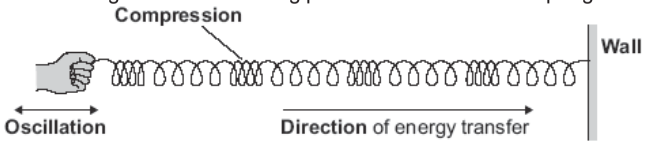
Remember the distance will be double because the wave has travelled to the wall and back again. It is important to take several measurements and calculate the average to reduce the likelihood of human error.

1 **TASK** 1-Which **one** of the units below is used to measure wavelength? Circle your answer. meter hertz joule watt **(1)**

Give an example of a longitudinal wave:_____(1)

Give an example of a transverse wave:_____(1)

2- The diagram shows a longitudinal wave being produced in a stretched spring.



(i) Use words from the diagram to complete the following sentence. Put only **one** word in each space.

A longitudinal wave is one in which the ..... causing

the wave is parallel to the ..... of energy transfer. (2)

(ii) Name the type of energy that is transferred by longitudinal waves._____(1)

2 **TASK**

1-A swimming pool has a wave making machine. The diagram shows the water wave pattern for 3 seconds.

(i) How many water waves are shown in the diagram?_____**(1)**

(ii) What is the frequency of the water waves (with units)?_____**(2)**

2- The diagram shows water waves made by a wave machine in a swimming pool.

Every second, two waves go past a person standing in the swimming pool.

The waves have a wavelength of 0.8 metres. Calculate the speed of the water waves.

Write down the equation you use, and then show clearly how you work out your answer._____

_____

Wave speed = ... m/s

(2)

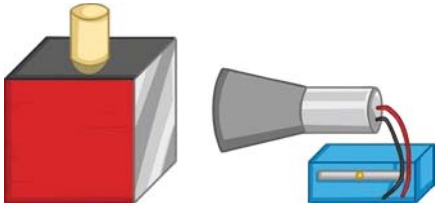
3 One required practical investigates how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface.

In this investigation, you are finding out which type of surface emits the most **infrared** radiation: **dark and matt**

dark and shiny

light and matt

light and shiny Method:



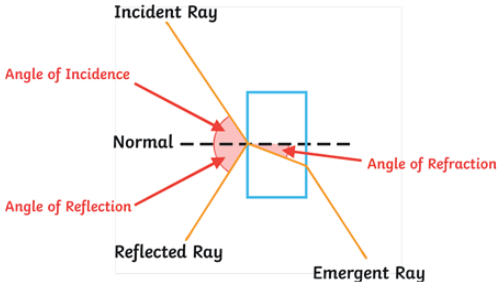
1-Place the **Leslie cube** on a heatproof mat.

2-Once the kettle has boiled, fill the Leslie cube with hot water.

3-Ensuring that the **thermometer** or the **infrared detector** is an **equal distance** from each of the surfaces (in turn) on the Leslie cube, measure the amount of infrared radiation emitted.

4-Repeat the experiment twice more to collect three results for each surface.

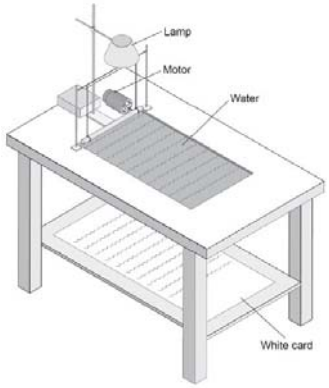
Another practical investigates the reflection of light by different types of surface and the refraction of light by different substances. It uses a ray box and a plane (flat) mirror.
The law of reflection states:
angle of incidence = angle of reflection



Risk assessment:
The ray box will become hot during use and may cause minor burns. To prevent this, you should not touch the lamp and ensure you allow time for the ray box to cool after use.
You will be working in a semi-dark environment which means there is a higher risk of trips or falls. You should ensure your working space is clear of bags and coats, and that stools are tucked under desks before you start your investigation.

4 **TASK** The diagram shows a ripple tank.

(a) The motor makes a noise when it is turned on. Describe the differences between the properties of the sound waves produced by the motor and the water waves in the ripple tank._____(4)

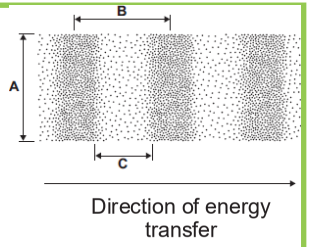


(b) The period of the sound waves produced by the motor is 8.3 milliseconds.

Calculate the frequency of the sound waves.(3)
_____Frequency = ___Hz(c)

(c) Explain how a student could make appropriate measurements and use them to determine the wavelength of the waves in the ripple tank._____(6)

3 **TASK** Sound waves are mechanical waves. The diagram shows the disturbance of air particles in the path of a sound wave at an instant in time.



(a) (i) Which labelled arrow, **A**, **B** or **C**, correctly identifies the wavelength of the sound wave_____**(1)**

(ii) What type of wave is a sound wave? Draw a ring around the correct answer **(1)**

electromagnetic **longitudinal** **transverse**

(b) Two students investigate the reflection of sound waves from a building. One student hits two metal bars together to produce a sound wave. The second student starts a stop clock when the metal bars are hit together and stops the stop clock when she hears the echo. The students want to calculate the time it takes the sound wave to travel to the building.

(i) Why must the students divide the time on the stop clock by 2 to calculate the time it takes the sound wave to travel to the building?_____**(1)**

(ii) The students divide each time by 2 and record their results in a table. Calculate the mean of the 3 results (2)

	Trial 1	Trial 2	Trial 3	Mean
Time in seconds	0.33	0.27	0.30	

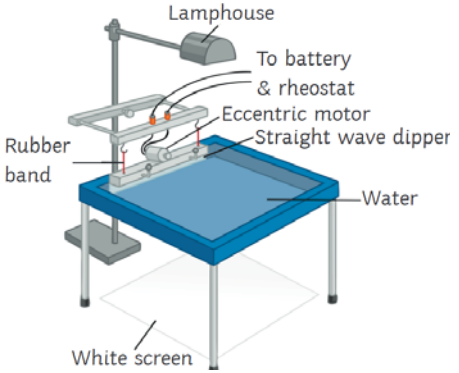
4 Aim: make observations and identify the suitability of apparatus to measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid, and take appropriate measurements.

The **ripple tank apparatus** shown is the most commonly used for this investigation. It is likely you will work in groups or observe the investigation as a demonstration by your teacher.

Method:

1-Turn on the power and observe the waves. Make any necessary adjustments to the equipment so that the waves are clear to observe (alter the voltage supplying the motor). **N.B. The lowest frequency setting on the motor will ensure that the waves measurements can be made more easily.**

2-To measure the **wavelength**, use the metre ruler and make an estimate quickly. You may want to use a **stroboscope** and freeze the wave patterns to make measurements.



3-Record 10 wavelengths and calculate the **average** value.

4-To measure the wave **frequency**, mark a given point onto the white paper and **count** the number of waves which pass the point within **10 seconds**. Divide your answer by 10 to find the number of **waves per second**.

5-Record 10 frequencies and calculate the **average** value. To calculate the wave speed, use this formula:

speed = frequency × wavelength

5 The electromagnetic spectrum

Electromagnetic waves transfer energy from a source to an **absorber** as **transverse** waves. The different waves are grouped depending on their **frequency** and form a continuous spectrum known as the **electromagnetic spectrum**. Each of the frequencies of waves travel at the same **velocity** and can pass through a **vacuum** as well as **air**.

You can remember the order of the electromagnetic spectrum easily with the phrase:
Roman men invented very unusual X-ray guns.

Gamma rays occur as the result of changes to the nuclei of atoms and atoms themselves. It is a form of radiation and the waves can be generated and absorbed across a wide range of frequencies.

UV, X-rays and **gamma** are all types of **radiation** and can be **harmful** to human health; they cause damage to human body tissues. The severity of the damage caused depends on the dose of radiation a tissue or cell is exposed to. **Radiographers** and dentists who routinely carry out X-ray examinations wear a device to monitor the amount of exposure and ensure they are within a **safe limit**.
X-rays and gamma rays are **ionising** and can cause **mutations** to genes which may result in **cancer**.

UV waves can cause the skin to burn and age prematurely. UV exposure also increases the risk of developing **skin cancer**.

***Radio waves (HT only) Oscillations** in **electrical circuits** can*

Frequency	Wave	Use	Other Information
Low	radio waves	Communication via television and radio, and satellite communications.	Easily transmitted through air and can be reflected to change their direction. Harmless if absorbed by the human body. Are reflected back off the atmosphere and cannot pass through into space.
	micro-waves	Communications including satellite communications and cooking food.	When the molecules absorb microwaves, their internal energy increases. This can be harmful when internal body cells become heated by over exposure to microwaves. Can pass through the atmosphere and into space.
	infrared	Short-range communications (remote controls), electrical heaters, cooking food, optical fibres, security systems and thermal imaging cameras.	It can cause burns to skin.
	visible light	Used for lighting, photography and fibre optics.	Frequency range that is detectable by the human eye.
	ultraviolet	Sterilising water and killing bacteria. Detecting forged bank notes.	Causes skin tanning and can lead to burns or skin cancer.
High	X-rays	Medical imaging and airport security scanners.	Very little energy is absorbed by body tissues. Instead, it is transmitted through the body.
	gamma rays	Sterilising medical equipment or food and treatment for some cancers.	These waves can lead to gene mutation and cancer.

TASK

6

Copy the diagram in section 6 and label it.

Add the labels for 'angle of refraction' , 'angle of incidence' and 'normal'._____ (4)

Describe how light refracts in a lens (so from air to glass). Use the keywords: speed, density, normal, direction

_____
_____

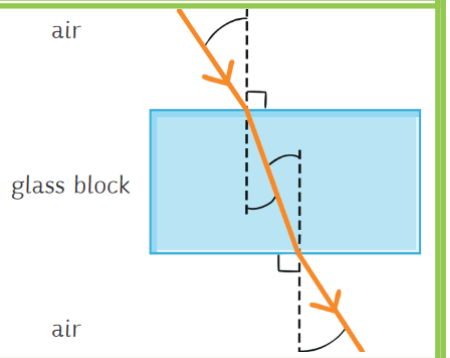
6

Ray diagrams show how a wave is **refracted** at the boundary of a different medium.

-if the wave goes from a less dense to a denser medium, the ray changes direction and moves towards the normal (angle of refraction is smaller than angle of incidence).

-if the wave goes from denser to less dense medium, the angle of refraction is bigger than the angle of incidence.

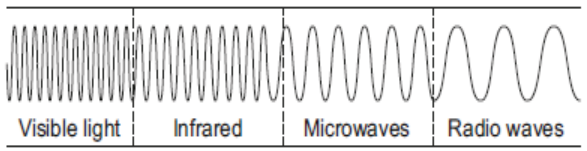
-if the wave is at a right angle to the boundary, it goes along the normal.



TASK

5

Infrared and microwaves are two types of electromagnetic radiation. The diagram below shows the positions of the two types of radiation within part of the electromagnetic spectrum.
Infrared and microwaves are two types of electromagnetic radiation.



((a) Name **one** type of electromagnetic radiation which has more energy than infrared._____ **(1)**

(b) Use the correct answer from the box to complete each sentence.

Each answer may be used once, more than once or not at all.

greater than	less than	the same as

The wavelength of infrared is _____ the wavelength of microwaves.

The frequency of microwaves is _____ the frequency of infrared.

The speed of microwaves in a vacuum is _____ the speed of infrared in a vacuum.

Topic Area 3– Organising and Planning a Sports Activity Session **Phases of a Sports Activity Session–** Ensure that you can identify the different phases and explain their purpose.	
Warm Up	Should include a **pulse raiser** to gradually increase blood and oxygen supply to the working muscles. **Stretches and joint mobilisation** to increase the elasticity of muscles and ensure that joints are prepared for full movement. Skills practice to ensure that players have practiced key skills or movements linked to their game..
Unopposed practice	A practice aimed at developing skill or technique with **no pressure from defenders.** Example– Passing the ball around a square. Shooting in basketball without a defender.
Opposed practice	A practice where there is **pressure from defenders**. More decisions have to be made and this is more realistic. Example– 3 vs 1 keep ball, 4 vs 2 keep ball.
Small Sided Game	A game which is conditioned to **focus on certain skills or tactics**. Changes can be made to the Space (playing area), Task or amount of players to help this. Example– Line ball– players can only score by dribbling over a line to focus on dribbling past a defender.
Cool Down	**Gradually reducing pulse and breathing rate**, also stretching key muscle groups. Aim to remove waste products and reduce chance of muscle soreness.

Risk Assessment– Can you create a Risk Assessment with AT LEAST FIVE possible hazards. This is for an activity (i.e. Football, Basketball) and the activity that it will take place in (e.g. AstroTurf/Sports Hall).

TASK- Draw and use the template below. See example row for support.

Identify significant hazards	State the **severity** of the hazard (high, medium, low)	State the **probability** of the hazard happening (high, medium or low)	List the people at risk from the hazard	List what could be done to reduce the risk of hazard and any actions needed.
Litter	Medium– possible risk of cuts or slipping/tripping	Medium– litter might be seen by the student so they avoid it.	Students and coaches	Pick the litter up before the session. No food or drinks to be brought into session.

Teaching Points– Can you describe teaching points for a skill of your choice. Break down the points into preparation, execution and outcome (see support below).

Examples: Set Shot (Basketball), Short Pass (Football), Chest Pass (Netball), Backhand Push (Table Tennis)

Preparation	Execution	Outcome
• How the **body is positioned** before performing the skill.	• How the **body moves** from starting and finishing action.	• The end goal/product of the performance.

Topic Area 4– Organisation of a sports activity session	
Organisation	The action of planning a group of people into a particular task
Safe practice	Organising the group and the activities appropriately depending on the space, number of participants and equipment being used
Timing	Being punctual and prepared for the session, considering the length of activities
Adaptability	Making changes to the session if people find it too easy or too hard
Reliability	Turning up when you say you will and running to time
Topic Area 4– Leading a sports activity session	
Activity specific details	Showing the skills, techniques and tactics appropriate to the needs of the participants
Positioning	Considering where you will be stood in relation to the group when giving demonstrations and explanations
Motivation	Strategies used to increase the desire or willingness of participants to engage in an activity
Communication	Imparting or exchanging of information by speaking or through actions (verbal and non-verbal).
Enthusiasm	Intense and eager enjoyment, interest, or approval towards something
Knowledge	Understanding of an activities rules, techniques and safety requirements.

Topic Area 4– Leadership Styles

TASK– THINK of a leadership style you would use in the following situations.

- Teaching a javelin lesson to beginners
- A half time team talk with children
- A teacher supervising a lunch time football club

Leadership Style and Description	**Advantages**	**Disadvantages**
Autocratic– Authoritarian leadership style. The leader has control over all decisions and there is little input from the group.	Quick decisions are made. Leadership is clear as everyone knows who is in charge.	Can cause people to dislike the leader. People feel that their opinion doesn't matter.
Democratic– Shared leadership style. The members of the team have a more participative role in decision making.	Makes people feel involved with decisions. People think that their opinion is valued. Helps to create more ideas.	Can be very slow to make a decision. Confusion as to who is the leader. Can undermine authority of the leader.
Laissez-Faire – Delegated leadership style. Hands off approach and allow the group to make all decisions. The leaders just organise the task or game.	Creates a no pressure atmosphere. Gives opportunities for all to lead. Allows people to get on with it.	Can be very slow to make a decision or none are made at all. No one really knows direction or who is in charge.

Need to Know Dictionary: English

Word	Definition
Imagery	Where the writer uses words to paint a picture to help the reader visualise what is being described.
Contrast	A difference between things Eg:- writer's viewpoints, start and end of extract, contrasting tone.
Perspective	The attitude towards or way of regarding something; a point of view.
Metaphor	metaphor is a word or a phrase used to describe something as if it were something else.
Simile	A comparison of two things using 'like' or 'as'.
Personification	When non-human objects are given human characteristics or form.
Alliteration	The repetition of the same letter at the beginning of two or more words.
Author	A writer of a book, article, or document.
Purpose	The reason for which something is done or created or for which something exists.
Context	The circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood.

Need to Know Dictionary: Maths

Word	Definition
Simplify	To reduce an expression or fraction to a simpler form
Solve	To solve something is to find a solution
Calculate	To work out an answer. Usually by adding, subtracting, multiplying or dividing
Arrange	Put a data set in order
Ascending	From smallest to largest
Descending	From largest to smallest
Estimate	To find a value that is close enough to the right answer
Factorise	Finding the highest common factors of an expression
Expand	To expand a bracket means to multiply each term in the bracket by the expression outside the bracket
Construct	To draw a shape, line or angle accurately using a compass or a ruler

Need to Know Dictionary: Science

Word	Definition
Displacement reaction	A reaction in which a more reactive element takes the place of a less reactive element in one of its compounds or in solution.
Electrolysis	The breakdown of a substance containing ions by electricity.
Neutralisation	The chemical reaction of an acid with a base in which a salt and water are formed. If the base is a carbonate or hydrogen carbonate, carbon dioxide is also produced in the reaction.
Reactivity series	A list of elements in order of their reactivity.
Equilibrium	The point in a reversible reaction at which the forward and backward rates of reaction are the same. Therefore, the amounts of substances present in the reacting mixture remain constant.
Communicable (infectious) disease	Disease caused by pathogens that can be passed from one organism to another.
Non-communicable diseases	Are not infectious and cannot be passed from one organism to another
Pathogens	Microorganisms that cause disease
Vaccine	Dead or inactive pathogenic material used in vaccination to develop immunity to a disease in a healthy person
Virus	Pathogens that are much smaller than bacteria and can only reproduce inside living cells of other organisms

Need to Know Dictionary: Geography

Key Terms	Definition
Quality of Life	The standard of health, comfort, and happiness experienced by an individual or group.
International Aid	Assistance given from one country to another.
Rural	An area that is usually relatively sparsely populated.
Infrastructure	The basic physical and organisational structures and facilities (e.g. buildings, roads, and power supplies) needed for the operation of a society.
Development	Is the improvement in living standards through better use of resources.
Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product (GDP) per capita	The total value of goods and services produced by a country in a year divided by its population.
Low Income Countries (LICs)	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living
Newly Industrialised Countries (NEE)	Countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
Fair trade	Movement where farmers are paid a fair price for the goods produced.

Need to Know Dictionary: History

Word	Definition
Bloodsport	A sport that involves hurting or killing a living creature
Exports	Goods and products sold by a country and sent to other countries
Humanism	The belief that humans can improve themselves via education, to go beyond just getting the essentials of life
Patronage	Giving someone a job or title as a sign of trust and respect
Provenance	Where a piece of evidence comes from (Nature Origin Purpose)
Netherlands	A nation in Western Europe, also known as Holland
Recusant	A person that didn't attend church on Sunday
Suitor	Someone who wants to marry someone else
Theatre	The place where plays are shown for entertainment
Tudor	The surname of the royal family in England that ruled from 1485 to 1603

Need to Know Dictionary: Engineering Design

Word	Definition
Sustainable (design)	Sustainability is all about the immediate and on going effect of a product on the environment. A more sustainable product has less negative impact on the environment.
Iterative (design)	A flexible approach to designing where a concept will go through many iterations (versions) before finalised as a product ready for manufacture.
Inclusive (design)	Designing to include members of the public who might otherwise be excluded or struggle to use a product. For example braille being used on a cash machine for people who have problems with their sight.
User-centred (design)	Designing with the needs and wants of the user as the priority. Often involving the ergonomic design being of high importance.
Biodegradable	A product or material that will compost back into the soil without causing further pollution. This is very sustainable as there is little to no pollution caused by the disposal of the product.
Automated assembly	The assembly of a product with the use of lots of machines and robots rather than manual labour. Used for larger scales of production where higher volumes of products are being manufactured.
Manual assembly	The assembly of a product with the use of lots of manual labour (people). This is usually used in smaller production runs or when the product is difficult to assemble by machine alone (clothing for example)
Circular economy	The opposite to a throw away society, a circular economy sees all resources being recycled and reused.
Linear economy	The opposite to a circular economy where materials and resources are used and then thrown into a landfill site and not reused or recycled.
Ethical design	Where products are positive in their effect on the environment or for their effect on society (people).

Need to Know Dictionary: Art

Word	Definition
Identity	Who a person is, or the qualities of a person or group that makes them different from others.
Narrative	A narrative, story or tale is any account of a series of related events or experiences, whether non fictional or fictional.
Culture	The position and layout of shapes on the paper.
Symbolic	A mark, sign, or word that indicates, signifies, or is understood as representing an idea, object, or relationship.
Discrimination	Relating to bodily structure.
Conceptual Art	Artwork that is created in a public space, typically without official permission.
Adversity	A difficult or unpleasant situation.
Satire	The use of humour, irony, exaggeration, or ridicule to expose and criticise people's stupidity or vices.
Expressive	Effectively conveying thought or feeling.
Personality	The characteristic sets of behaviours, mental behaviours, and emotional patterns that evolve from biological and environmental factors.

Need to Know Dictionary: Sport Studies

Word	Definition
Execution phase	The movement required to perform the main part of the skill. (e.g. contact with the side of the foot)
Closed skill	Where there is no interference from the environment (e.g. no defenders). The skill can be performed in the same way each time. The performer decides when to start the movement and how to perform the skill.
Intended outcome	The planned or expected performance of a skill, tactic.
Notational analysis	Recording events in an objective way using a factual record. This could relate to the position of the ball, players involved or the outcome of the activity.
Open skill	Where the skill is performed in a changing environment and has interference from the environment (e.g. defenders).
Opposed practice	A practice which involves an opponent or defender. This usually reduces the amount of time the player has and forces them to make a wider range of decisions.
Preparation phase	How your body is set up into position to perform the skill. This refers to body positioning. (e.g. non-kicking foot beside the ball)
STEP principle	A method of progressing practices to add or reduce challenge. Refers to SPACE, TASK, EQUIPMENT and PEOPLE.
Unopposed practice	A practice which does not involve a defender. This reduces the amount of pressure placed on a player who can develop technique and muscle memory.
Variable practice	Where practices are varied and the environment is unpredictable and changing. Works well for open skills. Examples- Possession practice against defenders.

Need to Know Dictionary: Hospitality and Catering

Word	Definition
Climate change	Changes in the earth's temperature that can lead to unusual and extreme weather
Carbon footprint	A measure of how much food production contributes towards the production of greenhouse gases
Food provenance	Where food and the ingredients in them originally come from before they reach the Hospitality and Catering industry
Appetising	Where food is prepared, cooked and served so well that people what to eat it
Organoleptic	The quality of food that people experience with their senses
Senses	The ability of the body to react to things through sight, taste, sound, smell and touch
Mise-en-place	A catering term meaning preparation time before you start to cook. May include preparing self and area, collecting equipment, chopping vegetables etc
Contingencies	What to do if things go wrong. This will be included when creating a production plan for a dish. For example- Do not over rub fat in with the flour. If I do, start again as the pastry will be tough.
Special Points	Things to consider when doing each step of your production plan. For example reference should be made to adjustments in oven temperatures or to check length of cooking time for vegetables to serve hot.
Dovetailing defiition	To cook several things at the same time in the most logical order. For example if you are cooking a main and dessert you may need to start part of the dessert off first and then do part of a main course. Whilst the main is cooking you can then go back to finish the dessert. The dishes need to be served together.

Need to Know Dictionary: Creative iMedia

Word	Definition
Assets	the different images/video/audio that will be used to make a final media product
Demographics	the study of target audience characteristics eg location, age, gender, income, interests
Intellectual property	something unique that is created/developed in a person's mind, which can be an idea, story, game, artistic work, symbol or invention. This can be protected for the creative person's own benefit, through copyright, trademarks and patents
Interactive	something which allows the user to be involved in the process of watching or listening. This could involve user input such as clicking, typing or speaking to interact with the media
Location Recce	short for reconnaissance. A visit to a location to check suitability and requirements for producing media products. Eg lighting, safety, noise levels
Workflow	the order that tasks/activities are completed in, including which activities must be finished before others can begin and which can be completed the same time as each other.
Resolution	a property of an image that states how many dots per inch are present
Primary Sources	information from which you obtain 'first-hand' from an original source and are typically more reliable
Secondary Sources	information is obtained 'second-hand' or where somebody else has already put their own interpretation on the original information.
DPI	Dots per inch - the resolution of a digital graphic (where a print product needs 300 dpi and a web graphic 72 dpi

Need to Know Dictionary: Health and Social Care

Word	Definition
Need to know	If you tell people something on a need-to-know basis, you only tell them the facts they need to know at the time they need to know them, and nothing more.
Values	Values are the beliefs and views that people hold about what is right or wrong. They apply to all aspects of life and influence how a person behaves in different situations.
Rights	For example: - the right to be respected, treated with equality, and fairly, respected as an individual and not discriminated against, privacy, dignity, protection from danger and harm; right to access information relevant to themselves; right to communicate using their preferred methods of communication etc.
Beliefs	A belief is an attitude that something is the case. A belief might be important to an individual and their understanding of the world around them.
Equality	Everyone being treated the same.
Diversity	Recognising people's differences and embracing them.
Discrimination	People who are unfairly treated differently because of their age, race, gender etc.
Confidentiality	Conversations and information that is kept private from people who do not need to know.
Service user	This describes anyone who is a patient or user of services.
Consultation	A meeting with an expert, such as a medical doctor, in order to seek advice.

Need to Know Dictionary: Hair and Beauty

Word	Definition
Business	A person's regular occupation, profession or trade. An activity that someone is engaged in. This could also be a commercial company.
Produce	To make or manufacture from components or raw materials.
Supply	To make something that is needed or wanted available to someone, and to provide it for them.
Leadership	To lead a group of people or an organisation.
Distributing	To give a share or a unit of something to numbers of recipients.
Customer	A person who buys goods or services from a shop or business.
Value	The importance, worth, or usefulness of something.
Passionate	Having, showing strong feelings or beliefs.
Characteristics	A feature or quality belonging typically to a person, place or a thing and serving to identify them.
Legislation	Laws that must be considered collectively.

Need to Know Dictionary: Child Development

Word	Definition
Development	It is the process of learning new skills
Developmental norms	Recognised stages in patterns of development
Fine motor skills	The small muscles used in precise movements involving hand-eye coordination. Sometimes referred to as manipulative skills. Small movements involving the hands
Gross motor skills	Use and development of the large muscle groups. Large movements involving the limbs.
Intellectual development	Development of the mind, such as: learning to talk, understanding, memory, concentration, reasoning, problem solving, imagination, reading books, asking questions, telling stories, listening, and following instructions
Independence	Developing the skills and abilities to be less dependent on others.
Milestones	Skills that babies and children have mastered which are linked to age. The idea being that the child has reached a certain point in their development.
Motor skills	Refers to movement skills and abilities
Physical development	The way in which the body increases in skill and complexity
Social development	Refers to the growth of a child's relationships with others

Need to Know Dictionary: Motor Vehicle

Word	Definition
Engine oil	The oil supply to the rubbing surfaces of the engine parts which reduces friction between them.
Full – flow	Full-flow filtering elements receive and filter 90 to 100% of the regulated oil pump output prior to supplying the Page 2 oil to the engine's lubrication system.
Hydrodynamic	Hydrodynamic lubrication is a term that defines a situation in which two rubbing surfaces are separated by a thin film of a lubricant.
Viscosity	Engine oil viscosity refers to how easily oil pours at a specified temperature.
Multi – Grade Oil	A multigrade oil is an oil whose properties have been enhanced to reduce its viscosity with temperature. Thereby, compared to monograde oil, multigrade oil is more fluid at low temperatures and thicker at high temperatures.
Natural grade Oil	Mineral oils are derived from the refining of crude petroleum. During the process, natural contaminants and unwanted hydrocarbons are removed.
Synthetic oil	Primarily designed for high-performance engines, synthetic motor oils are a product of complex chemical transformations that are performed either directly on drilled crude petroleum or using preselected molecules. The difference with mineral oils resides in the transformation process: synthetic oil undergoes more sophisticated modification.
Viscosity index	The viscosity index of a lubricant is determined by measuring the kinematic viscosity at 40°C and 100°C. These measurements are then compared to the results of two reference oils.
Boundary Lubrication	Lubrication between two rubbing surfaces without the development of a full lubricating film. It occurs under high load and low speed, and requires the use of antiwear or extreme pressure additives to prevent metal-to-metal contact.
Splash lubrication system	In splash lubrication systems, oil is applied to the cylinders and pistons by rotating dippers on the connecting-rod bearing caps. Each time they rotate, the dippers pass through an oil-filled trough. After running through the oil trough, the dippers splash oil onto the cylinders and pistons to lubricate them.