



ALL SAINTS
ACADEMY PLYMOUTH



**NEED TO
KNOW
BOOK**

**Year 11
Spring Term 2024**



ALL SAINTS
ACADEMY PLYMOUTH

Table of Contents

Timetable	2
Homework Expectations	3
Improving Your Long Term Memory	4
Careers and Aspirations	5
<i>Need to Know Booklets</i>	
Child Development	6
Creative iMedia	17
Engineering Design	20
English	21
Food and Nutrition	31
Geography	33
Hair and Beauty	35
Health and Social Care	36
History	39
Mathematics	42
Religious Studies	46
Science	48
Sports Studies	58
Need to Know Dictionary	60

Timetable

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 1 hour 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



Your 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



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.

Improving Your Long Term Memory

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.

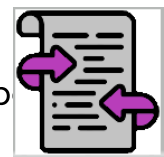
You can support your working memory by storing key facts and processes in long-term memory. These facts and processes can then be **retrieved** to stop your working memory becoming overloaded.

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.

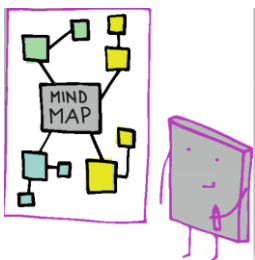
There is strong scientific evidence from cognitive psychology that shows the benefits of **self-quizzing** in promoting **retrieval strength**. This is your ability to quickly recall key facts related to your subject or topic

How should I self-quizz and how often?

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



You could:



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



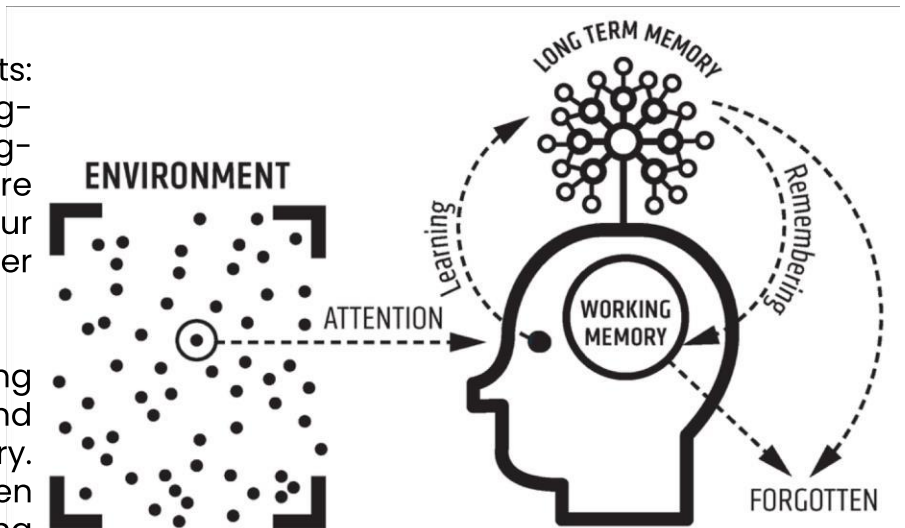
Cover up one section of the need to know booklet and try and write out as much as you can from memory.



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.

BOLD steps to your **BRIGHT** future



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

<p>LO1 1.1- Factors which affect the decision to have children When is the best time to have a child?</p>	<p>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.</p> <p>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?</p> <p>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?</p> <p>People can feel pressured if their friends are having babies or if their family expects them to.</p>												
<p>Relationship between partners</p> <p>Finance</p> <p>Parental Age (can affect fertility and suitability)</p> <p>Peer pressure/social expectations</p> <p>Genetic counselling for hereditary conditions</p>	<p>Genetic disorders are inherited from either the mother of father, these include: -Down's syndrome - Sickle cell anaemia - Muscular dystrophy</p> <p>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)</p>												
<p>LO1 1.2– Pre-conception health How can couples ensure their health positively impacts the baby they conceive?</p>	<p>Diet (what should parents eat)</p> <p>Exercise</p> <p>Healthy weight (dangers of being overweight)</p> <p>Smoking / alcohol / recreational drugs</p> <p>Up-to-date immunisations</p>												
<p>- Eat a healthy diet (e.g. at least 5 portions of fruit and vegetables)</p> <p>- Reduce sugar intake- Risk of diabetes</p> <p>- Avoid foods at risk of food poisoning (e.g. raw meat)</p> <p>- Women should take FOLIC ACID during pregnancy to reduce risk spina bifida</p> <p>- Being fit helps a mother cope with pregnancy</p> <p>- Helps to maintain fitness and well-being</p> <p>- Being overweight can affect fertility and ovulation</p> <p>- Can increase likelihood of needing a caesarean</p> <p>- Being overweight can lead to diabetes</p> <p>- Men who smoke or drink may have a lower sperm count</p> <p>- Risk of premature birth, miscarriage, still birth and foetal abnormalities</p> <p>- Women are advised to avoid alcohol</p> <p>- Drugs can lead to addiction/fertility issues</p> <p>- Drugs should not be taken in the month prior to conception</p> <p>- Immunisations are good for women's health to avoid specific illnesses</p> <p>- Prevent risk of rubella</p> <p>- Genetic screening– be aware of genetic conditions they are at risk of</p>													
<p>LO1 1.3– Roles and responsibilities of parenthood– What must a parent provide?</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Food</td> <td style="width: 25%;">Food must provide the right nutrients to have energy for growth and development.</td> <td style="width: 25%;">Shelter and Warmth</td> <td style="width: 25%;">Housing must be safe and provide warmth. Damp conditions can lead to asthma and chest conditions.</td> </tr> <tr> <td>Clothing</td> <td>Clothing that fits, is clean and for all weather conditions.</td> <td>Rest/sleep</td> <td>Rest and sleep is needed for a child's wellbeing, learning, growth and development.</td> </tr> <tr> <td>Love and nurture</td> <td>Helps a child to feel supported and thrive. Supports social and emotional development.</td> <td>Socialisation/ Customs / Values</td> <td>Children can be taught understand social acceptable behaviour. Parents act as role models.</td> </tr> </table>	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.
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.										

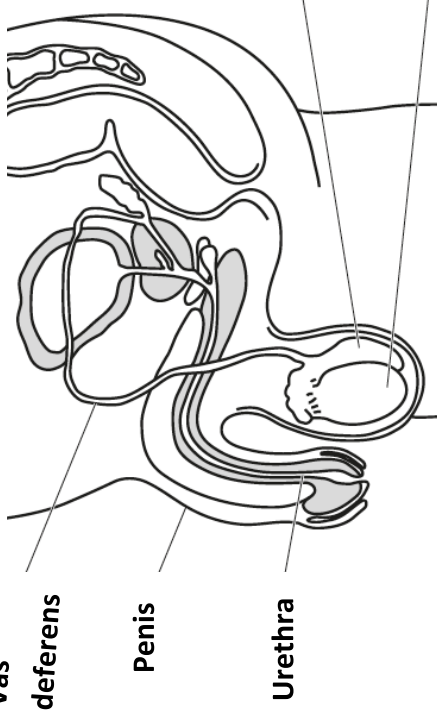
LO1 1.4 To recognise and evaluate methods of contraception, their efficiency and reliability



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 progesterone) 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) Progesterone pill = Spotty skin, tender breasts
Progesterone-only pill (Contraceptive pill)	Tablet containing progesterone only. Taken daily, within a three hour time period. Thickens mucus in the cervix, preventing sperm contacting the egg.	99% effective if used 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 - Can cause mood swings, headaches, weight gain and tender breasts - No STI protection - Can cause headaches, raised blood pressure and blood clots - No STI protection
Intrauterine device/system (IUD or IUS)	A small, t-shaped plastic device inserted into the uterus by doctor/nurse.	99% effective if fitted correctly	- 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
Contraceptive injection	Injection every few weeks/12 weeks.	99% effective if used correctly	- Effective if taken within 24 hours - Widely available / sometimes free	- Vomiting and diarrhoea makes it ineffective - May cause headaches - No STI protection
Contraceptive patch	Worn on the skin, introduces hormones into the body. Thickens mucus in cervix.	99% effective if used effectively		
Contraceptive implant	A small tube inserted in the skin of woman's upper arm.	99% effective if used correctly		
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		
Emergency contraceptive pill	Pill taken within 24 hours or up to 72 hours after unprotected sex	24 hrs = 98% 72 hrs = 52%		

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

Male Reproductive System

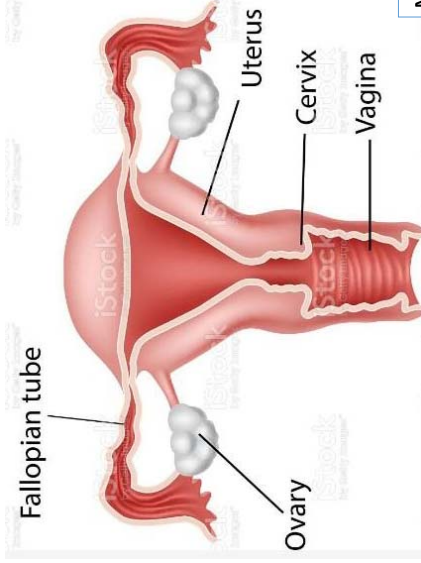


Structure	Function
Testes	Male reproductive glands where sperm and testosterone are produced.
Epididymis / sperm duct system	Sperm duct system consists of epididymis which stores the sperm.
Vas deferens	Muscular tube which extends upwards of testicles, transfers sperm to urethra.
Urethra	The tube inside the penis, carries both urine and semen.
Penis	Involved in sexual intercourse and elimination of urine.

Signs and Symptoms of Pregnancy

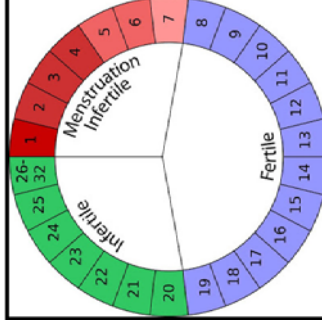
Missed period or a very light period	
Breast changes– Just before a period breasts feel larger or tender. Nipples may appear darker.	
Passing urine frequently	
Tiredness	Nausea- ‘morning sickness’

Female Reproductive System



Structure	Function
Ovaries	Controls the production of the hormones oestrogen and progesterone. Contains undeveloped eggs.
Fallopian	Connect the ovaries to the uterus. Ovaries
Uterus (womb)	Uterus (also called the womb), a pear shaped muscular bag where the baby (foetus) develops. Egg is implanted here.
Cervix	Strong ring of muscles between uterus and vagina. Keeps the baby securely in place in the womb during pregnancy. Cervix dilates during labour.
Vagina	Muscular tube leading downwards, connects the cervix to outside of body. A males penis enters the vagina during sexual intercourse.

Menstrual Cycle and Fertilisation 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/Fertilisation

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

Fertilised egg arrives in the uterus. Once attached firmly, conception has been achieved and the egg is called an embryo.

LO3 Conditions for development

3.3 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 - 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
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 <u>passed onto the unborn baby through the placenta</u> . 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. <u>Treatment includes:</u> - 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. <u>Treatment includes:</u> - 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) If children do not have an appropriate diet and receive the correct nutrients they risk developing a deficiency.
Dietary deficiencies	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

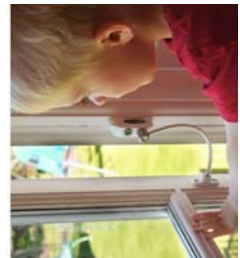
4.4 Diet related illnesses	
Food intolerances and allergies	<p>A child's diet may need to be restricted due to allergies, intolerances or medical conditions. Food which can cause allergies include nuts, milk, eggs, shellfish.</p>
Anaphylactic Shock	<p>An anaphylactic shock is a severe allergic reaction and life threatening. Signs of this include: red, itchy rash, swelling of face and eyes, difficulty breathing.</p> <p>Treatment includes:</p> <ul style="list-style-type: none"> - Call for an ambulance - Administer Epi-Pen (if trained) - Sit upright with shoulders slightly forward - Continue to monitor and assess them 
Diabetes	<p>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:</p> <ul style="list-style-type: none"> - Hypoglycaemia—Where the blood sugar is too low - Hyperglycaemia—Where the blood sugar is too high <p>Signs and symptoms of Hypoglycaemia:</p> <ul style="list-style-type: none"> - Drowsiness - Feeling weak or faint - Confusion - Sweating and cold, clammy, pale skin <p><u>Treated with</u>—orange juice, sugary drinks</p> <p>Signs and symptoms of Hyperglycaemia:</p> <ul style="list-style-type: none"> - Drowsiness - Feeling thirsty - Rapid breathing - Passing urine frequently - Fruity, sweet smelling breath <p><u>Treated with</u>—emergency medical treatment (call an ambulance)</p>







4.2 Caring for the needs of an ill child	
Physical needs (helping the body to recover)	<p>A sick child needs plenty rest and will often feel tired. They also need:</p> <ul style="list-style-type: none"> - 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)	<p>It is important to avoid boredom, provide mental stimulation or interaction. Examples include:</p> <ul style="list-style-type: none"> - Reading books - Colouring / drawing - Play games (board / card games) - Educational TV
Emotional and Social needs (provide reassurance)	<p>An ill child can feel confused and frightened at being ill. A parent should:</p> <ul style="list-style-type: none"> - 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	<p>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.</p>
Ways to prepare a child for hospital visit	<p>Hospital / ward visit (allows them to meet doctors / nurses, know where they are staying, helps them to become familiar with surroundings)</p> <p>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.)</p> <p>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)</p> <p>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.)</p> <p>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</p>

L05 Know about child safety

4.3 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	Helps to keep children away from hot objects.
Fire guard	
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.



4.3 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.

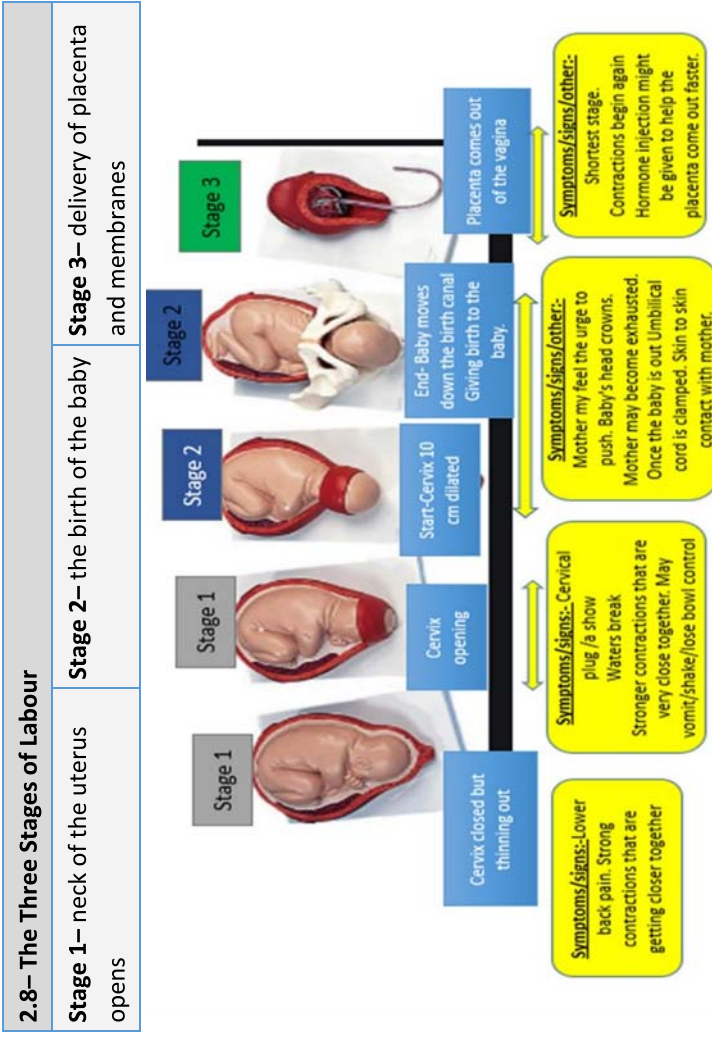
LO2 Antenatal care and preparation for birth

LO2 2.– 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. <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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. <ul style="list-style-type: none"> - 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.
2.1 Routine checks carried out at antenatal clinic, including scans	
<p>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</p>	

LO1 2.1– 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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 through-out pregnancy and birth	Give information on how to support and help through: <ul style="list-style-type: none"> - 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
2.2 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 the baby is in the right place




LO2 Antenatal care and preparation for birth

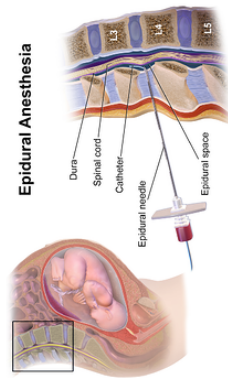
2.2 Specialised diagnostic tests (to check the health of the baby)	
Ultrasound Anomaly Scan / Mid-pregnancy scan	Detailed scan carried out at 18-21 weeks of pregnancy , checks for major physical problems. Scan looks at: - Bones - Heart - Brain - Spinal cord - Face - Kidneys - Eyes Sonographer will look 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 .



2.4 The choices available for delivery– Where can mothers give birth?	
	Advantages / Not advised when
Hospital birth	<ul style="list-style-type: none"> - Mother may feel safer - Trained staff if a problem - Caesarean, delivery methods and all pain relief can be used - Can meet other mothers
Home birth	<ul style="list-style-type: none"> - 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
Domino Scheme (Home then hospital)	<ul style="list-style-type: none"> - 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
Private hospital / Independent midwife	<ul style="list-style-type: none"> - Likely to have excellent facilities - Easier to maintain privacy - Can be very expensive

LO2 Antenatal care and preparation for birth






2.9 Methods of Assisted Delivery	
<p>Alternative methods of delivery may be needed during labour or planned in advance. They are only used when necessary. This is because:</p> <ul style="list-style-type: none"> - 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	Why the method might be used?
<p>Forceps</p> 	<ul style="list-style-type: none"> - 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
<p>Ventouse</p> 	<ul style="list-style-type: none"> - Suction cup is placed on a baby's head to assist delivery - Rubber cap gives gentle suction - Helps to pull baby out
<p>Elective / emergency Caesarean section</p> 	<ul style="list-style-type: none"> - 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



2.6 Pain relief options		
Type of pain relief	Advantages	Disadvantages / Potential side effects
<p>Gas and Air (Entonox)</p> <p>Mix of oxygen and nitrous oxide, used when contractions start</p>	<ul style="list-style-type: none"> - Does not harm the baby - Works very quickly - Easily breathed through mask - Mother controls intake 	<ul style="list-style-type: none"> - Does not relieve all pain - Wears off quickly - Can make mother sick - Can make mother dizzy
<p>Pethidine</p> <p>Used in early labour to help mother relax and rest</p>	<ul style="list-style-type: none"> - Lasts for two to four hours - Useful in early stages of labour - Strong pain killer - Given by midwife 	<ul style="list-style-type: none"> - Have to have injection - Can take 20 minutes to work - Can make mother sick, disorientated or sleepy - Can affect baby's breathing
<p>Epidural</p> <p>Numbs the nerves that carry pain impulses. Used when a mother is in a very long or painful labour or is distressed.</p>	<ul style="list-style-type: none"> - Can provide total pain relief - Does not cause sickness or drowsiness 	<ul style="list-style-type: none"> - 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
<p>TENS Machine</p> <p>Gives electrical stimulus that interferes with pain signals to brain. Helps mother to relax</p>	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Cannot be used if mother has a pacemaker, epilepsy or heart problem - Shouldn't be used in early pregnancy.
<p>Water Birth</p>	<ul style="list-style-type: none"> - Can help mother relax - No side effects - Can be used at hospital or at home 	<ul style="list-style-type: none"> - 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 problems.	
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 normally 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 newborn will move their head to search for mother’s 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: <ul style="list-style-type: none"> - 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 - Jaundice (yellow tinged skin) 	<ul style="list-style-type: none"> - 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, control temperature and prevent risk of infection.
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- <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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.	

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, tone 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

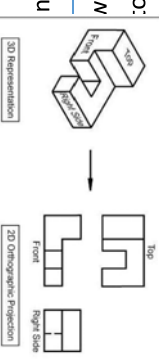
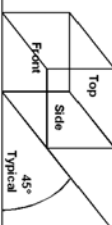
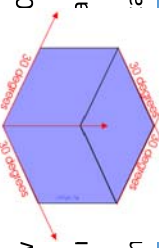
Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

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

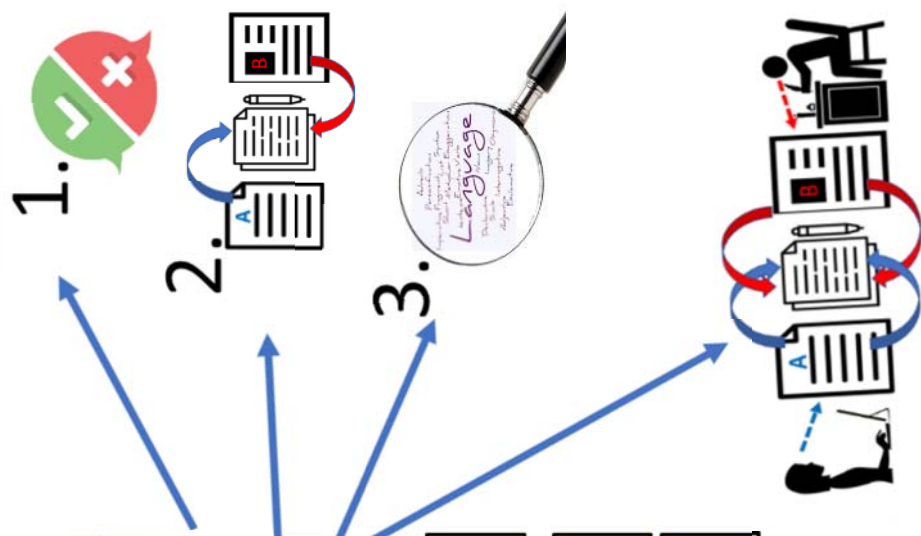
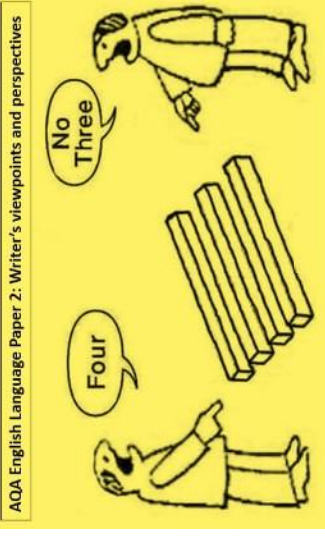
Studying this unit will enable you to learn about the different media sectors, products and the job roles within the media industry. You will learn that media products are designed for specific target audiences and that these audiences can be categorised.

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 reces. The purpose of risk assessments and location reces. The common risks and hazards in media production and what media producers can do to reduce these risks and hazards.	Identify and explain the common 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:
1-2 Computer Aided Design	<p>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, Fusion360, Onshape and many others.</p> <p>Advantages of CAD (over drawing by hand): Extremely precise, Easy to share with client, another designer or manufacturer electronically easier to edit e.g. change a detail, change the material, colour or size.</p> <p>angles. Bring other standardised component models into the model.</p> <p>where a CAD model can be uploaded to a CAM machine which could make it. For example a 2D laser cutter or vinyl cutter which could cut components out. The advantages of CAM:</p> <p>so a laser cutter or vinyl cutter which could cut components out. The advantages of CAM:</p> <p>se, CAM will create identical components, CAM can reduce the time required to produce the components.</p> 	Know why CAD is used
3-4 Computer Aided Manufacture	<p>used by design engineers to create ideas quickly, designers will create many ideas in order to decide which is better. Designers use other techniques to create design ideas and during design development, these include: isometric, oblique and orthographic drawing. Isometric drawing is a type of 3D drawing, with 30-degree angles. Often a grid paper is used and drawn upon. This type of drawing takes account of perspective but has the advantage of being to scale so it can be taken off them by an engineer.</p> 	Know when it is best to use CAM
5-6 Types of drawing used in engineering	<p>Oblique projection is where a drawing is created as a side view in scale and then lines making the drawing are drawn at an angle. This does not take account of perspective in a similar way to an isometric drawing.</p> 	Understand how designs can be represented in formal methods that will improve communication.
7-8 Oblique projection drawings	<p>3rd angle orthographic drawings are a method of representing a component or product in a way that an engineer will be able to manufacture with precision. The three views of the component allow the engineer to communicate all the key details. As it will allow to scale, there should be less chance of a detail being missed or misunderstood.</p>	Improve communication between designer and engineer / manufacturer.
9-10 Orthographic projection drawing	<p>To ensure designers can communicate precisely with manufacturers (who may even be in a different country speaking a different language) it is vital that rules are followed when creating an engineering drawing. Orthographic drawings must include: A title block which will contain key info about the component, the designer and the materials. The metric units of measurements. The scale of the drawing. The tolerance of the drawing—this is the acceptable margin of error e.g. +/- 1mm.</p>	Improve communication between designer and engineer / manufacturer.
11-12 Orthographic drawings and their features.		

AQA English Language Paper 2 Section A - key information and guidance:

- 1 hour 45 minute exam. • Section A = Reading which has 4 questions based upon your understanding of the texts.
- There are two non-fiction texts labelled Source A and Source B. • The sources can be things like speeches, articles, letters, biographies, autobiographies, leaflets and travel writing. • One of them will be from the 19th Century (Victorian era). The other one will be more modern. • They might be in full or edited extracts (parts of). • They will have a bit of text at the top in italics which explains where the text is from – read this carefully. • Spend 10m reading through the questions and both texts. • Identify the sections the questions ask you to focus on (Question 1 and Question 3). • Write something for each question. Spend 1 hour on Section A.



Question	Timing	Mark	Assessment Objective	What you do
1	5m	4	AO1	Identify 4 true statements from a section in one source.
2	10m	8	AO1	Summarise and infer from both sources.
3	15m	12	AO2	Analyse language in a section from one source.
4	20m	16	AO3	Compare writer's perspectives from both sources.

What is the writer telling us?

How has the writer shown this? (what methods have they used?)

Why has the writer done this??

TOP TIPS

1. Complete the paper backwards (complete the questions with the most marks first!)
2. Always upgrade your answer to Q4 if you have spare time!

Q5. [Form feature: such as headline & subheading for an article, 'Dear Mr Smith,' for a letter]

Adjective, adjective, adjective: [topic] + statement such as (is a disease spreading through our society).

Presently, we are like mindless addicts; preferring the heady rush of flippant fools and funny failures. Today's society is so immersed in the blizzard of triviality that [link to topic].

Personally, my own children, Edward and Alice, have been sucked into this [link to topic]. It is easy to dismiss this as unimportant but the noxious influence of [topic] is as pervasive as it is dangerous.

Publically, they (like so many their age) have become plagued with anxiety. According to figures from Plymouth University, over 75% of young people report extreme [link to topic]. Professor Hill, who co-authored the report, stated: 'society's fixation upon [topic] is a different kind of epidemic; causing untold damage to young people's minds. It is arguably worse because there is no vaccine.'

We must stop this!

Predictably, some people will... [consider opposing view] but this only perpetuates the problem. We have two options: continue to infect our minds or move forward to a future where we [positive link to topic]. Which would you rather choose?

[Form feature: such as 'Yours sincerely' for a letter or 'Thank you for listening' for a speech]

Q4. (x3)[SOURCE A WRITER]'s perspectives/feelings/intentions about [topic] are...

This is shown in the phrase '[QUOTATION]'

The word choice/imagery/method suggests...

However/Similarly, [SOURCE B WRITER]'s perspectives/feelings/intentions about [topic] were also/more...

This is shown in the phrase '[QUOTATION]'

The word choice/imagery/method suggests...

This links/contrasts because...

Q3. (x3)1. *The use of [method] suggests...*

2. *Additionally, the word choice '...' implies...*

3. *Furthermore, the use of '...' creates a mood of...*

4. *The '...' is symbolic of...*

5. *The word choice '...' links to idea of...*

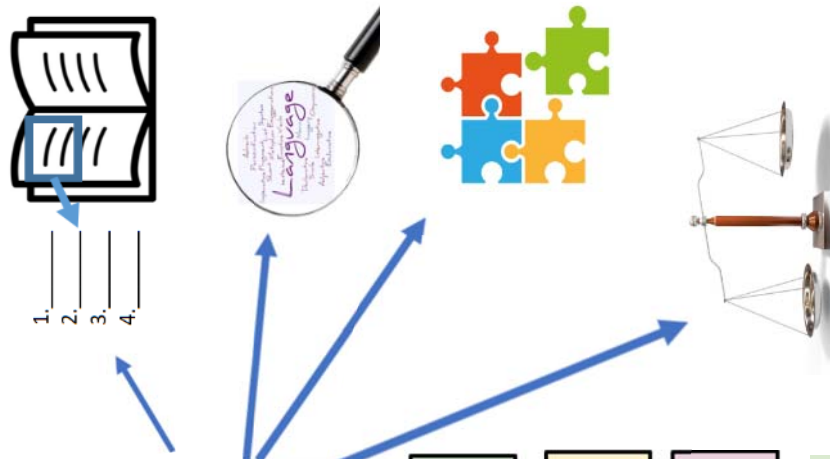
Q2. Source A shows [TOPIC] in the phrase '...'.
The writer does this to make the reader feel...

However/Similarly Source B shows [TOPIC] in the phrase '...'.
The writer does this to make the reader feel...

AQA English Language Paper 1 Explorations in Creative Reading and Writing

Section A - key information and guidance:

• 1 hour 45 minute exam. • Section A = Reading which has 4 questions based upon your understanding of the text. • There is one fiction text which is an extract from either a novel or a short story. • There is a bit of text at the top in italics which explains where the text is from – read this carefully. • Spend 5m reading through the questions and the extract. • Identify the sections the questions ask you to focus on (Question 1 and Question 3). • Write something for each question. Spend 1 hour on Section A.



Question	Timing	Marks	Assessment Objective	What you do
1	5m	4	AO1	List 4 things from the text.
2	10m	8	AO2	Analyse language in a section.
3	10m	8	AO2	Analyse structure across whole source.
4	30m	20	AO4	Evaluate – to what extent do you agree with a statement.

What is the writer telling us?

How has the writer shown this? (what methods have they used?)

Why has the writer done this??

TOP TIPS

1. Complete the paper backwards (complete the questions with the most marks first!)
2. Always upgrade your answer to Q4 if you have spare time!

Q5. Nobody dies anymore.

[link to task]

I am isolated in the waiting room of this squat grey clinic. There is a poster – to distract us or something. It is a strange choice... [describe picture].

How did we get here? Scientists plucked at the strands of DNA that played the chords of eternal life. Strung up the troublesome aging gene and (for the lucky few) silenced it. So now in this symphony there was just one minor note: children.

These places used to be crowded but now children are an indulgence. Not everyone has the marker that enables aging to be suspended so they brought in a test for all pregnancies. Makes sense; no-one wants to live knowing that they are the only one who is going to die. Makes sense until it is your child.

So here I am... No, here we are. Alone. Awaiting the results of the genome sequencing test for you.

Will you live forever or will you be discarded before you even have a chance? Why am I even talking to you? You barely exist yet.

[Link to task/picture]

They are calling me in.

Nobody dies anymore but will they let you live?

Q4. (x3) I agree that [STATEMENT]. It is clearly shown by [QUOTATION 1]. The imagery/word choice/method suggests... Additionally, the phrase [QUOTATION 2] reinforces... Throughout, the idea that [STATEMENT] is shown by phrases such as [QUOTATION 3]. The imagery/word choice/method suggests... Also, the phrase [QUOTATION 4] adds to this because...

Towards the end, the argument that [STATEMENT] is illustrated by the phrase [QUOTATION 5]. The imagery/word choice/method suggests... Linking with this, the phrase [QUOTATION 6] contributes to this as...

Q3. At the beginning the writer focuses on... The phrase '...' is used at this point to interest the reader in...

Throughout the middle, the writer develops the focus to... The phrase '...' is used at this point to interest the reader in...

Towards the end, the writer focuses on... The phrase '...' is used at this point to interest the reader in...

The 1st person perspective makes the text seem more personal. /OR/ The 3rd person perspective makes the text seem more detached.

Q2. (x3) 1. The use of [method] suggests...

2. Additionally, the word choice '...' implies...

3. Furthermore, the use of '...' creates a mood of...

4. The '...' is symbolic of...

5. The word choice '...' links to idea of...

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 rebirth.



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.	<p>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.</p> <p>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.</p> <p>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.</p> <p>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!)</p> <p>Context: Poor Law In Victorian times, those who were poor 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.</p> <p>Key Themes: Redemption Supernatural Social justice Kindness Exploitation Greed</p>
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 created 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.	

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'
2.	' unsinkable , absolutely unsinkable '
3.	'obscene fat carcass '
4.	'A chain of events'
5.	'I'd give thousands - yes, thousands '
6.	' Mummy '
7.	'(with sharp sarcasm)...You were the wonderful Fairy Prince .'
8.	'Girls of that class -'
9.	'she was pretty and a good sport '
10.	'Lower costs and higher prices'

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 world,
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 through 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

Food Preparation and Nutrition

Commodities: Fruits and vegetables

Organic foods	Growth & Process	Nutrient Value
<p>Organic: production of food without fertilisers, herbicides or pesticides. The foods are free from trans-fats, GM food and most additives. Advantages: less ethical concerns, lower environmental impact, more sustainable & many people feel the food tastes better and is higher quality. Disadvantages: that it has a lower yield and higher labour and so is more expensive to buy.</p>	<p>Processed fruit and vegetables are useful alternatives to fresh. They can be; pre-prepared, canned, frozen, dried or juiced. This could be for convenience, to increase shelf life or allow availability all year round. All fruits and Vegetables need to be washed to remove insecticides, dirt, soil or insects before cooking or eating. This needs to be done in cold water. Any peeling needed should be done as thinly as possible.</p>	<p>Fruits and Vegetables contain a wide variety of nutrients including; carbohydrate (energy), Vitamins A (for vision) C (antioxidant, healing tissues, and iron absorption), B, E & K, Calcium, Folate (healthy blood cells & nervous system), Potassium (blood pressure and nervous function), Magnesium (teeth and bone health) Iron as well as fibre (gut health).</p>
Classification	Storage	
<p>Fruit and Vegetables are classified according to the part of the plant they come from. Fruits are the part of the plant that carries the seeds, they can be; stoned, citrus, hard, soft berry or currants. Vegetables in the soil are; roots, tubers & bulbs. Vegetables above ground are; leaves, flowerheads, stems, fungi, seeds and pods. Vegetables in water are sea vegetables.</p>	<p>Ideally they should be consumed within a few days of purchase as this is when they will be at their most flavoursome and nutritious. All vegetables should be stored in a cool dry and dark place. Leaves such as spinach, cabbage, spring greens and broccoli should be kept in the salad drawer in a fridge. Root vegetables, bulbs and tubers will keep for several months in a dark dry place.</p>	

Commodities: Cereals

GM crops	Growth & Process	Classification
<p>Genetically modified foods (GMF) are developed to produce a product at a lower price and have greater benefit (durability and/or nutritional value). GM foods currently available have passed safety assessments and are not likely to pose a threat to human health. Future developments may alter nutrient content, reduce allergic potential or improve efficiency of production.</p>	<p>Wheat is one of the main cereal crops grown in the UK. It will grow in a variety of soils. Tractors and ploughs are used to turn the soil in a field before seeds are planted in the Autumn or Spring. Crops are harvested in the Autumn. Wheat undergoes a primary processing of milling to grind wheat into flour. Flour can then be bleached (made white) and fortified with Vitamins and minerals.</p>	<p>Cereals are edible grasses which are grown and harvested for their grain. The endosperm, the germ and the bran are of particular importance. The most popular cereals are; wheat, rice, oats, maize and barley. Cereals are described as a staple food are starchy foods which can be consumed all year.</p>
Nutrient Value	Diet	Food science
<p>When cereal is in its natural form (whole grain) it is a rich source of nutrients, mainly starchy carbohydrates and protein. Fat is also found in the whole grain, as are Vitamins B and E. Fibre is also in the bran. Nutritional content of cereals may change as the grain is processed.</p>	<p>Carbohydrates should make up 1/3 of your daily diet, to supply energy, essential vitamins and minerals and dietary fibre. Grains are an essential element of a healthy diet and eating high fibre whole grains may help reduce the risk of heart disease and type 2 diabetes and control blood cholesterol. Secondary processing of wheat turns it into items such as pizza, cake, bread and pies.</p>	<p>Coagulation; heat causes the protein present to set. Gelatinisation; mixing starch and water forms a suspension, adding heat causes the starch granules to absorb the moisture and swell. This thickens the liquid making a gel. Dextrinisation; exposing starch to dry heat colours it brown. Retrogradation; chilling and freezing can cause wheat thickened sauces to 'weep'.</p>

Food Preparation and Nutrition

Storage

Cereal crops should be stored in a cool dry environment to reduce the likelihood of yeasts, moulds and fungi contaminating the crop. They should also be kept clean and free from rodents, birds and insects or pests. Fungi can produce mycotoxins, birds and rodents can transfer disease, mites can carry fungal spores and bacteria.

Scenario prep

As the body ages, metabolism slows down and there may be a tendency to lose muscle mass and gain weight. Older people tend to eat less food, but still need to eat a balanced diet with all the essential vitamins and minerals. Especially Vitamin D and Calcium to maintain bone health. Coeliac disease is triggered by gluten and causes the body's own immune system to attack its tissues. Gluten free products carry a symbol.

Commodities: Dairy

Food wastage

Food sustainability looks at the impact of food production on the world's 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 be 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 an emulsion meaning it has tiny globules of fat floating in water. Emulsions are colloids. 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 bacteria present) or Bio.

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 can be kept in a cupboard. Evaporated should be stored in the fridge once opened.

YEAR 11 CYCLE 1 GEOGRAPHY – Urban Issues and Challenges Knowledge Organiser

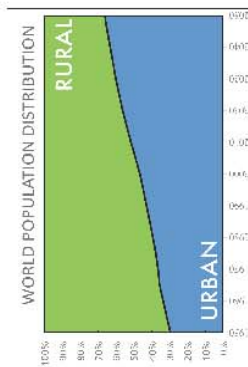
WEEK 1

Urban trends

Urbanisation: the proportion of the world's population who live in cities.

By 2030, it is expected that 60% of the world's population will live in urban areas.

The proportion of people living in towns and cities varies in different parts of the world.



In most of the world's richer countries over 60% of the population live in cities. This includes Europe, North America and Oceania. Urbanisation rates are slowing as most people already live in cities. In south and south east Asia, it is 50%. All but six countries in Africa have urban populations of more than 20%.

The largest growth in urban population by 2050 will take place in India, China and Nigeria.

A **megacity** is a city with a population of more than 10 million. In 1975, there were only four megacities. At present, there are 33 megacities. The UN predicts that by 2050 there will be 60 megacities.

WEEK 2

Why do cities grow?

Urbanisation is the result of the **natural increase** of a population (births minus deaths) plus migration.

Natural increase tends to be higher in LICs (such as Cambodia) and in some NEEs (such as India).

Rural-urban migration: the movement of people from the countryside into towns and cities.

Push factors

Farming is hard and poorly paid

Desertification and soil erosion makes farming difficult

Drought and other climatic hazards reduce crop yields

There are few doctors or hospitals and schools provide only a basic education

Rural areas are isolated due to poor roads.

Pull factors

There are more well-paid jobs

A higher standard of living

They already have friends and family there.

A range of entertainment

Public transport is better

There is a better chance of getting an education

There are better medical facilities.

WEEK 3

Importance of Lagos

Lagos is the largest city in Nigeria. Population 15 million.



It is an important centre of trade and commerce, with about 80% of Nigeria's industry is based in and around Lagos and it is now the main financial centre in West Africa.

Growth of Lagos

In 1960, the city had less than one million residents. By 1990, it was four million.

Lagos' expansion really took off during the oil boom in Nigeria in the 1970s, which drew thousands of people to the city for work. This is called rural-urban migration.

Push factors

Political unrest creates insecurity. The terrorist group, Boko Haram, is active in the north of Nigeria.

Land is degraded due to farming.

Land in the Niger Delta region is polluted by the oil industry.

Another reason for Lagos' growth is natural increase due to the youthful population.

WEEK 4

Opportunities in Lagos

With about 10% of Nigeria's population, Lagos contributes about 30% of its GDP.

Lagos is building a new city on the coast called Eko Atlantic, destined to be the new financial hub for West Africa. It will be home to a 250,000 people and employ 150,000 more.

Unemployment is much lower than the rest of Lagos at 9.9%. About 40% of the workforce in the informal sector.

Olusosun rubbish dump sorts 3,000 tonnes of waste by hand per day with 500 workers. Without this, a lot of reusable rubbish would go to waste.

Challenges in Lagos

The lack of properly built homes and rapid rural-urban migration has forced millions to build their own homes in squatter settlements.

Makoko slum – On the edge of the lagoon, homes extend into the water on stilts. Known as the Venice of Africa. Lack basic facilities and sanitation. Around 250,000 inhabitants. Most make a living from the informal economy and fishing.

Average Lagos resident spends three hours per day in traffic. 40% of new cars in Nigeria are registered in Lagos. Air pollution rates five times higher than the limit.

WEEK 5

Improving quality of life for the urban poor

Tempohousing – Constricting affordable housing using shipping containers. Working with a Netherlands based TNC. 20% cheaper than conventional buildings and 3-5 times quicker to construct – as little as two weeks.

Eko Atlantic – A new city suburb on the shores of Victoria Island. Protected by an 8km long sea wall, the city will have its own power and water supply and an independent road network. Tonnes of sand and heavy rock were poured into the ocean to provide 10 sq km of land for shops, offices and homes. Will provide employment, engaging the population in more formal job opportunities which will increase taxes for the government.

Floating school – Meet the educational needs of Makoko. Environmentally sustainable as it would withstand the rising sea levels associated with climate change. Classroom can host lessons for 60 children at a time and it would be used as a community centre. The original school collapsed during heavy seasonal thunderstorms in 2016. It was a symbol of bottom-up development.

YEAR 11 CYCLE 1 GEOGRAPHY – Urban Issues and Challenges Knowledge Organiser

WEEK 6

Importance of London

Six international airports such as Gatwick and Heathrow.

529 foreign companies are listed in London.

London has a modern day

importance as a world city.

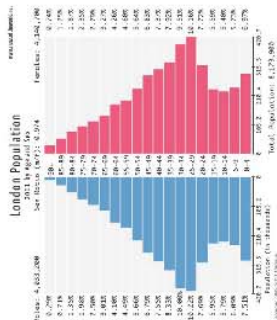
London is a centre for tourism – in 2015, the city welcomed 17.4 million international visitors.

London generates approximately 22% of the UK's GDP.

392,400 people are employed in City of London.

Growth of London

In 1801, there were one million people in London. Today, there are approximately 8.7 million. It is expected to reach 10 million by 2030.



Most diverse city in the UK – 36.7% of the population were born abroad. The largest numbers have come from India, Nigeria and Jamaica, as well as Eastern Europe. Young people in their 20s to 30s move to London for work.

WEEK 7

Opportunities in London

London is one of the greenest cities in the world with 47% green space.

Urban greening is about how we increase and protect the green spaces we have in cities.

There are 30,000 allotments in London and 8.1 million trees!

Huge number of cultural attractions such as the British Museum and Buckingham Palace.

Events to celebrate multiculturalism such as the Notting Hill Carnival.

Challenges in London

Social deprivation is a major problem: 2 million people live in poverty. Boroughs like Kensington have a much higher life expectancy than Newham.

There is a housing shortage, with London's population growing by 100,000 people every year, but only 20,000 new homes being built.

Brownfield sites: land that has been used, abandoned and now awaits some new use.

Commonly in inner cities areas e.g. old factories.

Green belt: land around cities on which there are strict planning controls to prevent urban development. Established in 1947.

WEEK 8

Urban regeneration: Olympic Park

Stratford lies in the Lower Lea Valley in the borough of Newham.

Before the regeneration

Unemployment was 7.8% in Newham compared to 4.5% in the rest of London.

Lower GCSE results and household incomes (£29,000 compared to £37,000 per year in the rest of London).

Lack of infrastructure. There was plenty of derelict, unused, overgrown land that used to be industrial sites.

The land was badly contaminated by chemicals.

There were 250 businesses on the site, employing 5,000 workers.

After the regeneration

The Athlete's Village was renamed East Village and provides 2,800 homes for local people.

The Olympic stadium is now the new home of West Ham United.

With over 100 hectares of open space, Queen Elizabeth Olympic Park is the largest new park in London for over a century.

The Aquatics Centre and Velopark are open to schools and the public.

A new commercial centre employs 25,000 people and Westfield employs 10,000.

WEEK 9

Features of sustainable living

Social: people have a say in how the city is run; people encouraged to walk; enough doctors and schools

Economic: Good quality, affordable homes are built; well-paid jobs.

Environmental: Rivers kept clear of waste/pollution; solar and wind energy to create electricity; lots of green, open space.

Sustainable transport strategies in London

In 2014, roughly 75 million passengers used the underground trains and buses in London each week.

Boris Bikes – self hired in public places in London for as little as £2 for short journeys, reducing traffic congestion. Found at 750 docking stations with 11,500 bikes in total.

Congestion charge – A fee charged to any vehicle travelling in central London between 7am and 6pm Mon-Fri. It has reduced journey times by 14%.

Cycle Superhighways – The 3-mile North-South route cost £160 million. Reduces pressure on the road, bus and rail and reduces serious injuries. Cost businesses £5.3 million a year with a challenge to meet delivery times: 40 miles of cycleways in total with 730,000 journeys being made by bike per day.

ULEZ (Ultra Low Emission Zone) – high polluting cars have to pay £12.50 to enter central London.

WEEK 10

Freiberg: a sustainable city

In 1970, the German city of Freiberg set a goal of urban sustainability. 220,000 inhabitants.

Social sustainability

People take part in decision making and there is a need to provide enough affordable homes. Local people can invest in renewable energy resources. In one district, residents have invested over £5 million in windmills, solar energy, a hydro-electric plant and energy conservation.

Vauban, the inner city district, houses 5500 people in low energy buildings.

Economic sustainability

People come to attend conferences on sustainability, providing jobs for local people. Jobs also created in the research and manufacture of solar technology. More than 10,000 people employed in 1500 environmental businesses.

Environmental sustainability

350 community collection points for recycling

Energy provided for 28,000 homes from burning waste

More than 88% of packaging waste is recycled.

44,000 trees have been planted

The city plans to be 100% powered by renewable energy by 2050.

Week 14 through to 24- Unit UCO92 Design in the hair and beauty sector

CONTROLLED ASSESSMENT

Unit UCO92 Synoptic assignment-

Task 1	A review of the impact that one hair or beauty entrepreneur has had on the hair or beauty industry and society.
Task 2	A report justifying your business idea and how your business will stand out from those of your competitors.
Task 3	A design brief to communicate your business plan to a financial institution (target audience).
	An evaluation of the success of your design brief created within Task 3.
Task 4	An evaluation of your overall performance across Task 1, Task 2, and Task 3 for the internal synoptic assignment, to include recommendations for your personal development.

Creative brief- used for visual designs, copy, advertising and websites, usually directional (has a target market or message); examples include: magazines, product launches, fashion shows

Reflective practice and reviewing own performance- SWOT Analysis-

A SWOT analysis is a framework that can be used for assessing the capabilities of your business or project. It can enable you to identify the following: Strengths and Weaknesses – which are internal to you, Opportunities and Threats – external factors that can have an impact. The results can enable you to focus on the positive and minimise the negative.

Reflective practice-

The process of thinking and reflecting on your experiences in the workplace and trying to learn and improve as a result of the outcome.

Self-reflection process-

- Be proud –**
Don't be afraid to shine a light on your achievements. By knowing your strengths, you can apply the same logic and methods to improve your weaknesses
- Be honest and critical –** This is the most important part of the process. Judging your performance accurately is crucial for improvement and growth.
- Strive for growth –**
An openness and willingness to hear the hard truths and move forwards is vital. Growth will create opportunities and open doors in the future
- Track your achievements –**
Record all the milestones that you have achieved. This allows you to see the path you have laid, and the gaps left to be filled
- Be professional –**
Maintain your professional integrity and apply this to your journey

Exam Preparation-

Recapping on all topics

Command Verbs-

Plan- To 'plan', you are required to provide a detailed proposal of how you will do or achieve an end goal/project/task.

Review- To 'review', you are required to summarise key points, discuss each one and provide your opinion.

Select- To 'select', you are being asked to carefully choose the most relevant answer. This word is used within Multiple Choice Questions.

Summarise- To 'summarise', requires you to pick out the key points or main features.

Define- Explain the exact meaning of a word or phrase

Describe- Write about the subject giving detail information

Evaluate- Make a judgement or conclusion about something

Explain- Make a subject clear to someone by adding more detail and facts.

Types of settings	
Health care	GP surgery, hospital, dentist, health centre, opticians, pharmacy
Social care	Residential home, day centre, homeless shelter, retirement home, support group

The rights of service users	Definition	Example
Choice	Gives service users control over decisions	Offering a range of different treatments
Confidentiality	Limits access to private/personal information	Medical records must be kept secure
Consultation	Service users should be asked their opinions and views	Spoken to about the treatment options
Equal and fair treatment	Gives everyone the same rights	A day trip is accessible for all
Protection from harm and abuse	Organisations should have policies in place to protect all individuals	Risk assessments to identify potential risks

Person-centred values	
Individuality	Each person has their own identity, needs and wishes
Choice	All services users are entitled to make their own decisions
Rights	Everyone is entitled to rights set out by legislation
Independence	Enable service users to not rely on others
Privacy	Being mindful of situations
Dignity	Having regard for the feelings and opinions of others
Respect	Treating an individual in a way which shows they have importance
Partnership	Different professionals and agencies working together
Encouraging decision making of service user	Ensuring service users are supported to make decisions

6 C's– Qualities of a service practitioner	
Care	They will do what they can to provide the best treatment and support
Compassion	Providing care and support with kindness, consideration and empathy
Competence	The ability of the provider to deliver high quality care
Communication	It's important to speak and listen in a way which is respectful
Courage	The ability to speak up when someone has concerns
Commitment	The provider being dedicated to deliver the best care

Effects on service users' health and wellbeing if person-centred values are not applied

<p><u>Physical Effects</u></p> <ul style="list-style-type: none"> • Pain if no medication is given • Illness may get worse • Injury • Malnutrition/dehydration 	<p><u>Intellectual Effects</u></p> <ul style="list-style-type: none"> • Loss of concentration • Lack of mental stimulation • Failure to achieve potential
<p><u>Emotional effects</u></p> <ul style="list-style-type: none"> • Depression • Anger/frustration • Stress • Feeling upset 	<p><u>Social Effects</u></p> <ul style="list-style-type: none"> • Feeling excluded • Feeling lonely • Become withdrawn • Lack of social skills

<u>Benefits of applying the person-centred values</u>	
<u>Benefits for service providers</u>	<u>Benefits for service users</u>
Provides clear guidance	Improves the quality of care being given
Improves job satisfaction	Improves quality of life
Maintains or improves quality of life	Supports service users to develop their strengths

<u>The benefits to service users' health and wellbeing when their rights are maintained</u>	
Empowerment	Makes service users feel in control of their lives
High self-esteem	Makes service users feel confident and respected
Service users' needs are met	This results in good physical and mental health

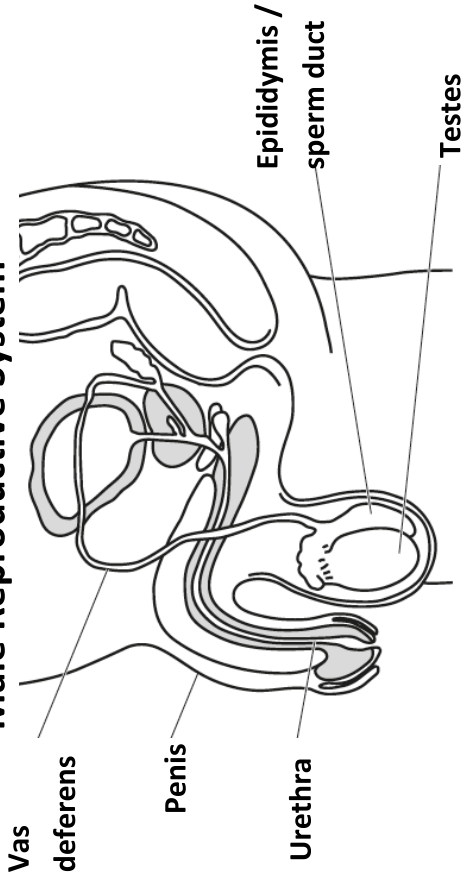
LO1 1.4 To recognise and evaluate methods of contraception, their efficiency and reliability

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 progesterone) 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) Progesterone pill= Spotty skin, tender breasts
Progesterone-only pill (Contraceptive pill)	Tablet containing progesterone only. Taken daily, within a three hour time period. Thickens mucus in the cervix, preventing sperm contacting the egg.	99% effective if used 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 - Can cause mood swings, headaches, weight gain and tender breasts - No STI protection - Can cause headaches, raised blood pressure and blood clots - No STI protection
Intrauterine device/ system (IUD or IUS)	A small, t-shaped plastic device inserted into the uterus by doctor/nurse.	99% effective if fitted correctly	- 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
Contraceptive injection	Injection every few weeks/12 weeks.	99% effective if used correctly	- Effective if taken within 24 hours - Widely available / sometimes free	- Vomiting and diarrhoea makes it ineffective - May cause headaches - No STI protection
Contraceptive patch	Worn on the skin, introduces hormones into the body. Thickens mucus in cervix.	99% effective if used effectively		
Contraceptive implant	A small tube inserted in the skin of woman's upper arm.	99% effective if used correctly		
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		
Emergency contraceptive pill	Pill taken within 24 hours or up to 72 hours after unprotected sex	24 hrs = 98% 72 hrs = 52%		



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

Male Reproductive System

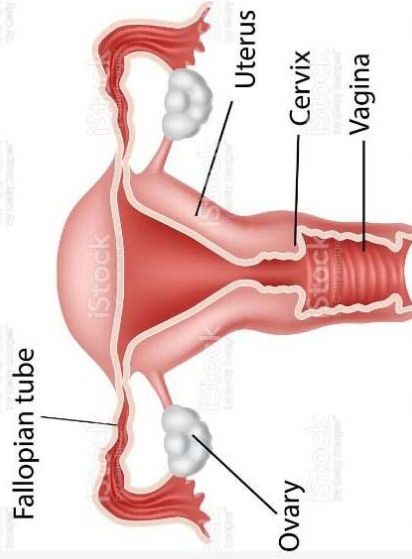


Structure	Function
Testes	Male reproductive glands where sperm and
Epididymis / sperm duct system	Sperm duct system consists of epididymis which stores the sperm.
Vas deferens	Muscular tube which extends upwards of
Urethra	The tube insides the penis, carries both urine and
Penis	Involved in sexual intercourse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

Signs and Symptoms of Pregnancy

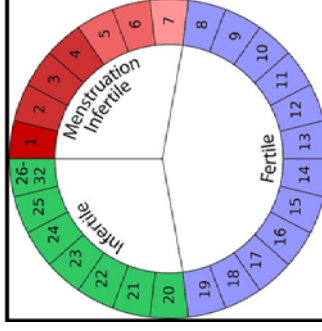
- Missed period or a very light period
- Breast changes– Just before a period breasts feel larger or tender. Nipples may appear darker.
- Passing urine frequently

Female Reproductive System



Structure	Function
Ovaries	Controls the production of the hormones oestrogen and progesterone. Contains undeveloped eggs.
Fallopian	Connect the ovaries to the uterus. Ovaries
Uterus (womb)	Uterus (also called the womb), a pear shaped muscular bag where the baby (foetus) develops. Egg is implanted here.
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 enters the vagina during sexual intercourse.

Menstrual Cycle and Fertilisation 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/Fertilisation

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

Fertilised egg arrives in the uterus. Once attached firmly, conception has been achieved and the egg is called an embryo.

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.
- Germany 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!

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.

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.

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)

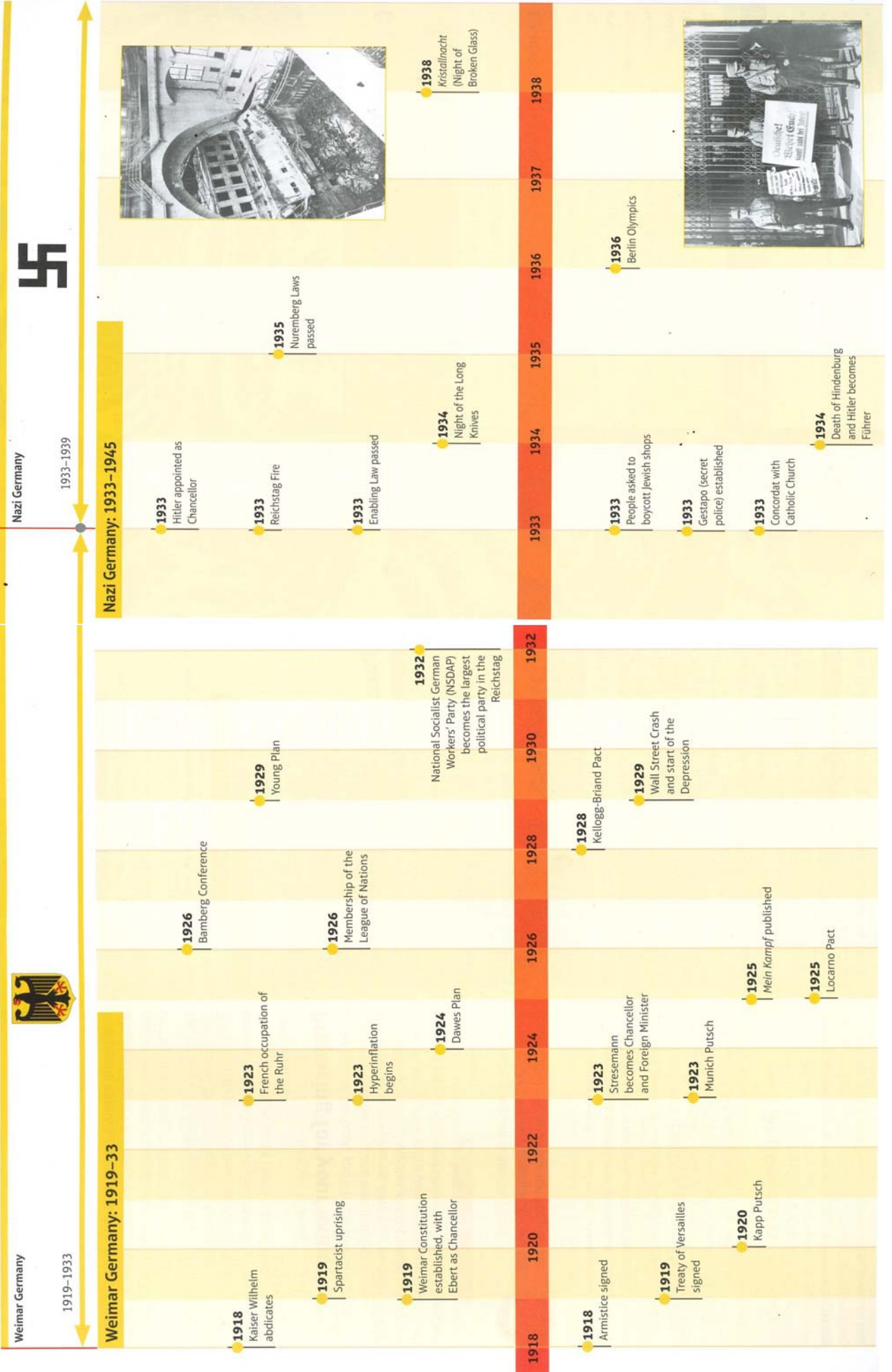
Political problems

The Socialist Chancellor Von Brüning tries to ban the SA and SS but instead makes the right-wing parties (Nationalists) all team up against him in a coalition.

Von Brüning 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).

Timeline: Weimar and Nazi Germany, 1918–39



Life in Nazi

Democracy and Freedom

Hitler became Chancellor in 1933 and soon afterwards the Reichstag burnt down (a young Dutch Communist confessed to the crime). Hitler used the event to persuade President Hindenburg to grant him Emergency powers to pass laws without parliament. Hitler banned the Communist Party from parliament, called a new election and once the Nazis had more seats in government, Hitler called a vote for an Enabling Act to give Hitler the power to make laws for six years – the vote was won and democracy ended in Germany. The Nazis then set up their police state system: the secret police (Gestapo) were given powers to arrest and imprison Germans, the judges had to swear loyalty to Hitler and the Nazis, and the first concentration camp opened for political opponents in 1933. The German people were encouraged to inform on each other.



Young People

Hitler and the Nazis understood that if they gained the loyalty of German children, they would grow up to be loyal citizens. Also, young people liked the Nazi government as it was radical, violent, made rapid change, and often gave power to the young over their own parents and teachers. Other youth groups were banned after 1933 and Nazi organisations were promoted (and made compulsory after 1936). The main groups were the Hitler Youth for boys and Young Maidens for girls. Both groups promoted physical fitness and outdoor activities although the Hitler Youth specifically had war games for the young boys to become soldiers. Education also promoted war in maths and race studies in science. Girls' lessons included domestic sciences and needlework. There were small pockets of resistance.



Workers

It was important for the Nazis to increase production to make the economy stronger, therefore workers were strictly controlled. All unemployed men of working age were enrolled in the RAD to build roads and clear forests to get them used to working and making Germany better. Trade Unions were banned and replaced with the DAF although this group helped employers by lowering wages and increasing work hours. Hitler started the Four Year Plan in 1936 to get the nation ready for war. Military hardware was produced at a high rate and workers were an important part of this drive to make Germany stronger. Once the war had begun, slave labour provided by prisoners began to replace some of the German workers who had to serve in the military instead. Women were also asked to work to support the war effort.



Women

The falling birth rate was a worry for the Nazis and Hitler who wanted Germany to be powerful. The Nazis also saw women in a traditional way as wives and mothers. Therefore, the 1933 Law for the Encouragement of Marriage promoted large families in return for a 1000 mark loan as well as The Mothers' Cross medal awarded for especially high numbers of babies. These policies did increase the birth-rate, although during the war, the Nazis approach had to change. They needed women to work in the factories after 1942 and so Nazi propaganda persuaded them to do so. The racial purification of Germany was sped up with the Lebensborn program forcing blonde German women to have children with SS Aryan men. Women were supposed to dress in a traditional style and avoid makeup.



Jewish People

Nazi speeches and propaganda had always blamed Germany's problems on the Jews and their solutions involved removing them from society. Therefore, after 1933 this policy began to affect the 3% of Germans who were Jewish. Simple bans from public areas, certain shops and swimming pools became official in 1935 when the Nuremberg Laws banned marriages between Jews and non-Jews and prevented Jews from being citizens. At this point Jewish businesses and homes could be confiscated and given to non-Jews, education was denied, and Jews forced to carry identity papers at all time. This racist policy became more radical when the Nazis invaded more territory and had more Jewish people to "process". After 1942, the Nazis built labour and death camps to use the people as slaves and destroy all those who couldn't work.



Church

When Hitler first took power he said the Nazis and the Christian Church in Germany wanted the same things: to get rid of godless Communists and Jewish people. This was reflected in the Papal Concordat in which Hitler agreed not to interfere in Catholic Church, schools or youth groups as long as the Pope wouldn't speak out against the Nazis. However, Hitler began to close Catholic youth groups (see above section) and force lesson changes on the catholic schools. Thereafter Catholic and Protestant clergy (vicars) were a source of opposition for the Nazis, many of whom were arrested by the Gestapo and sent to the concentration camps (e.g. Niemoller). A small section of the German Church remained loyal to the Nazis and flew swastikas inside their churches.



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 =

$\pi \times \text{diameter} = \pi d$

$2 \times \pi \times \text{radius} = 2\pi r$

Area of a circle =

$\pi \times \text{radius squared} = \pi r^2$

Right-angled triangles

Pythagoras' Theorem

For a right-angled triangle,

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

Trigonometric ratios (new to F)

$\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$, $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$, $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$

Volumes

Cuboid = $l \times w \times h$

Prism = $\text{area of cross section} \times \text{length}$

Cylinder = $\pi r^2 h$

Compound measures

Speed

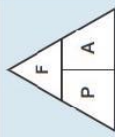
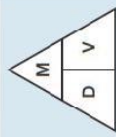
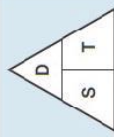
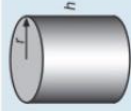
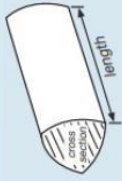
$\text{speed} = \frac{\text{distance}}{\text{time}}$

Density

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

Pressure

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



Constructing Pie Charts

The angle to draw for each sector is

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

Angles in Polygons

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

Where n is the number of sides of the shape

Exterior Angles add up to 360°

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

Interior + Exterior = 180°

Other useful formulae

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

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

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)

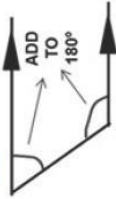
CUBE NUMBERS

→ 1, 8, 27, 64, 125 etc
(1x1x1) (2x2x2) (3x3x3) (4x4x4) (5x5x5)

PRIME NUMBERS

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

Angles formed by parallel lines



ALTERNATE

CORRESPONDING

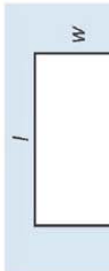
INTERIOR



Foundation Formula Quiz

Areas

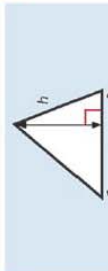
Rectangle =



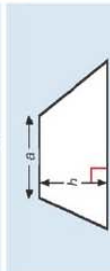
Parallelogram =



Triangle =

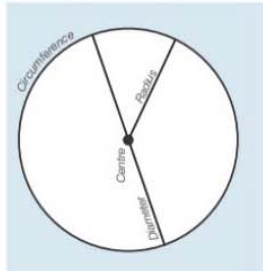


Trapezium =



Circles

Circumference =



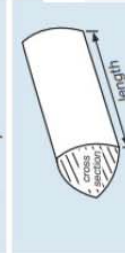
Area of a circle =

Volumes

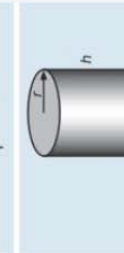
Cuboid =



Prism =

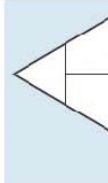


Cylinder =

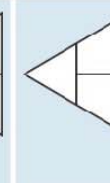


Compound measures

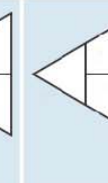
Speed =



Density =



Pressure =



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

Angles formed by parallel lines

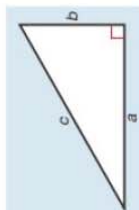


Foundation Formula Quiz

Right-angled triangles

Pythagoras' Theorem

For a right-angled triangle,

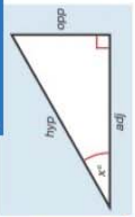


Trigonometric ratios (new to F)

$\sin x^\circ =$

$\cos x^\circ =$

$\tan x^\circ =$



Angles in Polygons

Sum of Interior Angles = $(n - 2) \times 180^\circ$
Where n is the number of sides of the shape

Exterior Angles add up to 360°

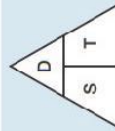
One exterior angle in a REGULAR polygon = $\frac{360^\circ}{n}$

Interior + Exterior = 180°

Compound measures

Speed

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



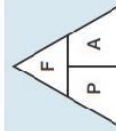
Density

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



Pressure

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

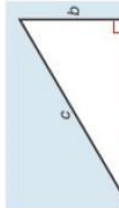


Right-angled triangles

Pythagoras' Theorem

For a right-angled triangle,

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

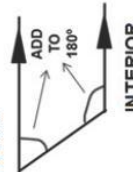


Trigonometric ratios (new to F)

$$\sin x^\circ = \frac{\text{opp}}{\text{hyp}}, \cos x^\circ = \frac{\text{adj}}{\text{hyp}}, \tan x^\circ = \frac{\text{opp}}{\text{adj}}$$

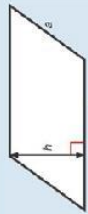


Angles formed by parallel lines



Areas

Parallelogram = $b \times h$



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

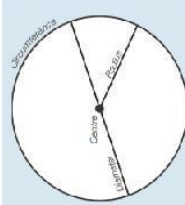


Trapezium = $\frac{1}{2}(a + b)h$

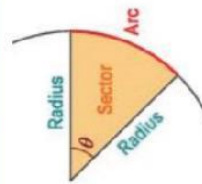


Circles

Circumference = $\pi \times \text{diameter} = \pi d$
OR
 $2 \times \pi \times \text{radius} = 2\pi r$



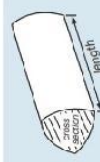
Area of a circle = $\pi \times \text{radius squared} = \pi r^2$



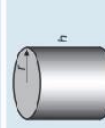
Area of a Sector
 $A = \frac{\theta}{360^\circ} \times \pi r^2$
Length of an Arc
 $A = \frac{\theta}{360^\circ} \times \pi d$

Volumes

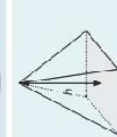
Prism = $\text{area of cross section} \times \text{length}$



Cylinder = $\pi r^2 h$



Volume of pyramid = $\frac{1}{3} \times \text{area of base} \times h$



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

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

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

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

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

Straight lines

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

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

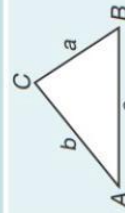
Perpendicular gradients multiply to give -1 .

Trigonometric formulae

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

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

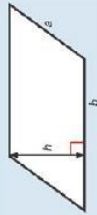
Area of triangle = $\frac{1}{2} ab \sin C$



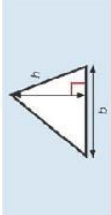
x	0°	30°	45°	60°	90°
$\sin x$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
$\cos x$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
$\tan x$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	Undefined (asymptote)

Areas


Parallelogram =



Triangle =

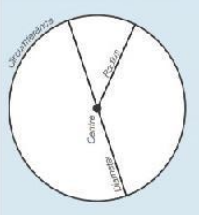


Trapezium =



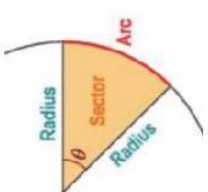
Circles

Circumference =



Area of a circle =

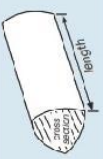
Area of a Sector $A =$



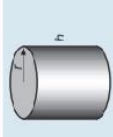
Length of an Arc $A =$

Volumes

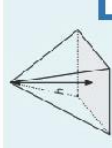
Prism =



Cylinder =



Volume of pyramid =



Angles in Polygons

Sum of Interior Angles =

Where n is the number of sides of the shape

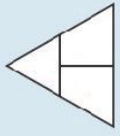
Exterior Angles add up to

One exterior angle in a REGULAR polygon =

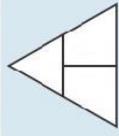
Interior + Exterior =

Compound measures

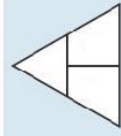
Speed =



Density =



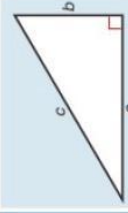
Pressure =



Right-angled triangles


Pythagoras' Theorem

For a right-angled triangle,

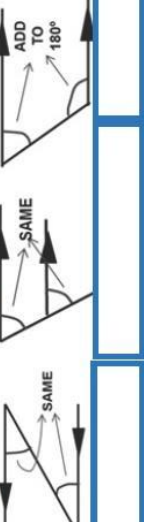


Trigonometric ratios (near to F)

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



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

$a^0 =$

$a^{-n} =$

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

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

$\sqrt{a \times b} =$

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

Straight lines

gradient =

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

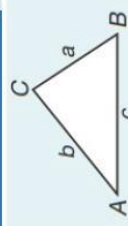
Perpendicular gradients multiply to give

Trigonometric formulae

Sine Rule

Cosine Rule

Area of triangle =



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

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]

2: 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?

4: 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]

5. 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'.

Other books considered holy in Islam include; The Torah (Tawrat); The Psalms (Zabur); The Gospel (Injil); Scrolls of Ibrahim.

3: Prophethood

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.

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.

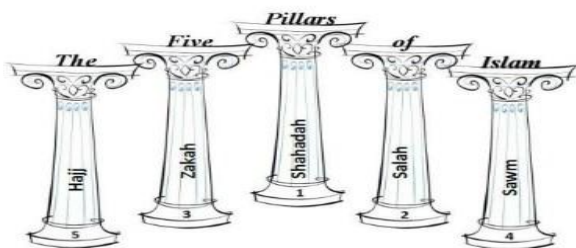
6: The Five Pillars (Part 1)

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.

The 5 pillars of Islam



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

6: The Five Pillars (Part 2)

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**.
- ⇒ 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]

6: The Five Pillars (Part 2)

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.



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.



Hajj

Hajj is a pilgrimage. It should be made at least once in a Muslim's lifetime, provided they are 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

7: Festivals

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.

Muslims gather together in mosques or outdoor areas to say prayers. 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. 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.

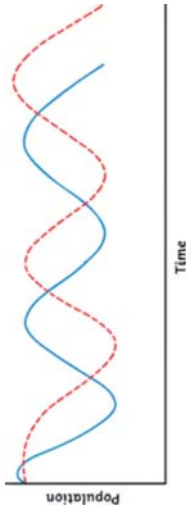
Food chains

1 The source of all energy in a food chain is the sun's radiation. It is made useful by plants and algae which produce organic compounds through photosynthesis.

The living organisms use the energy to produce biomass and grow.

When a living organism is consumed, some of the biomass and energy is transferred. Some of the energy is lost.

Remember: the arrow in a food chain indicates the direction of the flow of energy.



Populations of predators and prey increase and decrease in cycles. The size of the predator population depends on the size of the prey population and vice versa. Overall, there is a stable community.

Species will compete with one another and also within their own species, to survive and to reproduce.

Mutualism occurs when both species benefit from a relationship.

Parasitism occurs when a parasite only benefits from living on the host.

Animals compete for resources such as food, water and space/shelter. They may also compete within their own species for mates

Plants compete for resources including light, water, space and minerals. All these resources are needed for photosynthesis so the plant can make its own food.

Plants do not need to compete for food.

TASK Enquiry task

1. What piece of equipment is usually used to sample abundance of an organism in an area? _____ (1)

2. Describe how students could use the mean number of clover plants in a quadrat to estimate the total number in the field. _____

_____ (3)

3. A student wanted to investigate how the distance from the shoreline impacted on the number of barnacles growing on the rocks on a beach. Explain how they would investigate this using quadrats. _____

_____ (3)

TASK

1- What is the definition of an abiotic factor? _____ (1)

2. List **three** abiotic factors which can affect an aquatic organism. _____ (3)

3. List **three** abiotic factors which can affect a plant. _____ (3)

2 Required practical: Field techniques, transects and quadrats

To Measure the population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species

Abiotic factors are the non-living factors of an environment. E.g. moisture, pH, CO₂, O₂, light, temperature, wind. **Biotic** factors are the living factors of an environment. E.g. predators, competition, pathogens, availability of food.

Transects line:

Your teacher will help you identify a species of plant to identify (easiest with daisies)

1-Lay the 20m tape measure in a line from the base of a tree to an open area of ground.

2-Put the 25cm x 25cm quadrat against the transect line. One corner of the quadrat should touch the 0m mark on the tape measure.

3-Count the number of plants within the quadrat and record them in a table.

4. Move the quadrat 2m up the transect line and count the number of plants again. Record in the table.

5. Continue to place the quadrat at 2m intervals and count the number of plants in each quadrat.

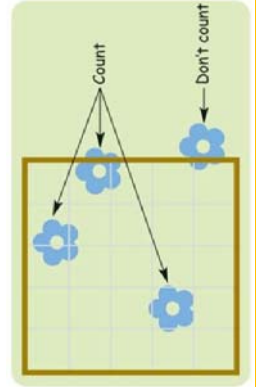
6. Gather data from your class to plot a graph of number of plants against light intensity.

Quadrats:

Quadrats can be used to measure the frequency of an organism in a given area e.g. the school field. You could count the individual organisms or estimate the percentage cover. You must collect data from at least two areas to make a comparison. Quadrats should always be placed randomly.

Methods to make the sampling random include using a number generator to generate coordinates of the field to be sampled.

mean = total number of organisms / number of quadrats



TASK

3

Some animals are adapted to survive in very cold conditions such as the Arctic. Explain how the adaptations of Arctic animals help them to survive in cold conditions.

(6)

Threats to biodiversity

4

Biodiversity is the variety of living organisms on the earth or in an ecosystem. It is important in helping to maintain stable ecosystems. Organisms are often interdependent, relying on others as food sources, or to create suitable environmental conditions to survive. Human survival is also dependent on this biodiversity.

Deforestation and land use

Humans growing population increasingly use land for buildings, quarrying, mining, agriculture and landfill. Deforestation (to use wood as a fuel/material or to clear space for other uses) destroys habitats where other organisms live.

Peat bogs are produced when decomposition occurs over a very long time. Peat stores a lot of carbon and can be extracted for use by gardeners or as an energy source. Burning peat releases a lot of carbon dioxide into the atmosphere which contributes to the greenhouse effect (see below).

Trees absorb carbon dioxide for photosynthesis, so as they are cut down and removed, less carbon dioxide is taken from the atmosphere. Furthermore, when the trees are burned, they release carbon dioxide back into the atmosphere. The excess carbon dioxide can lead to global warming and the changes to the ecosystem cause reduced biodiversity.

Global warming

The **greenhouse effect** is a natural process (Sun's radiation is trapped within the atmosphere and maintains a temperature suitable to support life on Earth).

Most of the radiation from the Sun is absorbed by Earth's surface. Some infrared radiation is reflected from the surface and absorbed by the greenhouse gases and clouds in the atmosphere. This is then re-emitted in all directions.

However, due to many contributing factors, the global temperature is gradually increasing. Greenhouse gases trap the heat around the Earth; the most concerning is carbon dioxide. Human activities contribute to the excess amount of carbon dioxide in the atmosphere and so are a cause of global warming. Global warming leads to the melting of ice caps, rising sea levels, flooding, changes to climate, changes in migration patterns, changes in species distribution and reduction in biodiversity.

Growing population

The global human population has exceeded 7 billion.

Human population has increased due to modern medicine and farming methods, reducing famine and death from disease. This means a greater demand for food, resources and water. It also means more waste and emissions are created.

An ecosystem is the interaction of a community of living organisms (biotic) with the non-living (abiotic) parts of their environment. To survive and reproduce, organisms require a supply of materials from their surroundings and from the other living organisms there. Plants in a community or habitat often compete with each other for light and space, and for water and mineral ions from the soil. Animals often compete with each other for food, mates and territory. Within a community each species depends on other species for food, shelter, pollination, seed dispersal etc. If one species is removed it can affect the whole community. This is called interdependence. A stable community is one where all the species and environmental factors are in balance so that population sizes remain fairly constant.

3

Adaptations:

Adaptations are specific features of an organism which enable them to survive in the conditions of their habitat. Adaptations can be structural, behavioural or functional:

Structural adaptations are features of the organisms body e.g. colour for camouflage.

Behavioural adaptations are how the organism behaves e.g. migration to a warmer climate during colder seasons.

Functional adaptations are the ways the physiological processes work in the organism e.g. lower metabolism during hibernation to preserve energy.

A plant or animal will not physically change to adapt to its environment in its lifetime. Instead, there is natural variation within the species and only organisms whose features are more advantageous in the environment survive. The survivors then go on to reproduce and pass on their features to some of their offspring. The offspring who inherit these advantageous features are better equipped to survive.

Charles Darwin described this process as 'survival of the fittest'

TASK

4

1-What **two** factors have increased the use of resources by humans?

_____ and _____ (2)

2. List **three** categories of pollution caused by human activity.

1 _____

2 _____

3 _____ (3)

3. Name **four** processes which humans carry out that reduces the land available to other animals, plants and microorganisms

1 _____

2 _____

3 _____

4 _____ (4)

TASK

5 Copy and complete the following table. Consider the negative aspects of how humans interact with ecosystems. What could be done positively to counteract this effect?

Negative effects of human interaction on an ecosystem	Positive effects of human interaction on an ecosystem
Global warming and deforestation	
Animals and plants becoming in danger of extinction due to reduction in habitat	
Large 40 acre fields growing one crop	
Dumping waste in landfill sites	

TASK

- 6
1. What is precipitation in the water cycle?
_____ (1)
 2. List **three** main processes in the carbon cycle.
1 _____,
2 _____,
3 _____ (3)
 3. Copy the following text, using the keywords below to fill in the gaps:

Microorganisms, **photosynthesis**, carbon, atmosphere, **decomposition**.

The **carbon cycle** returns _____ from organisms to the _____ as **carbon dioxide**.

Plants use carbon dioxide in _____
_____ return carbon to the atmosphere as carbon dioxide and **mineral ions** to the soil by _____.

Maintaining ecosystems and biodiversity

5 There are many ways that biodiversity and ecosystems are maintained: Breeding programmes can help to protect endangered species from extinction.

Conservation programmes can help to protect and preserve specialised ecosystems and habitats such as peat bogs and coral reefs.

Reintroduction of hedgerows and field margins on agricultural land can help improve biodiversity by breaking up the monoculture crops.

Sustainable forestry programmes help to manage the woodlands and reduce the deforestation to a sustainable rate.

Societies actively encourage recycling and reusing of products and packaging to reduce the household waste going to landfill sites.

Unfortunately these programmes can be difficult to manage. They are often expensive and are difficult to regulate. People who are employed in certain areas, e.g. tree felling, cannot always transfer their skills to an environmentally friendly role and so become unemployed. It is difficult to maintain biodiversity whilst preventing crops being overrun with pests and weeds, which would affect food security for the human population.

Water cycle

6 **Convection** is the movement caused within a fluid as the hotter, less dense material rises and colder, denser material sinks under the influence of gravity. This results in the transfer of heat.

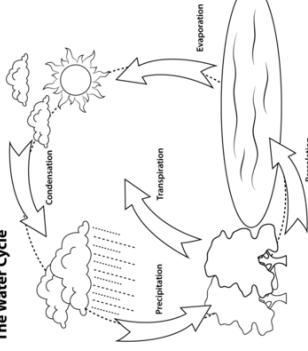
Evaporation occurs when heat energy from the surroundings (or a heat source) is transferred to water particles as kinetic energy. The particles begin to move more rapidly and can turn from a liquid into a gas.

Condensation occurs when moving particles transfer kinetic energy to the surroundings. The particles begin to move even more slowly and can turn from a gas into a liquid.

Precipitation occurs when rain, snow, sleet, or hail falls to (or **condenses** on) the ground.

Transpiration is the process by which water is carried through plants from roots to the stomata on the underside of leaves and it evaporates into the surroundings.

The Water Cycle



Carbon cycle

The main focus on the carbon cycle is its transfer.

to and from the atmosphere. When carbon is in the atmosphere, it combines with oxygen to form carbon dioxide, a greenhouse gas.

Carbon is transferred from the atmosphere when plants absorb carbon dioxide for photosynthesis and when the gas is dissolved into oceans.

Carbon is transferred to the atmosphere through respiration by animals, plants and bacteria and by combustion of fossil fuels (coal, oil and natural gas).

Dead animals and plants are decomposed and their matter is broken down by microorganisms (decomposers such as microbes and fungi). When the organisms are broken down, the microbes and fungi release carbon dioxide into the

The rate of a chemical reaction can be found by measuring the quantity of a reactant used or the quantity of product formed over time:

$$\text{mean rate of reaction} = \frac{\text{quantity of reactant used}}{\text{time taken}}$$

$$\text{mean rate of reaction} = \frac{\text{quantity of product formed}}{\text{time taken}}$$

The quantity of reactant or product can be measured by the mass in grams or by a volume in cm^3 . The units of rate of reaction may be given as g/s or cm^3/s .

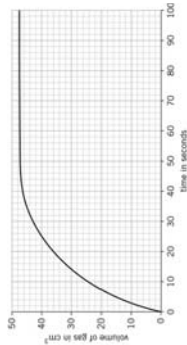
A graph can be plotted to show how the quantity of product formed or the quantity of reactant used up changes with time. The gradient of the curve at a specific time indicates the **actual rate** of the reaction at that time. The rate can be calculated by drawing a tangent to the curve at that point, followed by calculating the gradient of the tangent drawn.

Worked examples:

A student is investigating the rate of the reaction between magnesium and hydrochloric acid. The equation for the reaction is;



She measures the volume of gas produced every 10 seconds and plots the results on a graph.



Example 1:

Calculate the **mean rate** of the reaction after 20 seconds.

Step 1

Using the graph, first of all find out the total volume of gas produced after 20 seconds. **HINT:**

always draw horizontal and vertical lines on the graph to help with reading the values of the axes. After 20 seconds, 36 cm^3 of gas has been produced.

Step 2

Then substitute the values into the equation;

$$\begin{aligned} \text{mean rate of reaction} &= \frac{\text{quantity of product formed}}{\text{time taken}} \\ &= \frac{36 \text{ cm}^3}{20 \text{ s}} \\ &= 1.8 \text{ cm}^3/\text{s} \end{aligned}$$

Example 2:

Calculate the rate of the reaction at 20 seconds.

Step 1

You need to draw a tangent to the curve at the specified time (a straight line that just touches the curve at that point).

Step 2

Construct a right angled triangle, using the tangent as its longest side. Choose two points which you can easily read the values for from the axes as the corners for the triangle and make the triangle as large as possible to reduce measurement errors.

Step 3

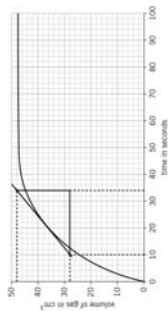
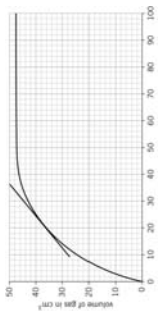
Calculate the gradient of the tangent using the equation:

$$\begin{aligned} \text{gradient} &= \frac{\text{change in } y}{\text{change in } x} \\ \text{change in } y &= 48 \text{ cm}^3 - 28 \text{ cm}^3 = 20 \text{ cm}^3 \\ \text{change in } x &= 34 \text{ s} - 10 \text{ s} = 24 \text{ s} \\ \text{gradient} &= \frac{20 \text{ cm}^3}{24 \text{ s}} \\ &= 0.83 \text{ cm}^3/\text{s} \end{aligned}$$

Enquiry Task

Use the data provided to calculate the mean rate at the time indicated for each of the following reactions. Remember to include units.

- The decomposition of hydrogen peroxide in which 15 cm^3 of oxygen was produced after 6 minutes. (2 marks)
- The reaction between sodium thiosulfate and acid in which 6 g of sulfur was produced in 24 seconds. (2 marks)
- The reaction between calcium carbonate and hydrochloric acid in which 0.6 g of calcium carbonate was used up after 2.5 minutes. (2 marks)

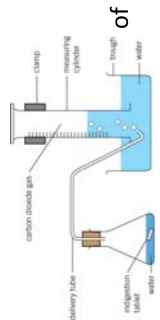


Factors which affect the rates of chemical reactions include: the **concentrations** of reactants in solution, the **pressure** of reacting gases, the **surface area** of solid reactants, the **temperature** and the presence of **catalysts**.

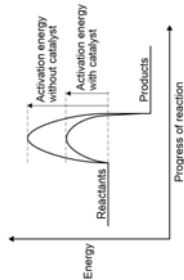
Collision theory explains how various factors affect rates of reactions. Chemical reactions can occur only when reacting particles collide with each other and with sufficient energy. The minimum amount of energy that particles must have to react is called the **activation energy**.

Increasing the concentration of reactants in solution, the pressure of reacting gases, and the surface area of solid reactants increases the frequency of collisions and so increases the rate of reaction. Increasing the temperature increases the frequency of collisions and makes the collisions more energetic, and so increases the rate of reaction.

A common investigation to measure the rate of reaction for temperature is by using an indigestion tablet containing citric acid and sodium hydrogencarbonate. When the tablet is added to water, carbon dioxide is given off. The time taken for a certain amount of gas to form can be used as a measure of the rate of reaction.

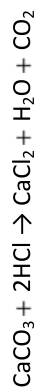


Catalysts change the rate of chemical reactions but are not used up during the reaction. Different reactions need different catalysts. Enzymes act as catalysts in biological systems. Catalysts increase the rate of reaction by providing a different pathway for the reaction that has a lower activation energy. The reaction profile opposite shows a catalysed reaction. The activation energy is much lower than without the catalyst as seen by the height of the curved line.



Enquiry Task

Calcium carbonate reacts with hydrochloric acid to produce calcium chloride, water, and carbon dioxide. The equation for the reaction is:



A student reacts a single cube of calcium carbonate with dimensions of 15 mm x 15 mm x 15 mm with an excess of hydrochloric acid and measures the mass of carbon dioxide given off in the first 10 seconds. He finds that 2.0 g of carbon dioxide is produced.

1. Calculate the surface area of the cube of calcium carbonate. (1 mark)
2. The student then grinds an identical cube of calcium carbonate into smaller pieces in a pestle and mortar and repeats the experiment.
 - a. Predict what mass of carbon dioxide would now be produced in the first 10 seconds. (1 mark)
 - b. Explain your prediction. (2 marks)

Required practical

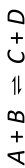
The reaction between calcium carbonate (marble chips) and hydrochloric acid can be monitored by measuring the volume of gas produced at regular intervals over a period of time.

You are expected to write down a hypothesis on how you think the rate of reaction will change as the concentration of acid is increased. Then you will need to plan an experiment to test your hypothesis. Finally you will carry out the investigation, record your results in a suitable table, and analyse your results to check whether your hypothesis was correct. Try to remember this practical and jot down all that you can remember.

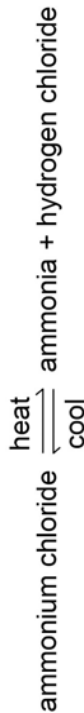
Enquiry Task

1. Write down your hypothesis about how the rate of reaction varies with concentration and explain your answer.
2. Plan an experiment to test your hypothesis. Answer the following questions to help you understand.
 - a. What apparatus will you use to collect the gas? You may wish to draw a diagram.
 - b. What mass of marble chips will you start with (between 1 and 2 g)?
 - c. What concentrations of acid will you use (between 0.25 and 2.0 mol/dm³)?
 - d. What are the safety considerations of using 2.0 mol/dm³ hydrochloric acid?
 - e. What volume of acid will you use?
 - f. How often will you take readings?
 - g. How long will you take readings for?
 - h. What control variables will you use?
 - i. How will you present your results?
3. What are the main sources of error in this experiment?
4. Suggest ways in which the experiment could be improved.

In some chemical reactions, the products of the reaction can react to produce the original reactants. Such reactions are called **reversible reactions** and are represented by a special arrow. The top arrowhead is the forwards reaction with the bottom arrowhead representing the backwards reaction.



The direction of reversible reactions can be changed by changing the conditions.
For example:



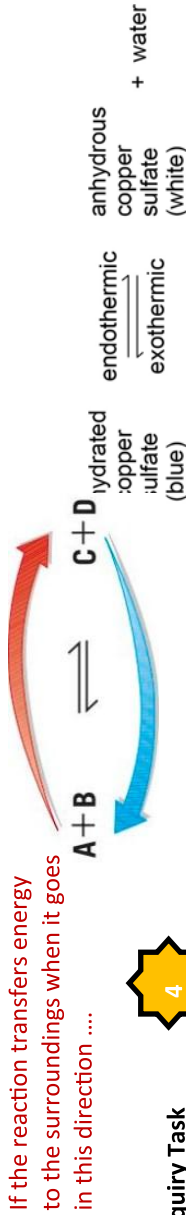
Have you tried to neutralise an acid and an alkali in a test tube with some universal indicator? It is difficult to get just the right amount to make the solution neutral rather than an acid (red) or alkali (purple).

uodhæur sɪtɪ ɪ: səʊð
ɪ: ɪeʊɪ sɛɪɪpɪnɔ:ɪns æɪt wɔ:ɪ ʌðɪəʊə ʒɔ
ɪnɔ:we əweɪs æɪt ʌɪpæxə ɪ: əɪt ɪɪw ɪ:...

Enquiry Task

- Ammonium chloride breaks down on heating to form ammonia and hydrogen chloride gas. This is an example of a thermal decomposition reaction. Suggest the reversible reaction and how it would form.
- Thermochromatic materials change colours at different temperatures. This change is reversible. Suggest a use

If a reversible reaction is exothermic in one direction, it is endothermic in the opposite direction. **Remember** - energy cannot be created or destroyed. The same amount of energy is transferred in each case. For example:



Enquiry Task

reversible, salt, water, blue, H₂O, irreversible, hydrated, pink, wet, atom.

Cobalt (II) chloride can be used to test for the presence of water. Anhydrous cobalt (II) chloride is blue. When water is present, the water reacts with the anhydrous salt to form the _____ salt, CoCl₂·6H₂O, which is pink. The hydrated salt can be warmed in a desiccator to remove the _____ and reform the anhydrous salt which is a _____ colour. The anhydrous _____ can then be reused. These reactions can be summed up by the equation: CoCl₂ + 6 _____ = CoCl₂·6H₂O. This is an example of a useful _____ reaction.

When a reversible reaction occurs in apparatus which prevents the escape of reactants and products, **equilibrium** is reached when the rate of the forward reaction equals the rate of the reverse reaction. As the forwards and reverse reactions are continuously taking place although they might not be seen (due to the unseen atomic level), a state of dynamic equilibrium is reached.



HINT: Imagine running up the steps on the downwards escalator. At the beginning you are going faster and so you move up the escalator. Gradually you get to the point where you are at equilibrium and it looks like you are not

moving. You are still running upwards and the escalator is still moving downwards. You are in the same place. What happens if the escalator speeds up or if you run faster?

5

Enquiry Task

- Explain what is meant by dynamic equilibrium. (1 mark)
- Explain why equilibrium can only be achieved in a closed container. (1 mark)
- The situation at equilibrium is just like running up an escalator that is going down – if you run up as fast as the escalator goes down, you stay in the same position. Think of a different model to explain dynamic equilibrium and to illustrate the features of a dynamic equilibrium. Explain how it works fully in a step by step process. You might be asked to demonstrate your model in class. (4 mark)

4

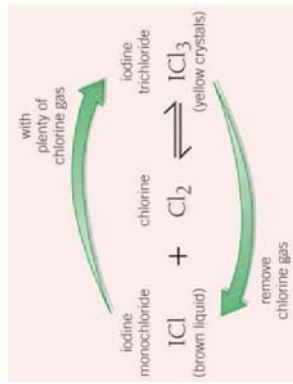
4

The relative amounts of all the reactants and products at equilibrium depend on the conditions of the reaction. If a system is at equilibrium and a change is made to any of the conditions, then the system responds to counteract the change.

The effects of changing conditions on a system at equilibrium can be predicted using **Le Chatelier's Principle**.

The reversible reaction between iodine monochloride (ICl) which is a brown liquid and chlorine gas (Cl₂) a yellowish green gas will make yellow crystals of iodine trichloride (ICl₃).

When the chlorine gas is plentiful the reaction is quite stable producing the iodine trichloride crystals. However, if the concentration of chlorine gas is lowered, the rate of the forwards reaction decreases and the rate of the reverse reaction increases. This will cause more of the iodine trichloride crystals to turn back into iodine monochloride and chlorine gas, until the equilibrium is reached again.



If the concentration of one of the reactants or products is changed, the system is no longer at equilibrium and the concentrations of all the substances will change until equilibrium is reached again.

If the concentration of a reactant is increased, more products will be formed until equilibrium is reached again.

If the concentration of a product is decreased, more reactants will react until equilibrium is reached again.

Enquiry Task

1. State Le Chatelier's principle. (1 mark)
2. Complete the following sentences:
 - a. If the concentration of a reactant is increased, more _____ will be formed until equilibrium is reached again.
 - b. If the concentration of a product is _____, more reactants will



If the **temperature** of a system at equilibrium is **increased**:

- the relative amount of products at equilibrium **increases for an endothermic reaction**
- the relative amount of products at equilibrium **decreases for an exothermic reaction**.

If the **temperature** of a system at equilibrium is **decreased**:

- the relative amount of products at equilibrium **decreases for an endothermic reaction**
- the relative amount of products at equilibrium **increases for an exothermic reaction**.

For **gaseous** reactions at equilibrium (i.e. **pressure**):

- an **increase in pressure** causes the equilibrium position to shift towards the side with the **smaller number of molecules** as shown by the symbol equation for that reaction
- a **decrease in pressure** causes the equilibrium position to shift towards the side with the **larger number of molecules** as shown by the symbol equation for that reaction.

Enquiry Task

In industry ethanol is produced by the reaction of ethene and steam at 300 °C and 60 atmospheres pressure using a catalyst.

The equation for the reaction is:

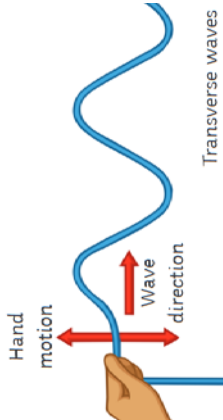


1. Explain how increasing the pressure of the reactants will affect the amount of ethanol produced at equilibrium. (2 marks)
2. The forward reaction is exothermic. Use Le Chatelier's Principle to predict the effect of increasing temperature on the amount of ethanol produced at equilibrium. Give a reason for your prediction.

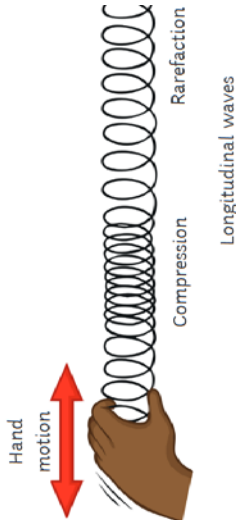
1

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.

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

2
$$f = \frac{1}{\text{time period (s)}} = 1 \div \text{frequency (Hz)} \quad \text{OR} \quad t = 1 \div f$$

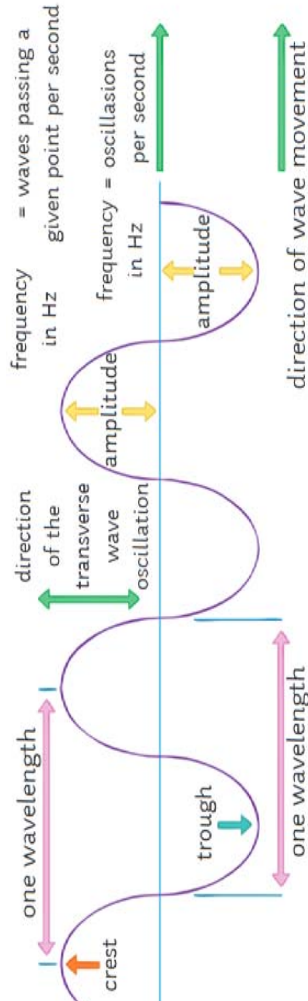
The **wave speed** is how quickly the energy is transferred through a medium (how quickly the wave travels). **wave speed (m/s) = frequency (Hz) x wavelength (m)**

$$v = f \times \lambda$$

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 x 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.

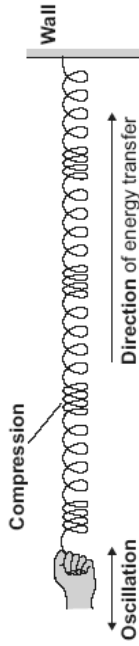


TASK 1-Which **one** of the units below is used to measure wavelength? Circle your answer.
meter hertz joule watt

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.



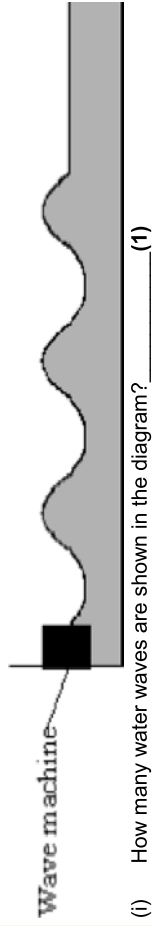
(i) Use words from the diagram to complete the following sentence. Put only **one** word in each space.

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)

TASK

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



(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.

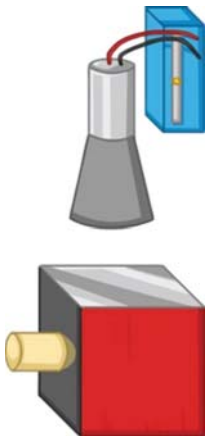
Every second, two waves go past a person standing in the swimming pool.

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. _____

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 **infra-red** radiation:



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:

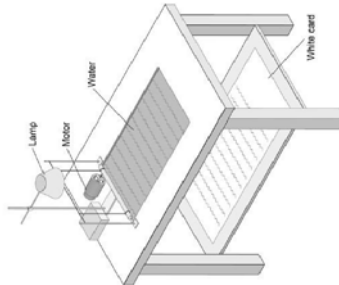
The **ray box** will become hot during use and may cause minor burns. To prevent this, you should not touch the lamp and ensure you allow time for the ray box to cool after use.
You will be working in a semi-dark environment which means there is a higher risk of trips or falls. You should ensure your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

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)

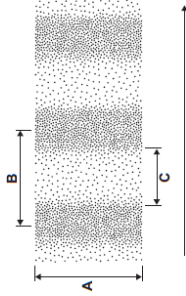
(b) The period of the sound waves produced by the motor is 8.3 milliseconds.
Calculate the frequency of the sound waves.(3)

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:

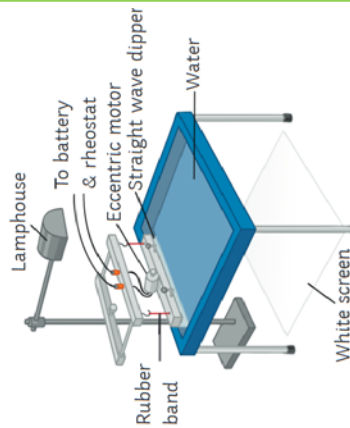
1-Turn on the power and observe the waves. Make any necessary adjustments to the equipment so that the waves are clear to observe (alter the voltage supplying the motor). **N.B. The lowest frequency setting on the motor will ensure that the waves measurements can be made more easily.**

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 x 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.

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.
	microwaves	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.
High	ultraviolet	Sterilising water and killing bacteria. Detecting forged bank notes.	Causes skin tanning and can lead to burns or skin cancer.
	X-rays	Medical imaging and airport security scanners.	Very little energy is absorbed by body tissues. Instead, it is transmitted through the body. These waves can lead to gene mutation and cancer.
	gamma rays	Sterilising medical equipment or food and treatment for some cancers.	

6 TASK

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

_____ (4)

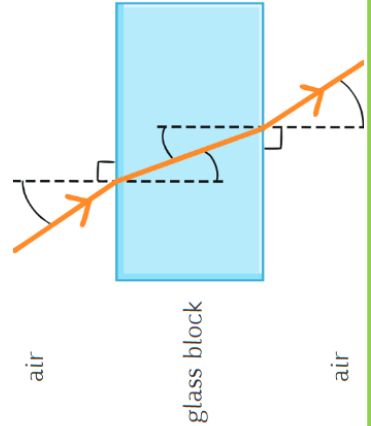
_____ (4)

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.

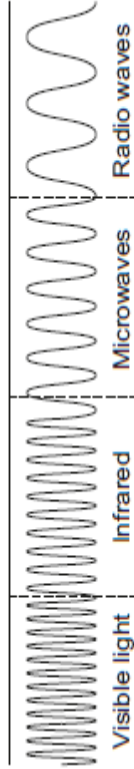
-if the wave is at a right angle to the boundary, it goes along the normal.



TASK

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.

Barriers to Participation in Sport

- Limited time available to participate
- Cost of participation
- Lack of provision or accessibility
- Discrimination



Groups who Experience Barriers to Participation

- Gender
- Carers
- People with Family Commitments
- Retired People/Over 60s
- Teenagers
- Parents (Singles or Couples)
- Ethnic Groups
- People Who Work
- People with Disabilities
- Families with Children
- Young Children
- Unemployed/Economically Disadvantaged



Values Promoted Through Sport

- Team Spirit
- Fair Play
- Inclusion
- Citizenship
- Tolerance & Respect
- National Pride
- Excellence



The Olympic Values

Respect – Excellence – Friendship

The Paralympic Values:

Courage – Determination – Inspiration – Equality

TOPIC AREA 2

SPORT STUDIES R184

TOPIC AREA 1

Popularity of Sports in the UK depends upon....

- Environment**
The lack of optimal conditions can reduce participation
- Success**
If an individual or team are successful at an event such as the Olympics, the sport will grow in popularity
- Provision of facilities**
In towns and cities there are more facilities available than in small villages
- Media Coverage**
Some sports get more media coverage than others
- Spectatorship**
A sport will become more popular if there are opportunities to spectate live or on TV.
- Social Acceptability**
Not all sports are seen as ethically acceptable
- Role Models**
Role models, who are highlighted in the media, can increase the number of people wanting to participate in a certain sport



Emerging Sports in the UK



Women's Football

Ultimate Frisbee

Women's Cricket

Improving Participation in Sport

- Provision
- The availability of sport
- Promotion
- The advertising and marketing of sports
- Access
- The accessibility of sport to all people in society



Clapping an opponent when they reach 50 runs in cricket



Shaking hands at the end of a match in football

Gamesmanship is the use of dubious methods to win or gain an advantage within a sport.



Deliberately grunting loudly in tennis

- Cheating /Immoral
- Disadvantages of taking PEDs
- Health Risks
- Financial/Bans
- Reputational Damage



- Wealthy/financial reward
- Pressure to succeed
- Need to win at any cost

Reasons for taking PEDs

- Increased chance of gaining sponsorship
- Level the playing field
- Boost confidence



Major Sporting Events

One-Off



Regular



Regular & Recurring



TOPIC AREA 3

Positives

- Improved national morale
- Increase in tourism
- Increase in employment
- Increase in sport participation
- Improved transport and infrastructure

Negatives

- Potential for terrorism/crime
- Increase in litter/noise
- Sports facilities unused after the event
- Money could be better spent elsewhere

SPORT STUDIES R184

National Governing Bodies

- Examples of NGBs
- Football Association (FA)
 - Lawn Tennis Association (LTA)
 - Rugby Football Union (RFU)
 - England Netball
 - England Hockey



TOPIC AREA 4

NGB Roles

- Promote Participation/Bring in Policies & Initiatives → Ensure Safety within their Sport
- Develop the sport's coaching and officiating infrastructure → Provide support, insurance and technical guidance to members
- Organise Tournaments and Competitions → Lobby for funding
- Rules & Discipline

Technology in Sport

Enhance performance



Increase the safety of participants



Increase fair play and increase the accuracy of officiating



Enhance spectatorship



Quicker recovery from injury

Enhanced performance



Lowers risk of injury

More accurate decisions

Technical analysis

Positive Effects of Technology in Sport

Increased cost of technological advances.

Unequal access to the same quality of technology.

Officials' decisions influenced by technology which does not always apply the best interpretation of the rule.



Availability and affordability of technology.

Potential reduction in the flow of the game through introduction of officiating technology.

Negative Effects of Technology in Sport

TOPIC AREA 5



Need to Know Dictionary: English – Unseen Poetry and Language Paper 2



Word	Definition
Rhyme	The repetition of syllables, typically at the end of a verse line.
Rhythm	The beat and pace of a poem.
Stanza	Stanzas separate poems into groups of lines.
Juxtaposition	A literary technique in which two or more ideas, places, characters and their actions are placed side by side in a narrative or a poem for the purpose of developing comparisons and contrasts.
Metaphor	A metaphor is a word or a phrase used to describe something as if it were something else.
Atmosphere	The pervading tone or mood of a place, situation, or creative work.
Intentions	The writer's intentions are the ideas he/she wants to convey/express to the reader.
Imaginative	Having or showing creativity or inventiveness.
Interpretation	How you, as a reader, respond to a text.
Implies	To imply is to indicate or suggest something without actually stating it.

Need to Know Dictionary: Maths – Exam Command Words

Word	Definition
Expand	To expand a bracket means to multiply each term in the bracket by the expression outside the bracket.
Factorise	Factorising is the reverse process of expanding brackets. To factorise you find the highest common factors of each term.
Simplify	To reduce (an equation, fraction, ratio etc) to a simpler form
Prove	Logical mathematical arguments used to show the truth of a mathematical statement.
Solve	Find a solution.
Calculate	To work out and answer, usually by adding, multiplying etc.
Density	The relationship between the mass of a substance and its volume.
Bisect	To divide something into two equal parts.
Iteration	Repeatedly carrying out a process to get closer and closer to the solution
Cumulative	The running total of the frequencies



Word	Definition
Vector	Vectors are used in science to describe anything that has both a direction and a magnitude. They are usually drawn as pointed arrows, the length of which represents the vector's magnitude.
Work done	Work is done when energy is transferred from one store to another. Work is also done when a force causes an object to move. When work is done against frictional forces acting on an object, the object's temperature increases.
Forces	A force is an influence that can change the motion of an object. A force can cause an object with mass to change its velocity, i.e., to accelerate. Force can also be described intuitively as a push or a pull.
Allele	Different forms of the same gene, sometimes referred to as variants.
Chromosome	A chromosome is a long threadlike structure, or the DNA molecule of nucleic acids and protein found in the nucleus of most living cells, carrying genetic information in the form of genes.
Gamete	A gamete, is a cell containing only one set of dissimilar chromosomes, or half the genetic material necessary to form a complete organism (i.e., haploid). During fertilisation, male and female gametes fuse, producing a diploid (i.e., containing paired chromosomes) zygote.
Evolution	In biology, evolution is the change in the characteristics of a species over several generations and relies on the process of natural selection. These characteristics are the expressions of genes that are passed on from parent to offspring during reproduction. Evolution relies on there being genetic variation in a population which affects the physical characteristics (phenotype) of an organism.
Hydrocarbon	A compound containing only hydrogen and carbon atoms.
Fractional distillation	A way to separate liquids from a mixture of liquids by boiling off the substances at different temperatures, then condensing and collecting the liquids. Commonly used to separate crude oil into the various substances such as petrol, diesel, kerosene, etc.
Cracking	The reaction used in the oil industry to break down a less useful large hydrocarbon such as bitumen, into a more useful and smaller hydrocarbons such as petrol.

Need to Know Dictionary: French



Word	Definition
Verb	A word that shows an action, such as 'jouer', or a state of being such as 'être' or 'avoir'.
Adjective	A word that describes a noun.
Adjectival agreement	In French, adjectives must agree with their noun, which means that they have to show whether they are masculine or feminine and singular or plural to match the noun.
First person singular	The pronoun 'Je' is first person singular.
Second person singular	The pronoun 'Tu' is second person singular.
Third person singular	The pronouns 'Il/Elle/On' are third person singular.
Masculine and Feminine	<ul style="list-style-type: none"> All French nouns have a grammatical gender - they are either masculine or feminine. EG: - 'le père', ● 'la mère'.
Present tense	Use the present tense to describe what happens regularly and what is happening now.
Pronoun	Pronouns replace nouns in a sentence.
Liaison	When a word ends in s, x, t or n and the next word starts with a vowel or an h, the s and x will sound like z, and the t and the n will be pronounced. This is called a 'liaison', as the words are linked together. EG: - 'C'est très ennuyeux'.
Silent final consonant	<ul style="list-style-type: none"> In French, some letters are silent, either at the start or at the end of a word, e.g. 'hôtel', 'chat'.
Phonics	The sounds that make up words.
Accent	Accents placed on words change the sound of a letter, e.g. é as in 'café'.
Question	Questions in French can be formed using 'Est-ce que', or by switching the verb and subject, 'Faites-vous vos devoirs ce soir?'
Modal verbs	EG: - pouvoir (be able to) devoir (have to, must, should) vouloir (want to).
Infinitive	An infinitive is a verb that has not been changed and is in its original form, e.g. ending in -er, -ir, -re meaning 'to...'

Need to Know Dictionary: Geography – The Changing Economic World



Word	Definition
Birth rate	The number of births in a year per 1000 of the total population.
Commonwealth	The Commonwealth is a voluntary association of 53 independent and equal sovereign states, which were mostly territories of the former British Empire. It is home to 2.2 billion citizens. Member states have no legal obligation to one another. Instead, they are united by language, history, culture, and their shared values of democracy, human rights, and the rule of law.
Death rate	The number of deaths in a year per 1000 of the total population.
De-industrialisation	The decline of a country's traditional manufacturing industry due to exhaustion of raw materials, loss of markets and competition from NEEs.
Demographic Transition Model	A model showing how populations should change over time in terms of their birth rates, death rates and total population size.
Development	The progress of a country in terms of economic growth, the use of technology and human welfare.
Development gap	The difference in standards of living and wellbeing between the world's richest and poorest countries (between HICs and LICs).
European Union	An international organisation of 28 European countries, including the UK, formed to reduce trade barriers and increase cooperation among its members. Seventeen of these countries also share the same type of money: the euro. A person who is a citizen of a European Union country can live and work in any of the other 27 member countries without needing a work permit or visa.
Fairtrade	When producers in LICs are given a better price for the goods they produce. Often this is from farm products like cocoa, coffee or cotton. The better price improves income and reduces exploitation.
Globalisation	The process which has created a more connected world, with increases in the movements of goods (trade) and people (migration and tourism) worldwide.
Gross national income (GNI)	A measurement of economic activity that is calculated by dividing the gross (total) national income by the size of the population. GNI considers not just the value of goods and services, but also the income earned from investments overseas.
Human Development Index (HDI)	A method of measuring development in which GDP per capita, life expectancy and adult literacy are combined to give an overview. This combined measure of development uses economic and social indicators to produce an index figure that allows comparison between countries.

Need to Know Dictionary: History – American West



Word	Definition
Additionally	An adverb used to introduce a new fact or argument.
Assimilation	The process of adapting or adjusting to the society you live in.
Conclusion	In essay writing, a strong conclusion aims to tie together your main points, show why your argument matters and leave the reader with a strong impression.
Frontier	In United States history, the advancing border that marked those lands that had been settled by Europeans. It is characterised by the westward movement of European settlers from their original settlements on the Atlantic coast (17th century) to the Far West (19th century).
Interpretation	How you, as a reader, respond to a text or how a writer views a historical time or event.
Led	The past tense of the verb 'to lead' is 'led', not 'lead'.
Meant	The past tense of the verb 'to mean' is 'meant' not 'ment'.
Reservation	An area of land managed by Native American tribes under the US government.
Sheriff	At first, newly-occupied land on the Plains was federal territory (it belonged to the US government) and was administered by a governor, three judges and a US marshal. When the area reached a population of 5,000, it became a territory, with locally-elected sheriffs, who could deal with local criminals. New territories were notoriously lawless.
Therefore	An adverb that means 'as a consequence', 'as a result', or 'hence'.

Need to Know Dictionary: Engineering Design

Word	Definition
Anthropometric	Anthropometrics is the practice of taking measurements of the human body and provides categorised data that can be used by designers.
Prototype	A prototype is a model of a product used to explore design alternatives, test theories, confirm performance and ensure the product is safe and user-friendly. Engineers use prototypes to figure out specific unknowns still present in the design.
Evaluate	To judge the quality and performance of a product.
Risk assessment	Process of working out the likelihood of harm or damage being caused by identified hazards.
Procedure	A process which includes: identify a problem, research the problem, generate possible solutions, select the best solution, create a model, test the model, refine and retest the model, and communicate the final solution.
Quality control	A set of checks intended to ensure that a product will meet the specified customer requirements once it has been manufactured. These procedures are followed before work is complete, as opposed to afterwards.
Working tolerance	The amount by which a measurement can vary without affecting the ability of the product to be manufactured accurately.
Assembly	Putting together. The assembling of components is a crucial step in the manufacturing process.
Disassembly	Taking a product apart to see the components, fixings and parts used to make it.
Optimise	A process to make something as close to perfect as possible.

Need to Know Dictionary: Art



Word	Definition
Line	A line is a mark made on a surface that joins different points
Shape	A shape is a two-dimensional area. Shapes have height and width but not depth. A shape might be defined by an outline or through contrast with its surroundings, such as through colour or tone.
Form	Form refers to three dimensional objects. While shapes have two dimensions (height and width), forms have three dimensions (height, width and depth).
Tone	Tone means how light or dark something is. The tones artists and designers use and the contrast between them can create very different moods and visual effects.
Composition	Composition is the arrangement of different elements within an artwork or design.
Response	As well as selecting the stimuli, you need to make a personal response. There are many different ways to respond to stimuli: <ul style="list-style-type: none"> ● Make a list or a spidergram to explore all possibilities. ● Doodle some initial ideas in your sketchbook. ● Make a collage of images in your sketchbook. ● Copy an artist's work to explore their technique so that you can then apply it to your own ideas. ● Take photos as a record to work from later. ● Make a collection of inspirational artists' work. ● Make drawings using different techniques.
Refine	Refinement is the improvement of the idea. It does not involve radical changes, but is about making small changes which improve the idea in some way.
Develop	Development is about selecting ideas, visual elements, compositions and techniques from the initial work and using them in new ways.
Annotate (verb)	To annotate means writing key information alongside your work. It can help to record your thoughts, keep your development on track and let others know what you have done and why.
Explore	To look at (something) in a careful way to learn more about it; to study or analyse (something).

Need to Know Dictionary: Drama

Word	Definition
Intention	A consideration of the effect you hope to have on the audience.
Dynamics	The energetic range of or variations within physical movement or the difference between levels of sound.
Projection	Voice projection is the strength of speaking or singing whereby the voice is used powerfully and clearly.
Inflection	Change in pitch or loudness of the voice.
Spatial Awareness	Spatial awareness is a well-thought-out awareness of things in the space around us, including the awareness of our body's position in space.
Movement Memory	The body gets used to doing a movement after it has done it any number of times. This helps the mind adapt so that it has to think less in order to perform that function.
Articulation	The ability to make every sound and consonant clear, so that individual letters are not lost within words and they are sounded correctly.
Semiotics	The process of interpreting the sign and symbols on stage or screen.
Commitment	Commitment means learning your lines, showing up on time, sharing generously your work with your cast members, doing your character homework and treating yours and cast members' work seriously.
Phrasing	The inclusion of pauses and how an actor chooses to break up or emphasise certain words or phrases.



Need to Know Dictionary: Music

Word	Definition
Self-discipline	The ability or will-power to work to improve on whatever it is you are doing.
Development	In music, development is a process by which a musical idea is communicated in the course of a composition.
Composition	Making up your own music is called composition.
Performance	Performance is when all the elements of musical preparation come together to be played for an audience.
Melody	A melody is a linear sequence of notes. It is a combination of pitch and rhythm.
Accompaniment	The musical part which provides the rhythmic and/or harmonic support for the melody or main themes of a song or instrumental piece.
Attack and decay	Attack refers to the beginning build-up of a note. Decay refers to how long sounds remain at their peak loudness until they start to disappear.
Elements	Some of the most important elements of music are dynamics, tempo, pitch, timbre, duration, texture, melody and structure. These elements help us both to describe the music that we hear and to create contrast in our music so that it sounds interesting.
Equipment	The necessary items or objects for a particular musical purpose.
Portfolio	This organises your educational background in music, work experience, performances, and potential.

Need to Know Dictionary: Sports Studies

Word	Definition
Citizenship	An effective citizenship can be defined as someone who gives back or contributes in a meaningful way to their community. This could be someone who volunteers for causes they care about, teaching, coaching or being involved in their community.
Etiquette	Sport has unwritten rules or customs – etiquette – to uphold respect and fairness. These help people to play in the 'spirit of the game'. They often require players to take an active approach to respect and fairness, not just avoid breaking the rules.
Gamesmanship	Without breaking them, players may bend the rules and use questionable methods to gain an advantage.
Infrastructure	Sports infrastructure, such as stadiums, sports halls, swimming pools, fitness facilities, ski resorts, golf courses and other sports infrastructure.
Initiative	An initiative empowers clubs to create opportunities that bring people together and change lives for the better. It is also the ability to assess and initiate things independently.
Inclusion	Making sure that everyone can take part.
Investment	The action or process of investing money for profit.
Legacy	This refers to the planned and unplanned, positive and negative, intangible and tangible effects that are created through an event.
Reputation	Reputation is a concept by which a sports organisation, club or individual tries to create a positive image of itself.
Sportsmanship	Sportsmanship means playing within the rules and understanding and using sports etiquette. It is playing fairly in the spirit of the game, showing respect and fair play to opponents and graciousness in both victory and defeat.

Need to Know Dictionary: Religious Studies



Word	Definition
Deterrence	Punishment intended to put people off committing crime.
Ensoulment	In Islam, the point at which an unborn child is given a soul.
Haram	An Arabic term used in Islam to mean forbidden.
Iman	The term 'imam' means 'in the front' and this person simply leads the prayers – they are no better than anyone else as everyone is equal in the eyes of Allah. Often, an imam will teach Arabic and they act as the khatib – the person to preach the Friday sermon.
Pacifism	A Pacifist is someone who is completely opposed to any kind of violence and will not participate in any aspect of war.
Procreate/procreation	To produce/the production of offspring by means of sexual reproduction.
Reformation	This was the process which led many to split from the Catholic Church in the 16th century.
Adultery	Sexual intercourse between a married person and another person who is not their spouse.
Annulment	The ending of a marriage which is not working out, as long as the couple can meet certain criteria. An alternative to divorce.
Euthanasia	The deliberate ending of someone's life for compassionate reasons.

Need to Know Dictionary: Hospitality and Catering

Word	Definition
Macronutrients	Macronutrients are nutrients that are needed in large amounts by the body – protein, fat and carbohydrate.
Micronutrients	Micronutrients are vitamins and minerals needed by the body in small amounts.
Nutritional	The nutritional content of food is all the substances that are in it which help you to remain healthy.
Unsatisfactory	Not satisfactory; not good enough; below acceptable standard.
Compare	Estimate, measure, or note the similarity or dissimilarity between.
Analyse	Examine (something) methodically and in detail, typically in order to explain and interpret it.
In-depth	Comprehensive, thorough or detailed.
Explain	Make (an idea or situation) clear to someone by describing it in more detail, giving instruction or stating facts.
Credible	Able to be believed; convincing.
Complex	Complex carbohydrates (also known as starch) are formed of long chains of sugars joined together. They are found in foods like bread, rice, pasta and potatoes.

Need to Know Dictionary: Creative iMedia



Word	Definition
Justify	Questions that ask you to 'justify' go a step beyond analyse and discuss. They often ask respondents to consider either one or two options and then recommend a course of action to take.
Strengths	Characteristics that give an advantage over others.
Weaknesses	Characteristics that are disadvantageous relative to others.
Suitability	Appropriate to a purpose or an occasion.
Client brief	The client brief, written by a client, explains the ins and outs of a project to the agency who'll be working on it.
Visualisation diagram	A visualisation diagram shows in a visual way what something might look like.
Pre-production documents	Pre-production is about planning the production of your media product. If done well, it makes the production process quicker and easier, and creates a better product. These include: mood boards, mind maps, visualisation diagrams, storyboards and scripts.
Storyboards	●A storyboard is an essential planning device used by most directors in the film and television industry. ●It allows directors to think in advance about how they want the narrative to develop and consider the technical and audio codes they will use to convey it. ●Preparing a storyboard helps you think through the moving image in your head and then capture it on paper with camera shots, angles, and transitions all documented. ●A well-constructed and thought out storyboard saves a lot of time when it comes to filming a moving image text.
Scripts	●A script is a document that outlines every aural (speaking), visual (what you can see) behavioural (body language), and lingual element required to tell a story. ●The script is only used as an outline as it will be interpreted by many different professions such as the director, cast, editor, and production crew. ●Scripts are written in the present tense, as if everything is happening in real time.
Target audience	A particular group at which a product such as a film or advertisement is aimed.

Need to Know Dictionary: Health and Social Care

Word	Definition
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	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.

Need to Know Dictionary: Business Studies



Word	Definition
Fixed costs	Fixed costs are costs that do not change with the level of production, such as rent.
Variable costs	Costs that change with output, such as raw materials.
Sales revenue	This is the total value of the goods sold to customers.
Break even	When a business has sold enough products to cover all costs.
Profit	A level of output above the break-even point will mean the business is making a profit.
Product life cycle	The theory that a product moves through different stages: introduction, growth, maturity, and decline.
Extension strategies	Developing new products is expensive and takes time, so businesses will usually try to extend the life cycle of a product and prevent it from going into decline. To do this, they need to find ways of keeping people interested in the product for longer, thereby increasing the number of sales.
Product differentiation	Making a product stand out from its competitors.
External factors	Businesses operate in an ever changing world. External factors are things outside a business that will have an impact on its success. Their impact can be positive or negative. A business cannot control external factors. All it can do is react to them and make decisions to help it remain successful. The acronym PESTEC is used to help remember the different types of external factors.
Unique Selling Point (USP)	The distinctive factors that make a product or brand stand out from rivals.

Need to Know Dictionary: Child Development

Word	Definition
Antenatal	Before birth; during or relating to pregnancy.
APGAR Score	A measure of the physical condition of a new-born infant. It is obtained by adding points (2, 1, or 0) for heart rate, respiratory effort, muscle tone, response to stimulation, and skin coloration; a score of ten represents the best possible condition.
Immunity	If you have a high enough antibody level to protect you against a particular infection, you are immune.
Incubator	an enclosed apparatus in which premature or unusually small babies are placed and which provides a controlled and protective environment for their care.
Miscarriage	The spontaneous or unplanned expulsion of a foetus from the womb before it is able to survive independently.
Obstetrician	A doctor with special training in how to care for pregnant women and help in the birth of babies
Ovulation	The release of an egg from an ovary during the menstrual cycle.
Paediatrician	A medical practitioner who specialises in the branch of medical science concerned with children and their diseases.
Pre-eclampsia	Preeclampsia is a pregnancy complication characterised by high blood pressure and signs of damage to another organ system, most often the liver and kidneys. Preeclampsia usually begins after 20 weeks of pregnancy in women whose blood pressure had been normal.