

KNOWLEDGE ORGANISER

YEAR 9 – TERM 2



Think Like An
Environmentalist

Community, Collaboration and Challenge

ATTENDANCE MATTERS



EVERY DAY COUNTS

Missing just 1 day every 2 weeks is the same as missing 10% of the school year.

LEARNING

Being in school allows you the best opportunity to learn.



WELLBEING

Attending school supports your mental and emotional health.

FUTURE SUCCESS

Regular attendance at school is vital for building the key skills needed for future employment



EQUIPMENT



School Bag



Knowledge Organiser



Black and Green Pens



Pencil case



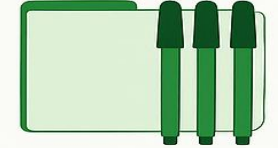
Calculator



Pencil



Rubber



Whiteboard and whiteboard pen



Highlighters



Ruler

SCHOOL DAY

9:00–9:05

AM Reg

9:05–10:20

Lesson 1

10:20–11:35

Lesson 2

11:35–12:05

Break 1

12:05–13:20

Lesson 3

13:20–13:50

Break 2

13:50–15:05

Lesson 4

15:05–15:30

PM Reg – assembly or guided reading

Multiplication Grid

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

PERIODIC TABLE OF ELEMENTS

Chemical Group Block



1																	18															
1	1.0080															2	4.00260															
1	H Hydrogen Nonmetal															2	He Helium Noble Gas															
2	3	7.0	4	9.012183	Atomic Number										17	35.45	Atomic Mass, u															
2	Li Lithium Alkali Metal	Be Beryllium Alkaline Earth Me...	Name										Cl Chlorine Halogen	Symbol																		
3	11	22.989...	12	24.305	Chemical Group Block										13	10.81	14	12.011	15	14.007	16	15.999	17	18.9984...	10	20.180						
3	Na Sodium Alkali Metal	Mg Magnesium Alkaline Earth Me...	5	26.981538	6	27.976927	7	28.085528	8	28.085528	9	30.973762	10	31.972071	11	32.06	12	35.45	13	39.9	14	69.723	15	72.63	16	74.92159	17	78.97	18	79.90	36	83.80
4	K Potassium Alkali Metal	Ca Calcium Alkaline Earth Me...	Sc Scandium Transition Metal	Ti Titanium Transition Metal	V Vanadium Transition Metal	Cr Chromium Transition Metal	Mn Manganese Transition Metal	Fe Iron Transition Metal	Co Cobalt Transition Metal	Ni Nickel Transition Metal	Cu Copper Transition Metal	Zn Zinc Transition Metal	Ga Gallium Post-Transition M...	Ge Germanium Metalloid	As Arsenic Metalloid	Se Selenium Nonmetal	Br Bromine Halogen	Kr Krypton Noble Gas														
5	Rb Rubidium Alkali Metal	Sr Strontium Alkaline Earth Me...	Y Yttrium Transition Metal	Zr Zirconium Transition Metal	Nb Niobium Transition Metal	Mo Molybdenum Transition Metal	Tc Technetium Transition Metal	Ru Ruthenium Transition Metal	Rh Rhodium Transition Metal	Pd Palladium Transition Metal	Ag Silver Transition Metal	Cd Cadmium Transition Metal	In Indium Post-Transition M...	Sn Tin Post-Transition M...	Sb Antimony Metalloid	Te Tellurium Metalloid	I Iodine Halogen	Xe Xenon Noble Gas														
6	Cs Cesium Alkali Metal	Ba Barium Alkaline Earth Me...	Hf Hafnium Transition Metal	Ta Tantalum Transition Metal	W Tungsten Transition Metal	Re Rhenium Transition Metal	Os Osmium Transition Metal	Ir Iridium Transition Metal	Pt Platinum Transition Metal	Au Gold Transition Metal	Hg Mercury Transition Metal	Tl Thallium Post-Transition M...	Pb Lead Post-Transition M...	Bi Bismuth Post-Transition M...	Po Polonium Metalloid	At Astatine Halogen	Rn Radon Noble Gas															
7	Fr Francium Alkali Metal	Ra Radium Alkaline Earth Me...	Rf Rutherfordium Transition Metal	Db Dubnium Transition Metal	Sg Seaborgium Transition Metal	Bh Bohrium Transition Metal	Hs Hassium Transition Metal	Mt Meitnerium Transition Metal	Ds Darmstadtium Transition Metal	Rg Roentgenium Transition Metal	Cn Copernicium Transition Metal	Nh Nihonium Post-Transition M...	Fl Flerovium Post-Transition M...	Mc Moscovium Post-Transition M...	Lv Livermorium Post-Transition M...	Ts Tennessine Halogen	Og Oganesson Noble Gas															
	57	138.9055	58	140.116	59	140.90...	60	144.24	61	144.91...	62	150.4	63	151.964	64	157.2	65	158.92...	66	162.500	67	164.93...	68	167.26	69	168.93...	70	173.05	71	174.9668		
	La Lanthanum Lanthanide	Ce Cerium Lanthanide	Pr Praseodymium Lanthanide	Nd Neodymium Lanthanide	Pm Promethium Lanthanide	Sm Samarium Lanthanide	Eu Europium Lanthanide	Gd Gadolinium Lanthanide	Tb Terbium Lanthanide	Dy Dysprosium Lanthanide	Ho Holmium Lanthanide	Er Erbium Lanthanide	Tm Thulium Lanthanide	Yb Ytterbium Lanthanide	Lu Lutetium Lanthanide																	
	89	227.02...	90	232.038	91	231.03...	92	238.0289	93	237.04...	94	244.06...	95	243.06...	96	247.07...	97	247.07...	98	251.07...	99	252.0830	100	257.0...	101	258.0...	102	259.1...	103	266.1...		
	Ac Actinium Actinide	Th Thorium Actinide	Pa Protactinium Actinide	U Uranium Actinide	Np Neptunium Actinide	Pu Plutonium Actinide	Am Americium Actinide	Cm Curium Actinide	Bk Berkelium Actinide	Cf Californium Actinide	Es Einsteinium Actinide	Fm Fermium Actinide	Md Mendelevium Actinide	No Nobelium Actinide	Lr Lawrencium Actinide																	

01 Adjectives

THAT DESCRIBE:
age: young, old
colour: red, blue
condition: new, used
size: large, medium
speed: fast, slow
etc.

COMPARATIVE:
 smaller, better...

SUPERLATIVE:
 the smallest,
 the worst,
 the best...

08 Verbs

ACTION:
 to run, to organise,
 to read, to think...
 > Transitive
 or
 > Intransitive

LINKING:
 to be,
 to look, to appear,
 to seem, to smell...

**HELPING
 (= AUXILIARY):**
 can, may,
 will, must,
 should, to be,
 to have...

07 Pronouns

PERSONAL (subject):
 I, you, he, she, it,
 we,
 you, they

PERSONAL (object):
 me, you, him, her,
 it, us, you, them

PERSONAL (reflexive):
 myself, yourself,
 himself, herself,
 itself, ourselves,
 yourselves,
 themselves

DEMONSTRATIVE:
 this, these,
 that, those

POSSESSIVE:
 mine, yours, his,
 hers, its, ours,
 yours, theirs

INTERROGATIVE:
 how, where,
 when, which...?

INDEFINITE:
 somebody,
 anyone...

RELATIVE:
 that, which,
 whose, whom...

06 Prepositions

PLACE / DIRECTION:
 in, at, on,
 under, above,
 across,
 among,
 between...

TIME:
 in, at, on,
 over, until, about,
 during, before,
 after, while,
 through...

**OTHER (agent,
 phrase...):**
 by, with, on, over,
 to, up, within,
 beyond, for...

05 Nouns

COMMON NOUNS: house, dog, laptop...

PROPER NOUNS:
 (Capitalised)
 London, Paris,
 James, William,
 Julia, Jennifer...

> **VERBAL:** swimming...

> **COLLECTIVE:** choir, jury...

> **COMPOUND:** mother-in-law...

> **COUNTABLE:** book, day...

> **UNCOUNTABLE:** traffic, calm...

> **ABSTRACT V. CONCRETE:** wit vs. road...

02 Adverbs

PLACE:
 here, there,
 outside, everywhere,
 upstairs, nowhere,
 somewhere....

TIME:
 ago, before, since,
 yet, for, still,
 afterwards...

FREQUENCY:
 often, never,
 sometimes, always

MANNER:
 just, quite,
 quickly, hardly,
 well, carefully,
 barely, almost,
 scarcely,
 beautifully...

03 Conjunctions

COORDINATING:
 and, or, but,
 yet, nor, for, so

CORRELATIVE:
 both... and...,
 either... or...,
 just as... so...,
 whether... or...,
 neither... nor...,
 not only... but also...

SUBORDINATING:
 after, since, if,
 while, although,
 before, because,
 unless

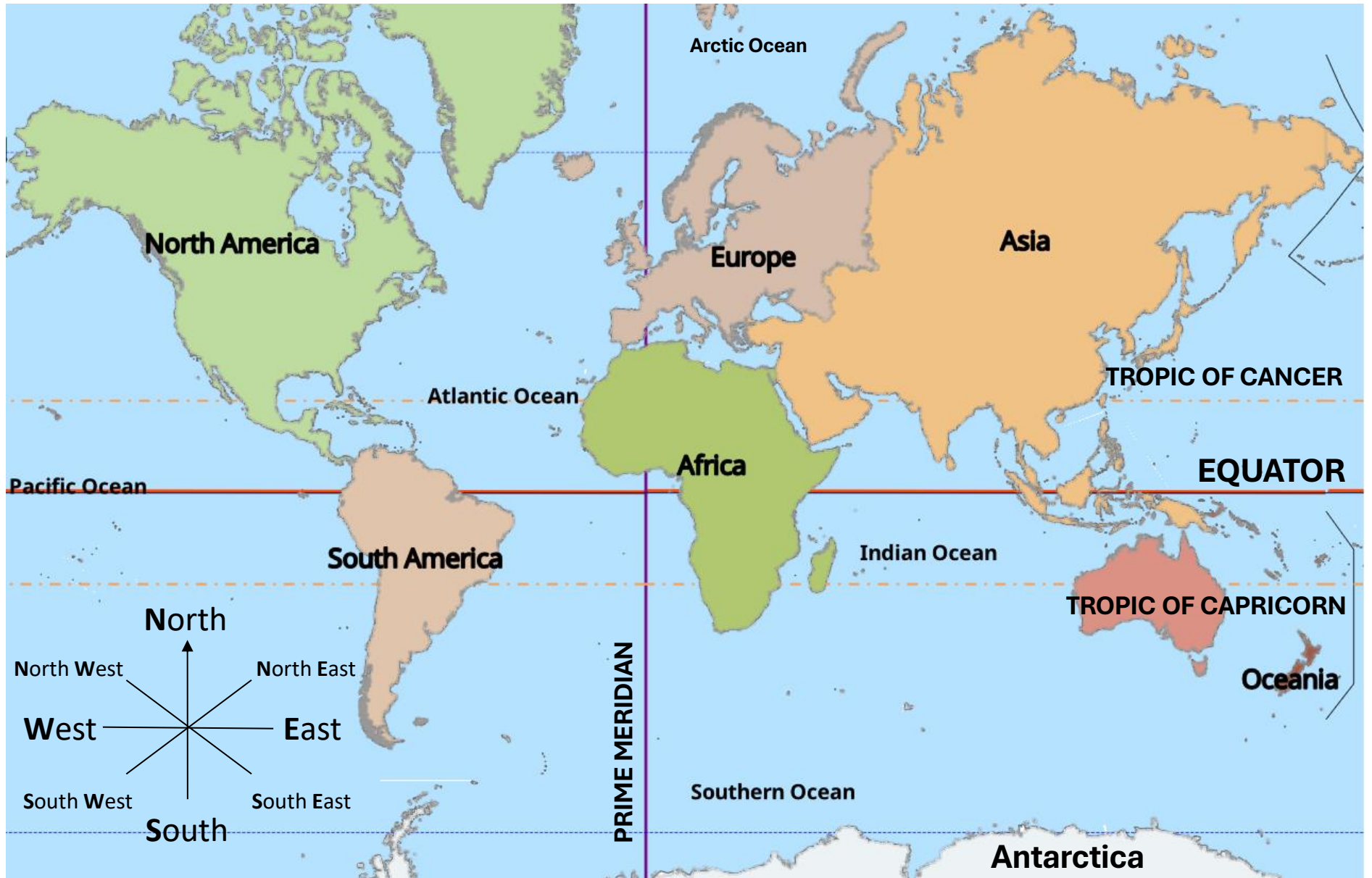
04 Determiners

TELLS US WHICH:
 each, every,
 some, none,
 all...

TELLS US WHOSE:
 my, your, her, his, its,
 our, your, their (= possessive
 adjectives or determiners)



World Map



Year 9 Mixed Media Portraits

Art

Term 2

Unit Title: Mixed Media Portraits

Focus: Observational drawing, experimentation, media layering, creative expression through portraiture

- Develop techniques through experimentation
- Use a range of materials purposefully
- Improve mastery of drawing, painting, collage, and mixed media
- Suggested Artists: **Wangechi Mutu, Kehinde Wiley, Frida Kahlo, Vik Muniz, Loui Jover**
- Teesha Moore, Tim Marrs, Hannah Hoech

Media Exploration: Collage and Texture

- Objective: Experiment with collage techniques
- Activities:
 - Use found materials to build backgrounds or textures
 - Try torn paper, magazine collage, patterned materials
- Sketchbook Task: Create a collage portrait experiment



Media Exploration: Paint and Ink

Objective: Layer paint/ink over collage or drawing

Activities: Test layering of acrylic, watercolor, or ink. Explore wash techniques, resist, spatter

Task: Create a test portrait section using paint + collage



Media Exploration: Stitching / Thread

- Objective: Add tactile elements and stitching
- Activities:
 - Try hand-stitching paper, adding fabric or textured papers
 - Mixed media surface building
- Extension: Students experiment in sketchbooks or create mini sample portraits



Objective: Plan final piece

- Activities:
 - Thumbnail sketches of layout
 - Decide on media combinations
 - Annotate process and influences
 - Homework: Finalize portrait reference (photo/mirror/digital)

Begin final mixed media portrait

- Draw basic layout/composition
- Begin applying initial layers (collage/paint/texture)



Final Touches and Evaluation

- Objective: Finish portrait and self-assess
- Activities:
 - Add final detail, highlights, and textures
 - Peer assessment and gallery walk



Computing

Programming: Basics

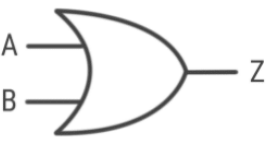
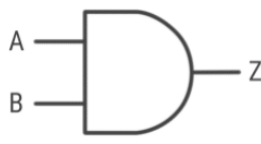
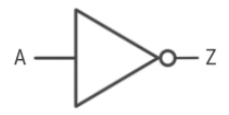
A	Key Vocab
Debugging	Finding and fixing errors in code
Execution	When a command or program is run by the processor
Operation	A mathematical process which takes one or two inputs and produces one output
Programming Language	A set of instructions and syntax which can be used to make programs
Script	A small simple program, particularly run on command line interfaces
Sequence	The order in which a list of instructions is carried out
B	Syntax
Comment	A part of a program which is ignored by the computer but can be read by the programmer
Indentation	A stylistic approach for writing code. The contents of loops or selection are set a few spaces in from the previous indentation
Syntax	Rules for the structure of a programming language
C	Variables and Constants - Initialisation
Assign	Give a value to a variable or constant at the beginning of a program
Data Type	The nature of information used by a computer
Declare	Set up a <i>variable</i> by naming it and allocating memory to it
Initialise	<i>Declare</i> variables and <i>assign</i> values at the beginning of a program

D	Variables and Constants - Types
Variable	A named value which can be changed as the program is running
Constant	A label that refers to a location in memory containing a fixed value
Global	A <i>variable</i> which is used throughout the program
Local	A <i>variable</i> which is defined and used only within a sub program
E	Sub Programs
Sub program	Any section of the program which might be <i>called</i> by the main program and is self-contained
Argument	Data supplied to a <i>function</i> or <i>procedure</i> when it is <i>called</i>
Breakpoint	The part of a subprogram where it stops and returns to the main program or where the main program stops completely
Call	An instruction to run a sub program
Function	A <i>sub program</i> which can take any amount of <i>arguments</i> and <i>return</i> a value
Parameter	A <i>variable</i> which is defined within a <i>sub program</i> and which the <i>sub program</i> needs to run
Procedure	A <i>sub program</i> which can take arguments but which does not return a value
Return	To give back a value from a sub program to the main program

Computing

Programming: Operations

A		Key vocab	
Operand		A number (or string or Boolean) which is to be operated on	
String manipulation		Operating on strings	
B		Unfamiliar operations	
Concatenation	Joins two strings together	“.” + “-”	
Exponentiation	Raises one number to the power of another	2**3	
Modulus / mod	Returns the remainder after division	10 % 3 = 1	
Quotient / floor division	Returns the whole number part of the division	10 // 3 = 3	
Unary	Only has one operand	-7	
C		Types of operator	
Arithmetic operator	An operator which turns two numbers into a single number with a mathematical process	** , / , % , // , * , + , -	
Assignment operator	An operator which assigns a value to a name	= , =>	
Boolean operator	An operator which compares Boolean values	AND , OR , NOT	
Comparison operator	An operator which compares two numbers	> , < , >= , <= , == , !=	
D		Order of operations	
1 Brackets		Whatever is in the brackets is resolved first	
2 Unary		An operation with only one <i>operand</i>	
3 Indices		Raising to the power of a number	
4 Division		Including <i>quotient</i> and <i>modulus</i> division	
5 Multiplication		× or *	
6 Addition		+	
7 Subtraction		-	
8 Comparison		An operation which returns a Boolean by comparing two operands	
9 Boolean		An operation which returns a Boolean by comparing two Booleans	
10 Assignment		An operation which assigns a value to a name	
E		Logic vocab	
Boolean algebra		Mathematical expression of logic circuits	
Logic gate		A component which takes in one or two binary inputs and produces a single binary output	
Logic circuit		A circuit made of a combination of logic gates	
Truth table		A table of inputs and outputs for a logic gate system	
F		Logic gates	

OR gate		<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	A	B	Z	0	0	0	0	1	1	1	0	1	1	1	1	AND gate		<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	A	B	Z	0	0	0	0	1	0	1	0	0	1	1	1	NOT gate		<table border="1"> <thead> <tr> <th>A</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> </tr> </tbody> </table>	A	Z	0	1	1	0
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Drama

Year 9

Drama

Term 2

Analysis Structure

What? (e.g. *The actor playing Tom marched downstage*)

Why? (e.g. *To show that they were angry*)

How? (e.g. *They used a straight posture and stomped their feet, with an angry facial expression.*)

Successful? (*This successfully showed their anger*)

Vocal and Physical Skills



Vocal

Accent
Pitch
Pace
Pause
Diction
Power



Physical

Posture
Facial Expression
Tension
Gait
Gesture
Eye Contact

Stage Positions

Upstage Right	Upstage	Upstage Left
Stage Right	Centre Stage	Stage Left
Downstage Right	Downstage	Downstage Left

Lighting Design Terminology

Light positions:

Front Light
Back Light
Side Light
Up Light
Top Light

Gel – changes light colour

Blackout – no light at all

Crossfade – move from one lighting state to another

Fixture – a theatre light

Warm wash – full stage coverage of light in a warm colour (orange, yellow etc.)

Cold wash – full stage coverage of light in cold colour (pale blue).

Spotlight – a single light focused on a particular person or part of the stage.

Set Design Terminology

Staging type: end-on, traverse, thrust, proscenium arch, in-the-round, promenade.

Naturalistic or non-naturalistic

Stage Flat - a wooden structure to make walls

Rostrum - a raised platform

Painted Backdrop - a decorated back cloth

Cyclorama - a white backdrop that can be lit or projected onto

Static set - cannot be moved or changed

Flexible set - can change location

Fly rail - bars in the ceiling for hanging items

Stage Furniture - large items on the stage (e.g. table)

Set dressing - small items to decorate the set

Theatre Evaluation

Definition of 'Gothic' writing: *"Tales of the macabre, fantastic, and supernatural, usually set amid haunted castles, graveyards, ruins, and wild picturesque landscapes."*

The term 'Gothic' was first coined in 1764 by English author Horace Walpole in his novel, *The Castle of Otranto*, which he subtitled 'A Gothic Story'. The novel was set in a haunted castle where the protagonist is plagued by supernatural occurrences. Walpole used the word 'Gothic' because it refers to medieval buildings like castles and churches, where a lot of Gothic fiction is set.

Gothic Literature became immensely popular in England and Germany during the 18th and 19th century, with many other genres borrowing its conventions.

Gothic fiction is all about creating suspense.

Key Themes of Gothic Fiction

Fear

Isolation and loneliness

Madness and the unknown

Suspense and mystery

The supernatural and the uncanny

Good vs Evil

Uncertainty

Key Features of Gothic Fiction

- Dark, mysterious and eerie settings (e.g. castles, graveyards, forests)
- Gloomy, decayed and ruined environments
- Supernatural elements and unexplained events
- Villains, victims, and haunted characters
- Themes of fear, madness, isolation, and death
- Symbols like fog, shadows, blood, and mirrors
- Volatile and threatening weather (symbolism)



Top Tips for Gothic Writing:

- Use 'show not tell' to build suspense
- Vary sentence lengths for dramatic effect
- Use paragraph breaks to control pacing
- Avoid clichés – make your story original
- Think about how your character changes emotionally

Structure and planning tips:

- Setting – Where is it? What makes it unsettling?
- Character – Who is your protagonist? What are they afraid of?
- Conflict – What goes wrong? Is there a mystery or threat?
- Climax – What is the most intense moment?
- Ending – Is it resolved or left ambiguous?

Sentence Starters

- The night was silent, except for...
- No one had entered the house in years...
- She felt a chill crawl down her spine...
- Something wasn't right. He could feel it...
- The shadows seemed to whisper...

Techniques common in Gothic Writing:

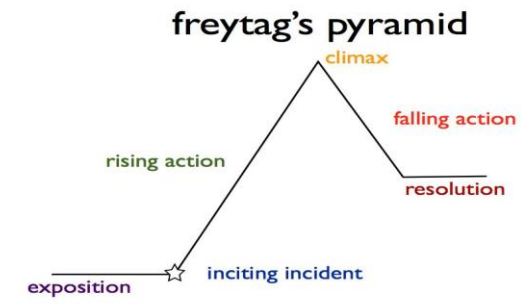
- Simile – 'The wind howled like a dying wolf.'
- Pathetic Fallacy – 'The sullen wind was soon awake'
- Personification – 'The house groaned in the silence.'
- Sensory Description – 'The stench of decay filled the air.'
- Short Sentences – 'It opened.'
- Repetition – 'Stranger, stranger, stranger'
- Motif – a recurring idea e.g. referring to candles throughout.
- Interrogative sentence – a question 'Where are they?'



English



Basic features	Definition
Capital Letters	These must be at the starts of names, starts of sentences and use the pronoun 'I'.
Full stops	Unless using another piece of punctuation, these need to be at the end of sentences.
Question marks	Instead of a full stop denoting a question. E.g. When do you use a question mark?
Commas	Used to separate items in a list or a dependent clause from an independent clause. E.g. If I had to choose, I like blue, red and green.
Apostrophes	Indicating a contraction or possessive. E.g. The pie wasn't Peter's to eat.
Consistent tense	The tense you begin writing in should usually stay the same throughout your writing.
Paragraphs	A break in writing indicates the topic, person, place, time or focus of your writing has changed.
Homophone spellings	Easily mistaken spellings like there, their and they're; to, too and two or your and you're.
Semi-colons	A punctuation mark that can separate two independent clauses instead of a conjunction or full stop.
Colon	Colon can separate an independent clause and a dependent clause or start a list.
Simple, compound and complex sentences	Use a variety of these to make writing interesting. Simple sentences are just an independent clause. Compound sentences are two independent clauses usually joined with a conjunction and a complex sentence is an independent and dependent clause.



Language Devices	Definition
Simile	A comparison using the words 'like' or 'as'.
Metaphor	A comparison that represent one thing as being the other.
Personification	When an object is represented as being human.
Onomatopoeia	Words that sound like a sound.
Alliteration	Two or more words starting with the same letter.
Imagery	A vivid, easy to imagine description.
Symbolism	When one thing is standing in the place of another.
Oxymoron	When two things are put together but are impossible.
Juxtaposition	When two opposing ideas or themes are used near each other.
Pathetic Fallacy	When nature creates a mood in a story.

Module 1 - La rentrée

Point de départ			
Bonjour Hello	(Comment) ça va? How are you?	Ça va (très) bien I'm (very) well	Au revoir! Goodbye
Salut! Hi!		Pas mal, merci Not bad, thank you	À plus! See you later
		Ça ne va pas! Not good!	

Voici ma salle de classe

Qu'est-ce qu'il y a sur la photo? What is on the photo?	Sur la photo In the photo Au fond- at the front Au centre- in the centre À gauche- on the left À droite- on the right	il y a there is/are	un tableau (noir/blanc) a (black/white) board un poster - poster un/une prof(esseur) - a teacher un écran - screen un ordinateur - a computer une porte - a door une fenêtre - a window une tablette - a tablet des tables - some tables des chaises - some chairs des élèves - some pupils	c'est it is	sympa - nice génial - great moderne - modern triste - sad nul - rubbish démodé - old fashioned
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As-tu des frères ou des soeurs?	Oui, j'ai.. Yes I have..	un (demi) -frère a (half) brother une (demi) - soeur a (half) sister
As-tu des frères ou des soeurs? Do you have brothers or sisters?	Non je n'ai pas de frères ou de soeurs I don't have any brothers or sisters	
	Je suis fils/fille unique I'm an only child	

Tu es comment?

Je suis - I am Je ne suis pas - I'm not	amusant (e) - funny arrogant (e) - arrogant bavard (e) - chatty fort (e) - strong grand (e) - big/tall intelligent (e) - intelligent méchant (e) - nasty patient (e) - patient petit (e) - small/short timide - shy
Il est - he is Elle est - she is	

Qu'est-ce que tu fais?

Ma vie, c'est... My life is...	chanter - to sing danser - to dance retrouver mes amis - to meet up with friends bloguer - to blog surfer - to surf tchatter - the chat rigoler - to have a laugh étudier - to study nager - to swim jouer - to play gagner - to win
Pour moi, la rentrée c'est... For me, going back to school is....	

Module 1 - La rentrée

Mon interview par vidéo

C'est quand, ton anniversaire ? When is your birthday?	mon anniversaire c'est le... my birthday is the	premier - 1 st 2,3,4,5 etc	janvier février mars avril mai juin	juillet août septembre octobre novembre décembre
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Les numéros

1 un/une
2 deux
3 trois
4 quatre
5 cinq
6 six
7 sept
8 huit
9 neuf
10 dix
11 onze
12 douze
13 treize
14 quatorze
15 quinze
16 seize
17 dix-sept (10+7)
18 dix-huit (10+8)
19 dix-neuf
20 vingt
30 trente
40 quarante
50 cinquante
60 soixante
70 soixante-dix (60+10)
71 soixante et onze (60+11)
80 quatre-vingts (4 x 20)
90 quatre-vingts-dix (4x20)+10
100 cent

Tu aimes ça?

Tu aimes...? Do you like?	J'aime - I like	le sport - sport le foot - football le vélo - cycling le collège - school le poisson - fish
	Je n'aime pas - I don't like	la danse - dance la musique - music
	Je préfère - I prefer	les serpents - snakes les pizzas - pizza les glaces - ice-creams les jeux vidéo - video games les vacances - holidays les BD - comics les mangas - manga les araignées - spiders

High Frequency Words

je	I
tu	you
il	he
elle	she
un/une	a
des	some
et	and
mais	but
aussi	also
assez	quite
très	very
trop	too much
un peu	a bit

Module 2 – En classe

Point de départ

ici- here			blanc(he) - white
en bas- at the bottom		un cercle a circle	bleu (e) - blue
au centre - in the centre	il y a there is, are	un demi-cercle a semi circle	gris (e) - grey
à droite - on the right		un triangle a triangle	jaune - yellow
à gauche - on the left			marron - brown
			noir (e) - black
			orange - orange
			rose - pink
			rouge - red
			vert (e) - green
			violet(te) - purple

Qu'est-ce que tu portes?

Qu'est-ce que tu portes? What do you wear?	Je porte I wear	l'uniforme scolaire school uniform	et c'est and it is...	chic smart	
	on porte we wear	un pantalon - trousers un polo - a polo shirt un pull - a jumper un sweat - a sweatshirt un tee-shirt - a T-shirt		mais, ce n'est pas but it's not...	confortable comfortable
		une chemise - a shirt une cravate - a tie une jupe - a skirt			démodé(e) old-fashioned
		des baskets - trainers des chaussettes - socks des chaussures - shoes		pratique practical	

Ta journée scolaire est comment?

Ta journée scolaire est comment? What is your school day like?	je quitte la maison - I leave the house j'arrive au collège - I arrive at school je retrouve mes copains - I meet my friends on commence les cours - we start lessons je mange à la cantine - I eat in the canteen je chante dans la chorale - I sing in the choir je joue dehors - I play outside on recommence les cours - we start lessons again à (quatre) heures - at (four) o'clock
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C'est comment, un collègue français?

Quel est ton jour préféré? What is your favourite day?	Mon jour préféré, c'est le.... My favourite day is....	lundi - Monday mardi - Tuesday mercredi - Wednesday jeudi - Thursday vendredi - Friday samedi - Saturday dimanche - Sunday
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Module 2 – En classe

Qu'est-ce que tu penses de tes matières?

Qu'est-ce que tu penses de tes matières? What do you think of your subjects?	J'aime I like	le français - French le théâtre - drama	parce que c'est because it is	facile- easy difficile- difficult intéressant - interesting ennuyeux - boring amusant - fun(ny) créatif - creative nul - rubbish
	J'adore I love	la géographie - geography la musique - music la technologie - technology		
	J'aime assez I quite like	l'anglais - English l'EPS - PE l'histoire - history l'informatique - ICT		
	Je n'aime pas I don't like	les arts plastiques - art les maths - maths les sciences - science		
Tu aimes? Do you like?	Je n'aime pas I don't like		car c'est because it is	le/la prof est sympa the teacher is kind le/la prof est trop stricte the teacher is too strict
	Je déteste I hate			j'ai trop de devoirs I have too much homework

Extra!

J'ai deux heures d'anglais	I have 2 hours of English
C'est ma matière préférée	It's my favourite subject
Je suis fort (e) en maths	I am good at maths
J'ai un emploi du temps	I have a timetable
Je n'aime pas la rentrée	I don't like the start of the new school year
Je préfère les vacances	I prefer the holidays.

Un collège super cool!

Le collège est... The school is..	grand - big petit - small de taille moyenne - medium sized
Il y a There is/are	500 élèves - 500 pupils un cinéma 3D - a 3D cinema une piscine - a swimming pool un court de tennis - a tennis court
Il n'y a pas de There is/are not	harcèlement - bullying toilettes sales - dirty toilets profs trop sévères - too strict teachers
Tu es d'accord?	Je (ne) suis (pas) d'accord - I (don't) agree

High Frequency Words

on	we
et	and
mais	but
parce que	because
très	very
vraiment	really
trop	too
d'abord	firstly
après	after

GRAMMAIRE

Regular present tense verbs

ER VERBS e.g. Passer = to spend (time)

Je passe	<i>I spend</i>
Tu passes	<i>You spend</i>
Il/Elle/On passe	<i>He/She/One spends</i>
Nous passons	<i>We spend</i>
Vous passez	<i>You spend (form/pl)</i>
Ils/Elles passent	<i>They spend</i>

IR VERBS e.g. Finir = finish

Je finis	<i>I finish</i>
Tu finis	<i>You finish</i>
Il/Elle/On finit	<i>He/She/One finishes</i>
Nous finissons	<i>We finish</i>
Vous finissez	<i>You finish (form/pl)</i>
Ils/Elles finissent	<i>They finish</i>

RE VERBS e.g. vendre = to sell

Je vends	<i>I sell</i>
Tu vends	<i>You sell</i>
Il/Elle/On vend	<i>He/She/One sells</i>
Nous vendons	<i>We sell</i>
Vous vendez	<i>You sell (form/pl)</i>
Ils/Elles vendent	<i>They sell</i>

GRAMMAIRE Irregular present tense verbs

Faire = to do / to make

Je fais	<i>I do</i>
Tu fais	<i>You do</i>
Il/Elle/On fait	<i>He/She/One does</i>
Nous faisons	<i>We do</i>
Vous faites	<i>You do (form/pl)</i>
Ils/Elles font	<i>They do</i>

Aller = to go

Je vais	<i>I go</i>
Tu vas	<i>You go</i>
Il/Elle/On va	<i>He/She/One goes</i>
Nous allons	<i>We go</i>
Vous allez	<i>You go (form/pl)</i>
Ils/Elles vont	<i>They go</i>

Vouloir = to want

Je veux	<i>I want</i>
Tu veux	<i>You want</i>
Il/Elle/On veut	<i>He/She/One wants</i>
Nous voulons	<i>We want</i>
Vous voulez	<i>You want (form/pl)</i>
Ils/Elles veulent	<i>They want</i>

Pouvoir = to be able to

Je peux	<i>I can</i>
Tu peux	<i>You can</i>
Il/Elle/On peut	<i>He/She/One can</i>
Nous pouvons	<i>We can</i>
Vous pouvez	<i>You can (form/pl)</i>
Ils/Elles peuvent	<i>They can</i>

GRAMMAIRE Modal verbs

Grammar

Aujourd'hui	<i>Today</i>
Demain (soir)	<i>Tomorrow (night)</i>
Ce matin / ce soir	<i>This morning/evening</i>
Cet après-midi	<i>This afternoon</i>
La semaine prochaine	<i>Next week</i>

★ **S'il fait beau**
If the weather's nice

★ **S'il fait mauvais**
If the weather's bad

★ **Si j'ai assez d'argent**
If I have enough money

Ça va être...
It's going to be

cool / génial / sympa
cool / great / nice

Qu'est-ce qu'on va faire? *What are we going to do?*

Near Future Tense = Aller + infinitive (going to do)

Je vais <i>I am going</i>	aller au parc	<i>to go to the park</i>
	visiter le musée	<i>to visit the museum</i>
On va / Nous allons <i>We are going</i>	manger au resto	<i>to eat at a restaurant</i>
	acheter un jeu vidéo	<i>to buy a videogame</i>
Use the present tense of the verb ALLER from above ↗	voir un spectacle	<i>to see a show</i>
	faire les magasins	<i>to go shopping</i>
	prendre le bus	<i>to take the bus</i>

Qu'est-ce que tu as fait le week-end dernier? <i>What did you do last weekend?</i>	J'ai / Nous avons... <i>I / We...</i>	...passé (le week-end) <i>...spent (the weekend)</i>	...participé à une compétition <i>...took part in a competition</i>	fait du vélo <i>...went cycling</i>
	...joué au tennis <i>...played tennis</i>	...fêté (mon anniv) ...celebrated <i>my birthday</i>	...regardé un match / film <i>...watched a match / a film</i>	fait de la natation <i>...went swimming</i>

Hier <i>Yesterday</i>
Avant-hier <i>The day before yesterday</i>
Le week-end dernier <i>Last weekend</i>
La semaine dernière <i>Last week</i>
Il y a deux semaines <i>Two weeks ago</i>
D'abord / Enfin <i>Firstly / Finally</i>
Ensuite / puis <i>Next / then</i>
Après <i>After</i>
Plus tard <i>Later</i>
★ Après avoir (mangé) <i>After having (eaten)</i>
★ Avant de (partir) <i>Before (leaving)</i>



The Past: The Perfect Tense with Avoir									
We use the perfect tense to say what <u>we did</u> or <u>have done</u> in the past. To form it you need 2 parts: PART 1: Avoir (the verb to have) + PART 2: Past participle (e.g. visited/done/eaten)									
PART 1: Avoir = To have		PART 2: The Past participle							
J'ai <i>I have</i>	+	ER verbs + é		IR verbs + i		RE verbs + u		Irregulars	
Tu as <i>You have</i>		visité	visited	fini	finished	perdu	lost	fait	did
Il / Elle/ On a <i>He / She has</i>		regardé	watched	vomi	vomited	attendu	waited	pris	took
Nous avons <i>We have</i>		écouté	listened	dormi	slept	vendu	sold	bu	drank
Vous avez <i>You all have</i>		mangé	ate /eaten					vu	saw
Ils / Elles ont <i>They have</i>		acheté	bought					lu	read

Je suis allé(e) ... <i>I went...</i>
Nous sommes allé(e) ... <i>I went...</i>
au parc / au stade <i>...to the parc / stadium</i>
à la piscine <i>...to the pool</i>
aux magasins <i>...to the shops</i>

The Past: The Perfect Tense with Être					
Some specific 'special' verbs take Être (To be) instead of Avoir...					
Être verbs agree with the subject! If it's feminine, add an 'e'. If it's plural, add an 's'					
PART 1: Être = To be		PART 2: The Past participle (+e) (+s)			
Je suis <i>I am</i>	+	allé(e)(s)	went	sorti(e)(s)	went out
Tu es <i>You are</i>		resté(e)(s)	stayed	parti(e)(s)	left
Il / Elle est <i>He/She is</i>		arrivé(e)(s)	arrived	venu(e)(s)	came
Nous sommes <i>We are</i>		retourné(e)(s)	returned	revenu(e)(s)	came back
Vous êtes <i>You lot are</i>		rentré(e)(s)	went back (home)	devenu(e)(s)	became
Ils / Elles sont <i>They are</i>					

Module 4 - Ma vie de famille

As-tu un animal?

As-tu un animal? Do you have a pet?	oui, j'ai un yes I have a	chat - cat chien- dog cochon d'Inde - Guinea pig hamster - hamster lapin - rabbit lézard - lizard oiseau - bird poisson - fish serpent - snake	il est he is elle est she is qui est who is	violet- purple blanc- white noir - black rose- point vert - green marron - brown bleu - blue gris - grey rouge - red jaune - yellow	
	non, je n'ai pas d'animal				
Quel âge as ton animal? How old is your pet?	Il a He is (literally 'he has') Elle a She is (literally 'she has')	un an - 1 year old deux ans - 2 years old trois ans - 3 years old	mais son âge humain est ... but it's human age is..	20 vingt 30 trente 40 quarante 50 cinquante 60 soixante 70 soixante-dix (60+10) 71 soixante et onze 80 quatre vingts 90 quatre-vingt-dix 100 cent	ans years old

Une drôle defamille

je suis I am	grincheux (-se) - grumpy studieux (-se) - studious
il est he is	marrant(e) - funny sévère - strict
elle est she is	maigre - thin furieux(-se) - furious

On fait la fête!

le 14 juillet la fête nationale un jour de congé un défilé (militaire) un bal regarder un feu d'artifice faire un pique-nique faire la fête	Bastille Day national holiday a day off (military) parade a dance to watch fireworks to have a picnic to celebrate
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Qu'est-ce que tu manges au petit déjeuner?

Qu'est-ce que tu manges / bois au petit déjeuner? What do you eat/drink for breakfast?	je mange I eat	un croissant - a croissant un fruit - a piece of fruit	du pain grille - toast du beurre - butter du bacon - bacon du yaourt - yoghurt	une tartine - bread with jam de la confiture - jam	des céréales - cereals des oeufs - eggs
	je bois I drink	du jus de fruits - fruit juice	du chocolat chaud - hot chocolate	du lait - milk	de l'eau - water
je ne mange rien - I don't eat anything					

Module 4 - Ma vie de famille

Décris ta famille

Dans ma famille il y a... In my family there is...	mon - my	(beau-) père (step) father grand-père grandfather (demi-) frère (half/step) brother fils - son	qui a who has qui ont who have	les yeux eyes	bleus - blue verts - green marron - brown	
	ma - my	(belle-) mère (step) mother grand-mère grandmother (demi-) soeur (half/step) sister fille - daughter		les cheveux hair	noirs - black blonds- blond roux- red gris - grey bruns - brown et (and)	courts - short longs - long mi-longs - mid length bouclés - curly raides - straight
	mes - my	parents		une barbe a beard tatouages freckles des taches de rousseur des tattoos		
			qui porte(nt) des lunettes - who wear(s) glasses qui s'appelle(nt).... - who is (are) called			

Les pièces

Dans ma maison il y a 3 pièces	In my house there are 3 rooms
il y a :	there is:
un salon	a living room
une cuisine	a kitchen
une chambre	a bedroom
une salle de bains	a bathroom
une sale à manger	a dining room
un jardin	a garden
nous	we
de dans à	of in in/at
du/de la/des/de l' (ne)...rien	some nothing

High Frequency Words

Où habites tu?

Où habites - tu? Where do you live?	j'habite I live	dans in	un appartement a flat un village a village une maison a house une ville a town	en in	Angleterre - England France - France Espagne - Spain Suisse - Switzerland Ecosse - Scotland Irlande - Ireland	J'aime habiter ici I like living here	parce que c'est / parce qu' c'est because it is	tranquille - quiet grand - big confortable - comfortable trop petit - too small il n'y a pas de place - there's no space
	nous habitons we live			au in	pays de Galles - Wales Portugal - Portugal	Je n'aime pas habiter ici I don't like living here		

Module 5 – En ville

Point de départ

Qu'est-ce qu'il y a dans ta ville/ton village? What is there is your town/village?	il y a there is/are	un - a	centre de loisirs - leisure centre centre commercial - shopping centre château - castle marché - market musée - museum
		une - a	mosquée - mosque patinoire - ice rink piscine - swimming pool
		des - some	magasins - shops
	il n'y a pas de - there is/are not		

Tu veux aller au café?

Tu veux aller au café Do you want to go to the café....	aujourd'hui ? - today? ce matin? - this morning? ce soir? - this evening? ce weekend? - this weekend?	Merci, bonne idée - Thanks, good idea Oui, je veux bien - Yes, I want to D'accord - OK Pourquoi pas? - Why not? Non merci - No thanks Désolé(e)! - Sorry! Je ne veux pas - I don't want to Tu rigoles! - You're joking!
Rendez-vous à quelle heure? What time will we meet?	Rendez-vous à 19h. - Let's meet at 7pm	

Où vas-tu le weekend?

Où vas tu le weekend? Where you do go at the weekend?	je vais I go	au	bowling - bowling alley cinéma/ciné - cinema parc - park stade - stadium	samedi matin / après-midi / soir Saturday morning / afternoon / evening
		à la	piscine - swimming pool plage - beach	
		à l'	église - church	
		aux	magasins - shops	

Qu'est-ce que tu vas faire?

Qu'est-ce que tu vas faire à Paris? What are you going to do in Paris?	Je vais I'm going to	visiter la cathédrale Notre Dame - visit Notre Dame Cathedral visiter la Tour Eiffel - visit the Eiffel Tower aller au musée du Louvre - go to the Louvre museum aller aux Catacombes - go to the Catacombs faire une balade en bateau-mouche - go on a boat trip prendre des photos - take some photos acheter des souvenirs - to buy souvenirs admirer la Joconde - admire the Mona Lisa faire un pique-nique - have a picnic
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Vous désirez?

Module 5 – En ville

<p>Vous désirez? What would you like?</p> <p>Pardon Monsieur/Madame Excuse me sir/madam</p>	<p>je voudrais I would like</p>	<p>un a</p>	<p>Orangina - a fizzy orange diabolo menthe - a mint cordial café express - an espresso coffee café crème - a milky coffee chocolat chaud - hot chocolate thé au lait/au citron - a tea with milk/lemon jus d'orange -orange juice coca (light) - (diet) coke</p> <p>croque monsieur - grilled cheese and ham sandwich sandwich au jambon/fromage - ham/cheese sandwich</p>
<p>Et pour vous? And for you?</p>	<p>pour moi for me</p>	<p>une a</p>	<p>grenadine à l'eau - a fruit cordial eau minérale - mineral water</p> <p>crêpe au sucre - pancake with sugar glace au chocolat / à la vanilla / à la fraise / à la pistache - chocolate / vanilla / strawberry/ pistachio ice cream</p>
		<p>des some</p>	<p>frites - chips chips - crisps</p>
<p>C'est combien s'il vous plaît? How much is it please?</p>	<p>ça fait 10 euros - it comes to 10 euros. Voilà, merci. - Here you are, thank you.</p>		

Je vais visiter Paris

<p>Normalement/d'habitude Usually Le weekend At weekends Samedi prochain Next Saturday</p>	<p>je vais I'm going to</p>	<p>jouer au basket - play basketball jouer au foot - play football jouer au laser-tag - play laser-tag manger un gâteau / une pizza - eat a cake / pizza aller au zoo - go to the zoo aller au centre de loisirs - go to the leisure centre faire un tour en Segway - go on a Segway tour faire les magasins - to shopping</p>
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High Frequency Words

<p>Pronouns tu vous</p>	<p>you (singular) you (plural/formal)</p>
<p>Connectives où ou si (s' before vowel)</p>	<p>where or if</p>
<p>Time expressions aujourd'hui ce matin cet après - midi ce soir ce weekend</p>	<p>today this morning this afternoon this evening this weekend</p>
<p>normalement d'habitude</p>	<p>normally usually</p>
<p>le lundi matin le mardi après-midi le samedi soir le weekend</p>	<p>Monday morning Tuesday afternoon Saturday evening at weekends</p>
<p>le weekend prochain dimanche prochain</p>	<p>next weekend next Sunday</p>

GRAMMAIRE

Regular present tense verbs

ER VERBS e.g. Passer = to spend (time)

Je passe	<i>I spend</i>
Tu passes	<i>You spend</i>
Il/Elle/On passe	<i>He/She/One spends</i>
Nous passons	<i>We spend</i>
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IR VERBS e.g. Finir = finish

Je finis	<i>I finish</i>
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RE VERBS e.g. vendre = to sell

Je vends	<i>I sell</i>
Tu vends	<i>You sell</i>
Il/Elle/On vend	<i>He/She/One sells</i>
Nous vendons	<i>We sell</i>
Vous vendez	<i>You sell (form/pl)</i>
Ils/Elles vendent	<i>They sell</i>

GRAMMAIRE Irregular present tense verbs

Faire = to do / to make

Je fais	<i>I do</i>
Tu fais	<i>You do</i>
Il/Elle/On fait	<i>He/She/One does</i>
Nous faisons	<i>We do</i>
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Aller = to go

Je vais	<i>I go</i>
Tu vas	<i>You go</i>
Il/Elle/On va	<i>He/She/One goes</i>
Nous allons	<i>We go</i>
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Ils/Elles vont	<i>They go</i>

Vouloir = to want

Je veux	<i>I want</i>
Tu veux	<i>You want</i>
Il/Elle/On veut	<i>He/She/One wants</i>
Nous voulons	<i>We want</i>
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Pouvoir = to be able to

Je peux	<i>I can</i>
Tu peux	<i>You can</i>
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GRAMMAIRE Modal verbs

Grammar

Aujourd'hui	<i>Today</i>
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If the weather's nice

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If the weather's bad

★ **Si j'ai assez d'argent**
If I have enough money

Ça va être...
It's going to be

cool / génial / sympa
cool / great / nice

Qu'est-ce qu'on va faire? What are we going to do?

Near Future Tense = Aller + infinitive (going to do)

Je vais <i>I am going</i>	aller au parc	<i>to go to the park</i>
	visiter le musée	<i>to visit the museum</i>
On va / Nous allons <i>We are going</i>	manger au resto	<i>to eat at a restaurant</i>
	acheter un jeu vidéo	<i>to buy a videogame</i>
Use the present tense of the verb ALLER from above ↗	voir un spectacle	<i>to see a show</i>
	faire les magasins	<i>to go shopping</i>
	prendre le bus	<i>to take the bus</i>

Qu'est-ce que tu as fait le week-end dernier? <i>What did you do last weekend?</i>	J'ai / Nous avons... <i>I / We...</i>	...passé (le week-end) <i>...spent (the weekend)</i>	...participé à une compétition <i>...took part in a competition</i>	fait du vélo <i>...went cycling</i>
	...joué au tennis <i>...played tennis</i>	...fêté (mon anniv) ...celebrated <i>my birthday</i>	...regardé un match / film <i>...watched a match / a film</i>	fait de la natation <i>...went swimming</i>

Hier <i>Yesterday</i>
Avant-hier <i>The day before yesterday</i>
Le week-end dernier <i>Last weekend</i>
La semaine dernière <i>Last week</i>
Il y a deux semaines <i>Two weeks ago</i>
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Plus tard <i>Later</i>
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The Past: The Perfect Tense with Avoir									
We use the perfect tense to say what <u>we did</u> or <u>have done</u> in the past. To form it you need 2 parts: PART 1: Avoir (the verb to have) + PART 2: Past participle (e.g. visited/done/eaten)									
PART 1: Avoir = To have		PART 2: The Past participle							
J'ai <i>I have</i>	+	ER verbs + é		IR verbs + i		RE verbs + u		Irregulars	
Tu as <i>You have</i>		visité	<i>visited</i>	fini	<i>finished</i>	perdu	<i>lost</i>	fait	<i>did</i>
Il / Elle/ On a <i>He / She has</i>		regardé	<i>watched</i>	vomi	<i>vomited</i>	attendu	<i>waited</i>	pris	<i>took</i>
Nous avons <i>We have</i>		écouté	<i>listened</i>	dormi	<i>slept</i>	vendu	<i>sold</i>	bu	<i>drank</i>
Vous avez <i>You all have</i>		mangé	<i>ate /eaten</i>					vu	<i>saw</i>
Ils / Elles ont <i>They have</i>		acheté	<i>bought</i>					lu	<i>read</i>

Je suis allé(e) ... <i>I went...</i>
Nous sommes allé(e) ... <i>I went...</i>
au parc / au stade <i>...to the parc / stadium</i>
à la piscine <i>...to the pool</i>
aux magasins <i>...to the shops</i>

The Past: The Perfect Tense with Être					
Some specific 'special' verbs take Être (To be) instead of Avoir...					
Être verbs agree with the subject! If it's feminine, add an 'e'. If it's plural, add an 's'					
PART 1: Être = To be		PART 2: The Past participle (+e) (+s)			
Je suis <i>I am</i>	+	allé(e)(s)	<i>went</i>	sorti(e)(s)	<i>went out</i>
Tu es <i>You are</i>		resté(e)(s)	<i>stayed</i>	parti(e)(s)	<i>left</i>
Il / Elle est <i>He/She is</i>		arrivé(e)(s)	<i>arrived</i>	venu(e)(s)	<i>came</i>
Nous sommes <i>We are</i>		retourné(e)(s)	<i>returned</i>	revenu(e)(s)	<i>came back</i>
Vous êtes <i>You lot are</i>		rentré(e)(s)	<i>went back (home)</i>	devenu(e)(s)	<i>became</i>
Ils / Elles sont <i>They are</i>)	

Point de départ

Module 3- A loisir

Je regarde la télé I watch TV	avant les cours - before lessons tous les soirs - every evening le week-end - at the weekend dans le salon - in the living room dans le bus - on the bus dans ma chambre - in my bedroom avec ma famille - with my family seul(e) - alone	je regarde I watch	des chaînes sur YouTube - YouTube channels à la demande, sur Netflix - on demand on Netflix sur mon smartphone - on my smartphone sur mon ordinateur - on my computer sur ma tablette - on my tablet	c'est it is	varié varied facile easy
J'aime I like Je n'aime pas I don't like	les comédies - comedies les dessins animés - cartoons les documentaires - documentaries les feuilletons - soaps les infos - the news les jeux (télévisés) - gameshows les séries (policières) - (pólice) series les émissions de cuisine / musique / sport / science- fiction / télé- réalité - cookery/ music/ sport/ science fiction / reality programmes		parce qu'ils /elles sont because they are		ridicules - ridiculous divertissant(e)s - entertaining intéressant(e)s - interesting passionnant(e)s - exciting plein(e)s d'action - full of action ennuyeux/euse - boring nuls/nulls - rubbish marrant(e)s - funny bêtes - stupid

Quels sont tes loisirs?

je bavarde / parle avec mes copains
je fais du cyclisme / du vélo
je lis/ je fais de la lecture
je nage / je fais de la natation
je ne lis pas beaucoup
je ne joue jamais à des jeux vidéos
je ne fais rien
je télécharge des chansons
je crée des playlists

I chat with my
friends
I go cycling
I read
I swim
I don't read much
I never play video
games
I don't do anything
I download songs
I create playlists

Les mots essentiels

Possessive adjectives	
mon/ma/mes	my
ton/ta/tes	your
son/sa/ses	his/her
Negatives	
ne...pas	not
ne...jamais	never
ne...rien	nothing

Tu as fait des achats?

Tu as fait des
achats?
Did you go
shopping?

j'ai fait les magasins/des achats - I went shopping
j'ai lu une annonce pour les soldes - I saw an advert
for the sales
j'ai fait une balade/promenade - I went for a walk
j'ai attendu une demi-heure - I waited half an hour
j'ai dépensé trop d'argent - I spent too much money
j'ai découvert un café - I discovered a café
j'ai essayé plein de vêtements - I tried on lots of
clothes

je suis allé(e) au centre commercial
I went to the shopping centre

On va au cinéma

Module 3- A loisir

Tu viens au cinéma? Are you coming to the cinema?	Ça dépend. Qu'est-ce que tu vas voir? It depends. What are you going to see? Bonne idée! Je veux bien Good idea! I'd like to	Je vais regarder I'm going to watch	une comédie - a comedy un film d'animation - an animated film un film romantique - a romantic film un film d'action - an action film un film d'horreur - a horror film un film de science-fiction - a sci-fi film un film de superhéros - a superhero film	Rendez-vous où et à quelle heure? Where and when shall we met?	chez moi/toi at my house/your house A 19h - at 7pm A plus - See you later A demain - See you tomorrow A samedi - See you Saturday
je n'ai pas envie - I don't want to tu rigoles? - are you joking? désolé(e) je ne peux pas ce soir - sorry I can't tonight					
Je peux vous aider? Can I help you?	Je voudrais trois billets pour deux adultes et un enfant - I'd like 3 tickets for 2 adults and a child Ça fait combien? - How much is it? C'est quelle salle? - Which screen?				

Ma célébrité

Normalement, hier et demain

Normalement - Normally	je vais au cinéma - I go to the cinema j'écoute de la musique - I listen to music je lis des BD - I read comics nous jouons en ligne - we play online
Le weekend dernier - Last weekend	je suis allé(e) ... I went j'ai choisi - I chose j'ai visité - I visited
Le weekend prochain - Next weekend	je vais aller - I'm going to go je vais visiter - I'm going to visit on va prendre - we are going to take

Ma célébrité préférée est.. My favourite celebrity is.....	Il/Elle a beaucoup de talent He/She has lots of talent	
il / elle est he / she is	Il/Elle fait beaucoup de choses pour les bonnes causes He/She does a lot for charity	
C'est mon chanteur/euse préféré(e) He/She is my favourite singer	parce qu'ils/elles sont because they are	ridicules - ridiculous divertissant(e)s - entertaining intéressant(e)s - interesting passionnant(e)s - exciting plein(e)s d'action - full of action ennuyeux/euse - boring nuls/nuls - rubbish marrant(e)s - funny bêtes - stupid
C'est un(e) de mes acteurs/actrices préféré(e)s - He/She is one of my favourite actors/actresses		

Module 4- Le monde est petit

Point de départ

Où habites-tu? Where do you like?	J'habite I live	dans - in	un village - a village une ville - a town le désert - the desert	c'est (très/trop) it is (very/too)	amusant - fun tranquille - peaceful calme - quiet ennuyeux - boring animé - lively nul - rubbish génial - great joli - pretty
		à la - in the	campagne - countryside		
		au - at	bord de la mer - the seaside		
		sur - on	une île - an island		
		en - in	France /Suisse - France/Switzerland		
		au - in	Maroc - Morocco		
		aux - in	Antilles - the French Caribbean		
Quel temps fait-il (en été/hiver) What's the weather like (in summer/winter)?			il fait beau - the weather's fine il fait mauvais - the weather's bad il fait chaud - it's hot il fait froid - it's cold		
			il y a du soleil - it's sunny il y a du vent - it's windy il y a du brouillard - it's foggy il y a des orages - it's stormy		
			il pleut - it's raining / it rains il neige - it's snowing / it snows		

Ma routine

je me lève	I get up
je prends le petit déjeuner	I have breakfast
je me douche	I have a shower
je me coiffe	I do my hair
je m'habille	I get dressed
je me lave les dents	I clean my teeth
je quitte la maison	I leave the house
je me lave	I have a wash
je me couche	I go to bed

Fréquence

tous les jours	everyday
souvent	often
quelquefois	sometimes
le weekend	at weekends
le lundi	on Mondays

Time expressions

le matin	in the morning(s)
le soir	in the evening(s)
le weekend	at the weekend
pendant la journée	during the day
en semaine	during the week
d'habitude	usually

Qu'est-ce qu'on doit faire pour aider à la maison?

On doit - We/People must Je dois - I must Ma sœur/frère doit My sister/brother must	garder ma sœur - look after my sister garder mon frère - look after my brother ranger ma chambre - tidy my room rapporter l'eau - collect the water	faire la cuisine - do the cooking faire la vaisselle - do the washing up faire la lessive - do the washing nourrir les animaux - feed the animals
On ne doit pas polluer l'eau - We/People must not pollute the water		

Module 4- Le monde est petit

Point de départ

Dans mon nouvel appartement In my new apartment	il y a there is/are	un vieux - an old un beau - a pretty un nouveau - a new	salon - living room bureau - office
Dans ma nouvelle maison In my new house		une vieille - an old une belle - a pretty une nouvelle - a new	cuisine - kitchen chambre - bedroom

A la découverte d'une nouvelle région

Où est-ce que tu es en vacances? Where are you on holiday?	Je suis en Corse - I'm in Corsica
C'est comment? - What's it like	C'est très joli - it's very pretty
A quelle heure est-ce que tu te lèves? What time do you get up?	Je me lève à (sept heure) I get up at 7am
Où est-ce que tu prends le petit déjeuner? Where do you have your breakfast?	Je prends le petit déjeuner dans le jardin I have breakfast in the garden
Qu'est-ce qu'on peut faire ici? What can you do here?	On peut faire des randonnées You can go for walks
Qu'est-ce que tu fais pendant la journée? What do you do during the day?	Je vais à la plage - I go to the beach
Qu'est-ce qu'on doit faire l'après-midi? What must you do in the afternoon?	On doit faire la sieste - You must take a siesta
Qu'est-ce que tu vas faire le weekend prochain? What are you going to do next weekend?	Je vais faire un pique-nique I'm going to have a picnic
Qu'est-ce que tu as fait le weekend dernier? What did you do last weekend?	Je suis allée(e)... I went
C'était comment? - What was it like?	C'était intéressant - It was interesting

Elle est comment, ta région?

Dans ma région In my region	il y a there is/are	plein de plenty of peu de little, not many trop de too much/many	touristes tourists magasins shops
		un a	champ - field lac - lake jardin public - park
		une a	montagne - mountain plage - beach rivière - river
On peut You can	il y'a pas de there are no		bâtiments - buildings plages - beaches voitures - cars
	manger des crêpes - eat pancakes visiter les monuments historiques - visit historic monuments visiter des grottes - visit caves aller au cinéma / à la plage / en ville - go to the cinema/beach/town faire les magasins - go shopping faire des randonnées - go for walks faire du canoë-kayak - go canoeing faire du ski - go skiing cultiver le coton - grow cotton travailler dans les champs - to work in the fields acheter des animaux - to buy animals aller à l'école - to go to school vendre des légumes - to sell vegetables		

GRAMMAIRE

Regular present tense verbs

ER VERBS e.g. Passer = to spend (time)

Je passe	<i>I spend</i>
Tu passes	<i>You spend</i>
Il/Elle/On passe	<i>He/She/One spends</i>
Nous passons	<i>We spend</i>
Vous passez	<i>You spend (form/pl)</i>
Ils/Elles passent	<i>They spend</i>

IR VERBS e.g. Finir = finish

Je finis	<i>I finish</i>
Tu finis	<i>You finish</i>
Il/Elle/On finit	<i>He/She/One finishes</i>
Nous finissons	<i>We finish</i>
Vous finissez	<i>You finish (form/pl)</i>
Ils/Elles finissent	<i>They finish</i>

RE VERBS e.g. vendre = to sell

Je vends	<i>I sell</i>
Tu vends	<i>You sell</i>
Il/Elle/On vend	<i>He/She/One sells</i>
Nous vendons	<i>We sell</i>
Vous vendez	<i>You sell (form/pl)</i>
Ils/Elles vendent	<i>They sell</i>

GRAMMAIRE Irregular present tense verbs

Faire = to do / to make

Je fais	<i>I do</i>
Tu fais	<i>You do</i>
Il/Elle/On fait	<i>He/She/One does</i>
Nous faisons	<i>We do</i>
Vous faites	<i>You do (form/pl)</i>
Ils/Elles font	<i>They do</i>

Aller = to go

Je vais	<i>I go</i>
Tu vas	<i>You go</i>
Il/Elle/On va	<i>He/She/One goes</i>
Nous allons	<i>We go</i>
Vous allez	<i>You go (form/pl)</i>
Ils/Elles vont	<i>They go</i>

Vouloir = to want

Je veux	<i>I want</i>
Tu veux	<i>You want</i>
Il/Elle/On veut	<i>He/She/One wants</i>
Nous voulons	<i>We want</i>
Vous voulez	<i>You want (form/pl)</i>
Ils/Elles veulent	<i>They want</i>

Pouvoir = to be able to

Je peux	<i>I can</i>
Tu peux	<i>You can</i>
Il/Elle/On peut	<i>He/She/One can</i>
Nous pouvons	<i>We can</i>
Vous pouvez	<i>You can (form/pl)</i>
Ils/Elles peuvent	<i>They can</i>

GRAMMAIRE Modal verbs

Grammar

Aujourd'hui	<i>Today</i>
Demain (soir)	<i>Tomorrow (night)</i>
Ce matin / ce soir	<i>This morning/evening</i>
Cet après-midi	<i>This afternoon</i>
La semaine prochaine	<i>Next week</i>

★ **S'il fait beau**
If the weather's nice

★ **S'il fait mauvais**
If the weather's bad

★ **Si j'ai assez d'argent**
If I have enough money

Ça va être...
It's going to be

cool / génial / sympa
cool / great / nice

Qu'est-ce qu'on va faire? What are we going to do?

Near Future Tense = Aller + infinitive (going to do)

Je vais <i>I am going</i>	aller au parc	<i>to go to the park</i>
	visiter le musée	<i>to visit the museum</i>
On va / Nous allons <i>We are going</i>	manger au resto	<i>to eat at a restaurant</i>
	acheter un jeu vidéo	<i>to buy a videogame</i>
Use the present tense of the verb ALLER from above ↗	voir un spectacle	<i>to see a show</i>
	faire les magasins	<i>to go shopping</i>
	prendre le bus	<i>to take the bus</i>

Qu'est-ce que tu as fait le week-end dernier? <i>What did you do last weekend?</i>	J'ai / Nous avons... <i>I / We...</i>	...passé (le week-end) <i>...spent (the weekend)</i>	...participé à une compétition <i>...took part in a competition</i>	fait du vélo <i>...went cycling</i>
	...joué au tennis <i>...played tennis</i>	...fêté (mon anniv) ...celebrated <i>my birthday</i>	...regardé un match / film <i>...watched a match / a film</i>	fait de la natation <i>...went swimming</i>

Hier <i>Yesterday</i>
Avant-hier <i>The day before yesterday</i>
Le week-end dernier <i>Last weekend</i>
La semaine dernière <i>Last week</i>
Il y a deux semaines <i>Two weeks ago</i>
D'abord / Enfin <i>Firstly / Finally</i>
Ensuite / puis <i>Next / then</i>
Après <i>After</i>
Plus tard <i>Later</i>
★ Après avoir (mangé) <i>After having (eaten)</i>
★ Avant de (partir) <i>Before (leaving)</i>



The Past: The Perfect Tense with Avoir									
We use the perfect tense to say what <u>we did</u> or <u>have done</u> in the past. To form it you need 2 parts: PART 1: Avoir (the verb to have) + PART 2: Past participle (e.g. visited/done/eaten)									
PART 1: Avoir = To have		PART 2: The Past participle							
J'ai <i>I have</i>	+	ER verbs + é		IR verbs + i		RE verbs + u		Irregulars	
Tu as <i>You have</i>		visité	<i>visited</i>	fini	<i>finished</i>	perdu	<i>lost</i>	fait	<i>did</i>
Il / Elle/ On a <i>He / She has</i>		regardé	<i>watched</i>	vomi	<i>vomited</i>	attendu	<i>waited</i>	pris	<i>took</i>
Nous avons <i>We have</i>		écouté	<i>listened</i>	dormi	<i>slept</i>	vendu	<i>sold</i>	bu	<i>drank</i>
Vous avez <i>You all have</i>		mangé	<i>ate /eaten</i>					vu	<i>saw</i>
Ils / Elles ont <i>They have</i>		acheté	<i>bought</i>					lu	<i>read</i>

Je suis allé(e) ... <i>I went...</i>
Nous sommes allé(e) ... <i>I went...</i>
au parc / au stade <i>...to the parc / stadium</i>
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The Past: The Perfect Tense with Être					
Some specific 'special' verbs take Être (To be) instead of Avoir...					
Être verbs agree with the subject! If it's feminine, add an 'e'. If it's plural, add an 's'					
PART 1: Être = To be		PART 2: The Past participle (+e) (+s)			
Je suis <i>I am</i>	+	allé(e)(s)	<i>went</i>	sorti(e)(s)	<i>went out</i>
Tu es <i>You are</i>		resté(e)(s)	<i>stayed</i>	parti(e)(s)	<i>left</i>
Il / Elle est <i>He/She is</i>		arrivé(e)(s)	<i>arrived</i>	venu(e)(s)	<i>came</i>
Nous sommes <i>We are</i>		retourné(e)(s)	<i>returned</i>	revenu(e)(s)	<i>came back</i>
Vous êtes <i>You lot are</i>		rentré(e)(s)	<i>went back (home)</i>	devenu(e)(s)	<i>became</i>
Ils / Elles sont <i>They are</i>)	

Grammar

Geography

Living World 2: Hot Deserts Paper 1, Question 2

Hot Deserts: Tier 3 vocab

Appropriate technology – Technology suited to the needs, skills, knowledge and wealth of local people.

Biodiversity – The variety of life in the world or a particular habitat.

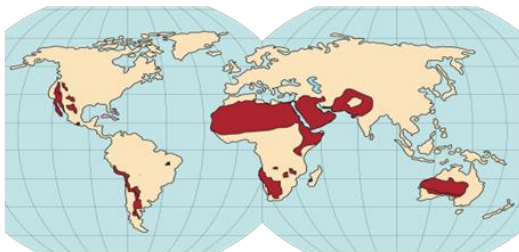
Desertification – The process by which land becomes drier and degraded.

Mineral extraction – The removal of solid mineral resources from the earth.

Over cultivation – Exhausting the soil by over-cropping the land.

Over grazing – Grazing too many livestock for too long on the land, so it is unable to recover its vegetation.

Distribution of Deserts



Uneven distribution

Around the Tropics of Cancer and Capricorn
Between 15° and 30° north or south of the Equator

Large parts of N Africa e.g. Sahara, E Asia e.g. Thar.

Characteristics

Climate – Arid (rainfall <250mm/year, summer temperatures >40°C and high pressure.

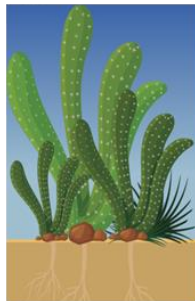
Water – Short supply, downpours when it rains, high evaporation rates.

Soil – Sandy or stony and dry. Very little organic matter and generally not very fertile.

Biotic – Low level of biodiversity. Many plants and animals have adapted to conditions.

People – Sparsely vegetated desert fringes = livestock farming.

Adaptations



Reduced number of stomata to reduce water loss by transpiration - **Saguaro**.
Needles instead of leaves, reducing loss by evapotranspiration - **Prickly Pear**

Large capacity to store water in fleshy stems.

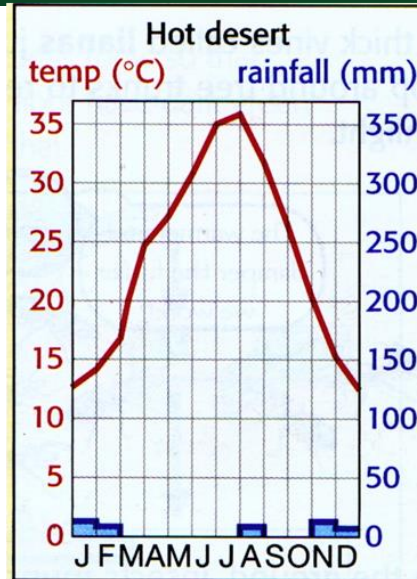
Large, network of roots absorb water rapidly after rainfall.

Camels

- humps store fat which a camel can break down into water and energy.
- broad, flat, leathery feet to spread their weight and provide protection from hot sand.

Long Eared Jerboa

- Nocturnal and burrowing to avoid high daytime temperatures.



High diurnal temperature range due to lack of cloud cover to retain heat at night as this is an area of high pressure, due to sinking air which initially rose at the Equator.

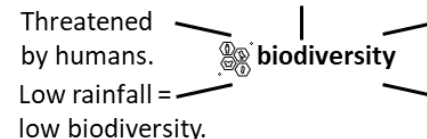
Interdependence

Interdependence includes:

- complex food webs
- sustainable coexistence of people, plants and animals in fragile semi-arid environments
- adaptations of plants and animals to soil and climate characteristics
- potential damage to the ecosystem inflicted by overgrazing or excess deforestation for firewood.

Biodiversity

Rich in small pockets near water.



Geography

Living World 2: Hot Deserts
Paper 1, Question 2

Hot Desert Case Study Thar Desert



Location



Thar Desert – Tier 3 Vocab

Ecotourism – Travel that conserves the environment and benefits locals.

Inaccessibility – Very difficult to travel or impossible to travel to or reach.

Irrigation – Applying controlled amounts of water to crops.

Non-renewable energy – Energy from sources that will eventually run out e.g. oil.

Population density – a measurement of the number of people in an area.

Renewable energy – Energy from sources that will not run out e.g. solar.

Bunds – Low rock walls that follow contours, designed to disrupt surface flow.

Desertification – Land turning to desert over time.

Great Green Wall – A plan to plant trees in the Sahel to reduce desertification.

Over-cultivation – Exhausting the soil by over-cropping the land.

Overgrazing – Grazing too many livestock for too long on the land.

Soil erosion – Removal of topsoil faster than it can be replaced.

Solutions to Challenges in the Thar

- The **Prosopis cineraria tree** is suited to grow in the desert and can provide shade and fodder for animals
- Moving sanddune sand can be **stabilised by growing blocks of trees** to create shelter belts alongside roads.
- The **650km Indira Gandhi Canal** was constructed in 1958 to provide drinking water and irrigation to allow commercial growing of cotton and wheat around Jaisalmer





Overview

The Thar Desert, also known as the Great Indian Desert, is located in north-west India and stretches into Pakistan. It covers 200,000 square kilometres and is the most densely populated desert in the world. The desert forms a natural boundary between India and Pakistan.




Opportunities

 **Mineral resources** – Many minerals are extracted from the ground in the Thar Desert including limestone, marble, phosphorite, feldspar and gypsum. Oil discovered in Barmer.

 **Renewable energy** – At Jaisalmer, 75 wind turbines are generating 60MW of electricity. Solar energy is being used in Bhaleri to power water treatment works.




Tourism – Tourism in the Thar Desert has increased recently, mainly from Pakistan. Desert safaris are popular as is ecotourism including camel treks to visit oases.

 **Farming** – Most farming is subsistence including rearing animals, growing crops and foraging fruit and berries. Indira Gandhi canal = irrigation of 3500km for commercial farming.



Challenges

 **Water** – Precipitation levels in the Thar Desert are very low, between 120-240mm, and evaporation rates are high. Water stored in tobas (natural ponds) in remote areas.



Temperature – The average temperature is 27°C. Temperatures can exceed 50°C in the Thar Desert which makes it very challenging to for people, such as farmers, to work outside. High temperatures lead to rapid evaporation and a shortage of water.

Geography

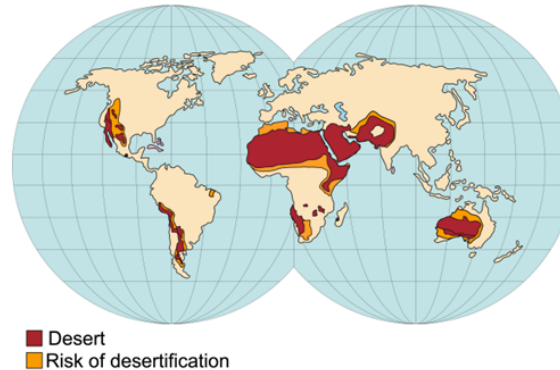
Living World 2: Hot Deserts Paper 1, Question 2

Desertification

About

Deserts are increasing in size daily due to desertification. Desertification is the process of land turning into desert. Areas on the edge of hot deserts are especially at risk.

Location of Desertification



Impacts of Desertification

Physical impacts of Desertification

- Loss of top soil & vegetation diversity
- **Salinisation** (drawing salts to the surface through **evaporation**) making the soil infertile

Human impacts of Desertification

- Lack of food and water
- Increases **migration**. As areas become **unsustainable** people are forced into other **marginal** areas (leading to further pressure on land).

Causes of Desertification

Climate Change – hotter and drier conditions are increasing the risk of land turning to desert - worlds average annual rainfall has decreased in the last 50 yrs.

Population growth – Increasing population raises the demand for food leading to vegetation destruction and soil erosion - 50 Million people live in the Sahel area, an area prone to desertification.

Removal of fuelwood – Deforestation leave the soil exposed and vulnerable to erosion. Winds blow away the top soil. Half the worlds top soil has been removed in the last 150yrs.

Overgrazing – The soil becomes bare as the result of vegetation being removed by grazing animals - e.g. by herds of goats, this exposes the soil to erosion and removes any roots which could have held the top soil.

Over-cultivation – Farming is becoming more intensive (same crop in same area, year on year) which means the land has less chance to recover causing it to become infertile. Crops die, leaving soil exposed.

Soil erosion – Exposed soil is baked in the sun. When it rains it washes over the surface removing topsoil exposing infertile sub-soil.

Reducing the Risk

Water and soil management

Addresses the problem of intense rainfall events washing away loose soil and causing soil erosion e.g. bunds in the Sahel. It also involves water storage and controlling surface flow.

Appropriate technology

The use of technology or techniques that can be easily used or replaced by local people. Examples include bunds and planting pits (zai).

Tree planting

Effective in reducing soil erosion. Roots bind the soil and canopies act like umbrellas. The Great Green Wall is a plan to plant trees across the southern edge of the Sahara desert.



Geography

Challenge of Resource Management: Resource Management Paper 2, Question 3

The Importance of Food, Water and Energy

Food, Water, Energy Tier 3

Resource management – The control and monitoring of resources so that they do not become depleted or exhausted.

Fossil fuel – A natural fuel such as coal or gas, formed in the geological past from the remains of living organisms.

Development – The progress of a country in economic growth, welfare and tech.

Biomass – a source of fuel or energy using organic materials e.g. wood.

Energy exploitation – Developing and using energy to the greatest advantage.

Fossil fuel – A natural fuel formed in the geological past from living organisms.

HEP – Electricity generated by turbines that are driven by moving water.

Renewable energy resource – A resource which is not diminished when it is used.

Agribusiness – Application of business skills to agriculture.

Carbon footprint – A measurement of all the greenhouse gases we individually produce.

Water deficit – where water demand is greater than supply.

Water quality – the chemical, physical, and biological content of water.

Water stress – demand for water exceeds the available amount restricting use.

Water surplus – where water supply is greater than demand.

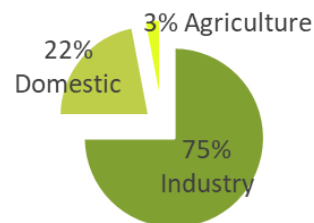
Food miles – The distance covered supplying food to consumers.

Local food sourcing – A method of food production and distribution that is local, rather than national and/or international.

Organic produce – Food which is produced using environmentally and animal friendly farming methods.

Water

Water is needed for a range of reasons. Humans need to drink water to survive. Water is also required for washing and disposing of waste in industry and manufacturing. The average person in the UK uses 150 litres of water a day. Only 4% of this is used for drinking. In the UK, 75% of water is used by industry.



Importance to well being

Food, water and energy are essential to economic and social wellbeing. Where resources are plentiful economies grow, societies flourish and the population enjoys a good quality of life. Where resources are scarce, the opposite occurs. Resource management can have a significant impact on development.

Food

A healthy life is dependent on food, as it provides energy as calories. The guidelines for average daily calories are:



Category	Calories	Notes
Men	2,500	People who are very physically active and those living in cold environments require a higher calorie intake. In some places around the world many people consume far fewer calories, leading to poor well being. This is mostly in LICs. An increasing number of people in HICs consume far too many calories. This leads to obesity and poor well being.
Women	2,000	
Child (5-10)	1,800	
Girl (11-14)	1,850	
Boy (11-14)	2,200	

Energy

Energy is used in many ways - it heats our homes, manufactures goods, processes food & power transport. Energy use varies depending on where people live and how wealthy (rich) they are. In the past, energy has come from burning wood & fossil fuels (oil, coal & gas). Fossil fuel is a natural fuel, formed in the geological past from remains of living organisms. Nowadays, more energy comes from renewable energy, such as solar & wind power. Renewable energy often referred to as clean energy, comes from natural sources or processes that are constantly replenished.

History

Knowledge Organiser: Year 9 Nazi Germany and the Holocaust

	Key information	Key information	Key events
Nazi Germany and the Holocaust	<p>1919- The Treaty of Versailles</p> <ul style="list-style-type: none"> -At the end of WW1 the allies impose a harsh peace treaty on the Germans. They lose land, money and must take the blame for starting the war. -Adolf Hitler, the leader of the Nazi party blames enemies inside Germany for losing the war. -This group included Jews, Gypsies, Homosexuals, and Communists etc. -He wanted to make Germany great by removing those he thought of as impure leaving only pure German people left. -Pure Germans= Aryan or Ubermenschen -Impure= Untermenschen -After taking power in 1933 the Nazis began changing words into actions. <p>Persecution</p> <ul style="list-style-type: none"> -Nazis remove "Jewish influences" from society, eg: -The 1935 Nuremberg laws removing their German citizenship & banning marriages & relationships with Jews. Also restricted where they could go. Jews not allowed outside after 6:00pm. -Jews no longer allowed to work certain jobs e.g doctor/teacher/lawyer. -Nazis convince people to boycott Jewish shops in Germany. -Kristallnacht, huge Nazi protests against Jews turn violent, over 100 Jews killed in 1938. By 1939 over half of the Jewish population in Germany have left. (250,000+) -After invasion of Poland in 1939 Jews forced to wear badges identifying themselves. -Jews not only group facing persecution. -Homosexual, gypsy and disabled people are imprisoned in camps or sterilised. <p>T4 Program</p> <ul style="list-style-type: none"> -Also called T4 Euthanasia Program, Adolf Hitler initiated the program in 1939. -Was supposed to make society more pure by removing those seen as weak or inferior. -Designed to kill incurably ill, physically or mentally disabled, emotionally distraught, and certain elderly people. -Provided a warning of where Nazi policy was heading. 	<p>Imprisonment</p> <ul style="list-style-type: none"> -Increasing number of Jews sent to prison camps called concentration camps. Conditions in the camps are terrible, many die. -As the Nazis conquer new land they begin to form prisons inside captured cities such as Warsaw. -Huge areas of a city or bricked off and turned into a prison that Jews from across occupied territory can be sent to. <p>The Warsaw Ghetto:</p> <ul style="list-style-type: none"> -Ghettos had to set up a 'Judenrat', a Jewish council that would be responsible for enforcing German orders. The largest ghetto was in Warsaw. It was completed in Nov 1940. The ghetto had 3 metres high wall with barbed wire. March 1941 – 445,000 inhabitants – a third of the city's population – in just 2.4 % of its area. On average 15 people live in a small apartment. By 1941, 7 per room. These conditions lead to disease. Autumn 1941 - 900 cases of typhus – severe infection – fatal without antibiotics. Over 140,000 died here of the poor living conditions. -Starvation was a constant problem in the ghetto. The guards would give the Jews only 300 calories of food a day. The rest had to be smuggled in from the outside, many people died of starvation. -By 1942 the Ghettos across Eastern Europe were reaching capacity, the Nazis now began to "liquidise" the ghettos by emptying the population into concentration camps. -When the Jewish population realised what was happening they tried to fight back using smuggled in weapons from April 19 to May 16, 1943. However, they could do little to stop what was happening. 	<p>1925- Hitler writes Mein Kampf outlining his racist & anti-Jewish ideas.</p> <p>1933- Hitler becomes chancellor of Germany.</p> <p>1933- First concentration camps established to imprison enemies of the Nazis + others.</p> <p>1935- Nuremberg laws are passed.</p> <p>1938- Kristallnacht, German Jews + their business/homes etc attacked.</p> <p>1939- T4 Eugenics program starts. Murder of the disabled.</p> <p>1939- WW2 begins when Germany invades Poland.</p> <p>1940- Ghettos built in Poland to imprison Jews.</p> <p>1941- Invasion of Russia. Einsatzgruppen begin the mass murder of Jews + other groups.</p> <p>1942 Jan 20th – The Wannsee conference. Leading Nazis decided on the 'Final solution'.</p> <p>1942- Nazis start the liquidation (closure) of the ghettos.</p> <p>1943 February - 80% of holocaust victims now dead.</p> <p>1943, April- Warsaw Ghetto Uprising.</p> <p>1944 –Germans destroy evidence of the holocaust. Allies begin to liberate camps and the world discovers what's happened.</p>
			

History

Knowledge Organiser: Year 9 Nazi Germany and the Holocaust

Murder

- When Germany invaded Russia the Nazis wanted the new land cleared of Untermenschen and ready for German people to arrive.
- Behind the Nazi armies came special teams called Einsatzgruppen
- Working with local anti-Jewish groups they rounded and killed Jews and other groups.
- In Kiev in the Ukraine, 33,771 people were killed in just 2 days by these death squads.
- In total they would kill over 2 million people.
- As the ghettos began to fill up from 1942 into 1943 more and more local Nazi commanders turned to murder to get rid of the Jewish population.
- The Nazis now began to use special gas trucks to kill people. Jews and others would be forced into the back of the truck, then the fumes from the engine/exhaust would be pumped in. Most suffocated in around 20 mins.



Key Words

- Mein Kampf** - Book written by Hitler outlining his racist world views and plans for conquest.
- Holocaust** - the systematic murder of Europe's Jews by the Nazis and their collaborators.
- Genocide** -deliberate killing of a large group of people, especially those of a particular nation or ethnic group.
- Aryan** – Nazis used this word to describe their ideal race.
- Übermenschen** – Nazis used this word for master race
- Nuremberg Laws**- 1935 laws that removed German Jews citizenship and stripped them of most basic rights.
- Ghetto** –Sectioned off part of a city used to hold Jews prisoner.

Extermination

- By 1942 the Nazis had decided that the murder of the Jews was moving too slowly. Also, the ghettos were becoming too full to take any surviving Jews.
- January 1942 –Leading Nazi Reinhard Heydrich organises the “Final Solution” at the Wannsee conference in Berlin where the Nazis agree to the mass murder of Jews across Europe. Gas will be used to achieve this.
- Many death & slave labour camps were set up, Auschwitz was the most notorious because over 1.1 million Jews were killed here. Historian Christian Browning estimated “In March 1942 – 80% of all those killed in the Holocaust were still alive, just 11 months later, February 1943 80% of them were already dead. (over 4 million)
- The camps worked in two ways. Just as before concentration camps tried to work and starve the people to death. However, a second kind of camp (often hidden inside an existing camp) now appeared.
- These death camps would force those who couldn't work (sick/young/old etc) into chambers. They were told they were being given a shower. When the doors of the chamber were locked, poison gas was pumped into the room. Afterwards, the bodies were burned.
- In this way millions were killed. Combined with the actions of Einsatzgruppen and others the holocaust claimed roughly: 6 Million Jews & 11 Million other people



Key Words

- Einsatzgruppen** – SS death squads, followed behind German army rounding up and killing those the Nazis wanted rid of.
- Kristallnacht** –1938 Nov 9th ‘Night of broken glass’, Nazi led protests attack and destroy Jewish shops/homes/temples across Germany.
- Untermenschen** – Nazis used this word for sub human race
- SS**- (Storm troopers) the Nazi parties private army. Combined military + Police function.
- Concentration Camp**- Prison camps that the Nazi used to hold Jews and other groups. Many worked the inmates to death or starved them. Other camps, like Auschwitz were death camps.
- Auschwitz**- Most notorious of the death camps.

Key people

- Adolf Hitler**- Leader of Germany and responsible for the Nazis racist ideology as well as the holocaust.
- Heinrich Himmler** Head of the SS. The man directly responsible for organising the holocaust.
- Reinhard Heydrich** Leader of Einsatzgruppen and organiser of the Wannsee conference. Capable of astonishing cruelty, even Hitler called him “The man with the iron heart”.
- Adolf Eichmann** In charge of logistics. Organised the trains that took the Jews + others to the death camps.
- Joseph Mengele** Known as the Angel of Death. Scientist at Auschwitz, picked who lived and died. Also performed deadly experiments.

Skills

- Chronology**
- Inference**
- Providence**
- Historiography**

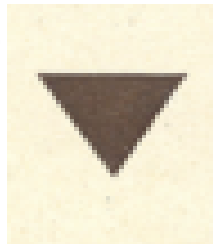
History

Roma and Sinti People

It is estimated that more than 500,000 Roma and Sinti people were murdered during the Second World War, though the true number may be as many as one million. Many died in the death camps while others were murdered elsewhere or died of disease or starvation.

1. The Roma genocide by the Nazi regime is often known as the Porajmos, which comes from the Roma word for 'devouring'.
2. In 1938, Heinrich Himmler, the Chief of the German police and Head of the SS, issued a decree called "The Fight Against the Gypsy Menace", which required all Sinti and Roma people to register with the police. In December 1942, Himmler issued an order to send all Gypsies to concentration camps.
3. 2nd August 1944, 2,987 Roma and Sinti people were murdered in the 'Gypsy Family' camp at Auschwitz-Birkenau.
4. Roma and Sinti people were identified in concentration camps by a badge with a black triangle, which was the symbol for 'anti-socials'. Later, a brown triangle was introduced to further set them apart.
5. Josef Mengele, the doctor infamous for brutal experiments on hundreds of twins, was the head physician in the Gypsy camp at Auschwitz from May 1943 to August 1944. He had a particular fascination for Roma and Sinti children and conducted fatal experiments on them

Identification of Roma and Sinti People



Holocaust Overview

Holocaust Overview

The Holocaust was a genocide that took place during World War II, in which up to 17 million people were systematically exterminated by Nazi Germany and its collaborators. Around 6 million Jews were killed, in addition to Romani peoples, ethnic Poles and Slavs, homosexual men, and many other groups. The Holocaust took place in several stages:

Removal of Rights

The Nuremberg Laws (1935) meant that Jews were fired from jobs, forced to wear a yellow Star of David, stripped of German citizenship, and banned from German schools, amongst many other measures.



Segregation

Jews were forced out of their homes and into ghettos. The ghettos were filthy, with poor sanitation, and were extremely overcrowded. Food supplies were low, and so many people starved to death.



Extermination

Victims were sent to concentration camps, where many were forced to work in hellish conditions, where many died. Others were sent to the gas chambers. Later, camps opened for the sole purpose of extermination.



YEAR 9 — CONSTRUCTING IN 2D/3D...

3D Shapes

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Name 2D & 3D shapes
- Recognise Prisms
- Sketch and recognise nets
- Draw plans and elevations
- Find areas of 2D shapes
- Find Surface area for cubes, cuboids, triangular prisms and cylinders
- Find the volume of 3D shapes

Keywords

2D: two dimensions to the shape e.g length and width

3D: three dimensions to the shape e.g length, width and height

Vertex: a point where two or more line segments meet

Edge: a line on the boundary joining two vertex

Face: a flat surface on a solid object

Cross-section: a view inside a solid shape made by cutting through it

Plan: a drawing of something when drawn from above (sometimes birds eye view)

Perspective: a way to give illustration of a 3D shape when drawn on a flat surface.

Name 2D & 3D shapes



Circle



Square



Rectangle



Triangle



Rhombus



Trapezium



Parallelogram



Hexagon



Cone



Cylinder



Sphere



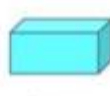
Cube



Triangular Prism



Tetrahedron



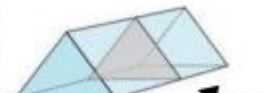
Cuboid



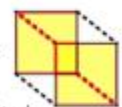
Square based Pyramid

Recognise prisms

A solid object with two identical ends and flat sides



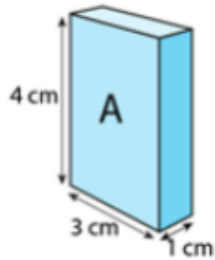
The cross section will also be identical to the end faces



A cylinder although with very similar properties does not have flat faces so is not categorised as a prism

Maths

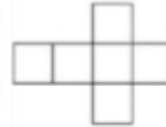
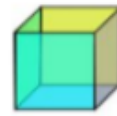
Nets of cuboids



1cm grids help to draw accurately

Visualise the folding of the net. Will it make the cuboid with all sides touching

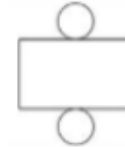
Sketch and recognise nets



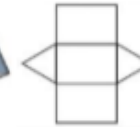
Do they have the same number of faces?



Where do the edges join?



Are the shapes of the faces correct?



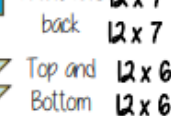
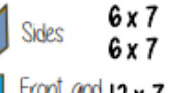
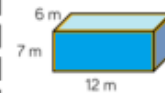
Plans and elevations



The direction you are considering the shape from determines the front and side views

Surface area

Sketching nets first helps you visualise all the sides that will form the overall surface area



For cubes and cuboids you can also find one of each face and double it

Sides 6×7
 6×7
 Front and back 12×7
 12×7
 Top and Bottom 12×6
 12×6

Sum of all sides is surface area



For other shapes - not all the sides are the same, so calculate the individually

Area of 2D shapes

Rectangle
 Base x Height



Triangle
 $\frac{1}{2} \times \text{Base} \times \text{Perpendicular height}$



Parallelogram/ Rhombus
 Base x Perpendicular height



Area of a trapezium
 $\frac{(a+b) \times h}{2}$

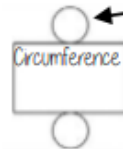


Area of a circle
 $\pi \times \text{radius}^2$



Surface area - cylinders

The area of the circle
 $\pi \times \text{radius}^2$



The width of this face is the same as the circumference
 $\pi \times \text{diameter} \times \text{height}$

$$2 \times \pi \times \text{radius}^2 + \pi \times \text{diameter} \times \text{height}$$

Volumes

Volume is the 3D space it takes up - also known as capacity if using liquids to fill the space



Counting cubes

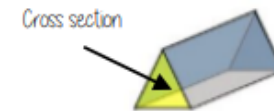
Some 3D shape volumes can be calculated by counting the number of cubes that fit inside the shape

$$\text{Cubes/ Cuboids} = \text{base} \times \text{width} \times \text{height}$$

Remember multiplication is commutative



Cross section



$$\text{Prisms and cylinders} = \text{area cross section} \times \text{height}$$

Height can also be described as depth

Areas - square units
 Volumes - cube units

Areas and volumes can be left in terms of π

YEAR 9 — CONSTRUCTING IN 2D/3D...

Constructions & congruency

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Draw and measure angles
- Construct scale drawings
- Find locus of distance from points, lines, two lines
- Construct perpendiculars from points, lines, angles
- Identify congruence
- Identify congruent triangles

Keywords

Protractor: piece of equipment used to measure and draw angles

Locus: set of points with a common property

Equidistant: the same distance

Discorectangle: (a stadium) — a rectangle with semi circles at either end

Perpendicular: lines that meet at 90°

Arc: part of a curve

Bisector: a line that divides something into two equal parts

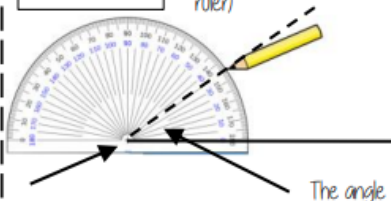
Congruent: the same shape and size

Draw and measure angles

R

Draw a 35° angle

Make a mark at 35° with a pencil
And join to the angle point (use a ruler)



Make sure the cross is at the end of the line (where you want the angle)

Scale drawings

R

A picture of a car is drawn with a scale of 1:30

For every 1cm on my image is 30cm in real life

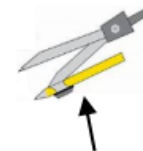
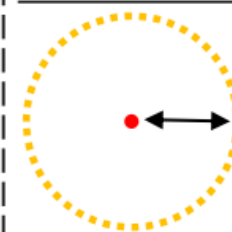
The car image is 10cm

Image : Real life
1cm : 30cm
 $\times 10$ \leftarrow 10cm : 300cm \leftarrow $\times 10$



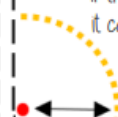
Locus of a distance from a point

All points are equidistant (the same distance) from the fixed point in the middle.



Equipment needed
The radius is the distance from the fixed point

If the point is in the corner it can only make a quarter circle



Maths

Locus of a distance from a straight line

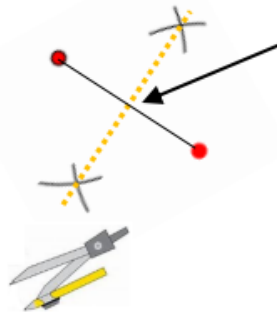


The ends of the line are fixed points



Equipment needed
The line is straight so a ruler is used for the straight lines parallel to your original line

Locus equidistant from two points



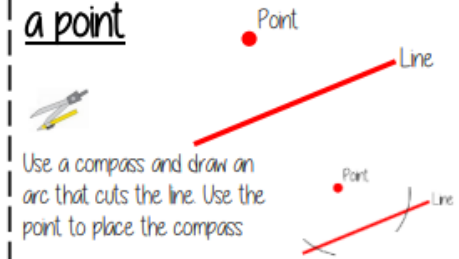
Also a perpendicular bisector
Because if the points are joined, this new line intersects it at a 90°



Join the intersections with a ruler.
All points on this line are equidistant from both points

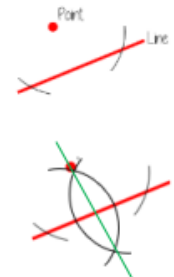
Keep the compass the same size and draw two arcs from each point

Construct a perpendicular from a point



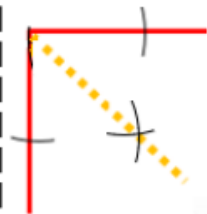
Use a compass and draw an arc that cuts the line. Use the point to place the compass

Keep the compass the same distance and now use your new points to make new interconnecting arcs



Connecting the arcs makes the bisector

Locus of a distance from two lines



Also an angle bisector
This cuts the angle in half

From the angle vertex draw two arcs that cut the lines forming the angle

Keep the compass the same size and use the new arcs as centres to draw intersecting arcs in the middle



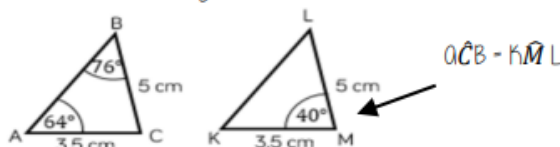
Join the vertex to the intersection

Congruent figures



Congruent figures are identical in size and shape – they can be reflections or rotations of each other

Congruent shapes are identical – all corresponding sides and angles are the same size



Because all the angles are the same and $AC = KM$ $BC = LM$ triangles OBC and KLM are **congruent**

Congruent triangles

Side-side-side

All three sides on the triangle are the same size

Angle-side-angle

Two angles and the side connecting them are equal in two triangles

Side-angle-side

Two sides and the angle in-between them are equal in two triangles (it will also mean the third side is the same size on both shapes)

Right angle-hypotenuse-side

The triangles both have a right angle, the hypotenuse and one side are the same

Constructing Triangles

Link to steps **R**

Side, Angle, Angle



Side, Angle, Side



Side, Side, Side



Year 9

Physical Education

Term 2

7

Agility:

The ability to change direction quickly and under control.

Test: Illinois agility test, involving a timed course of sharp turns and sprints.

Sport Example: Netball, rugby, and tennis all require players to dodge opponents or change direction



8

Balance:

The ability to maintain the body's position, either static (still) or dynamic (moving).

Test: Stork stand test, where students balance on one leg with the other foot on the knee and hands on hips.

Sport Example: Gymnastics, skiing, skateboarding, and yoga all need good balance.



9

Coordination:

The ability to use two or more body parts together smoothly and effectively.

Test: Wall toss test, where students throw a ball against a wall and catch it with the opposite hand as many times as possible in 30 seconds.

Sport Example: Tennis (hand-eye coordination), cricket catching, and basketball passing all need good coordination.



10

Reaction Time:

The time taken to respond to a stimulus.

Test: Ruler drop test, where a ruler is dropped and the student catches it as quickly as possible.

Sport Example: Sprint starts in athletics, goalkeeping in football, and receiving a serve in tennis.



11

Body Composition:

The ratio of body fat to lean body mass (muscle, bone, water).

Test: Skinfold callipers (pinch test) or BMI (Body Mass Index) calculation.

Sport Example: Sumo wrestlers may have higher body fat, while marathon runners aim for lower fat and more lean muscle.



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Skill-Related Fitness:

Fitness components like **agility, balance, coordination, power, reaction time, and speed** that enhance performance in sport. These are essential for **sport-specific skills** such as dribbling, passing, sprinting, or changing direction.

Example: Footballers need speed and agility to avoid tackles and react quickly to play.








Components of Fitness



Science

Science

Keywords

	Hazard	Anything that has the potential to cause harm or damage
	Risk	The harm or damage that could be caused by a hazard
	Accuracy	The closeness of a measurement to its true value
	Precision	How close measurements are to each other
	Reliable	Similar data can be reproduced under same conditions

Scientific Method

Hypothesis: What you predict will happen, based on prior knowledge e.g. As X increases, Y will increase because.....

Independent Variable: The thing that is being changed

Dependent Variable: The thing that is being observed/measured

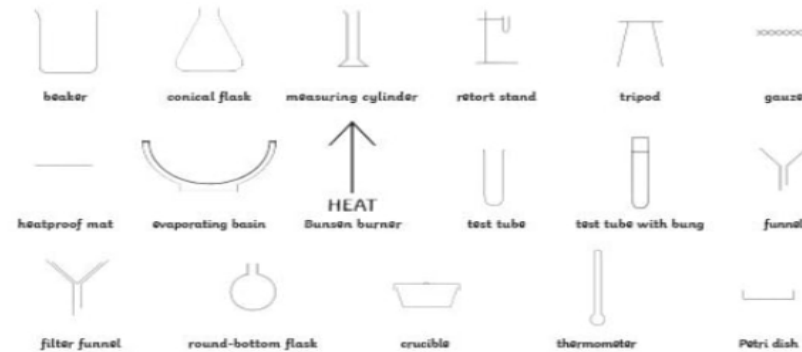
Control Variables: All the things that are being kept the same e.g. volume, concentration, mass, time

Method: Step by step instructions of how to change the independent variable, measure the dependent variable, control all other variables, repeat measurements, perform calculations on collected data

Conclusion: What have you found out? Was your hypothesis correct? Does your data support your hypothesis? Explain the results using scientific knowledge

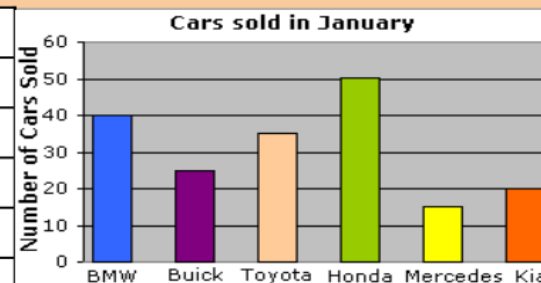
Evaluation: How reliable is your data (could someone follow your method and collect a similar set of results)? Are there anomalies? How could you make it more reliable?

Drawing Scientific Diagrams

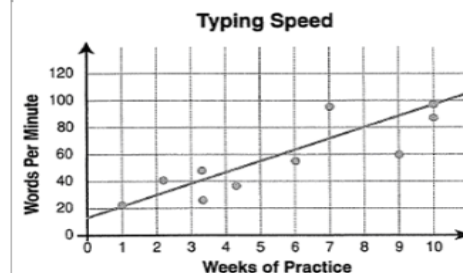


Presenting Data in a Graph

S	Scale
P	Pencil & ruler
A	Axis
T	Title
U	Units
L	Line of best fit if appropriate
A	Accuracy



Bar Graph:
Categoric/Discrete data



Line Graph:
Continuous data

Models of the atom:

SOLID SPHERE MODEL



JOHN DALTON



PLUM PUDDING MODEL



J.J. THOMSON



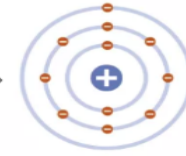
NUCLEAR MODEL



ERNEST RUTHERFORD



PLANETARY MODEL



NIELS BOHR



Discovered electrons

Discovered nucleus

Discovered energy levels

Key definitions:

Molecule: 2 or more atoms bonded together

Element: Substance made of 1 type of atom

Solution: A mixture of a liquid (solvent) and a soluble solid (solute)

Compound: Substance made from 2 or more types of atom bonded together

Isotopes: 2 atoms with the same number of protons and different numbers of neutrons

Mixture: 2 or more substances in the same place but not bonded together

Separating mixtures:

Filtration: Separates an insoluble solid from a liquid

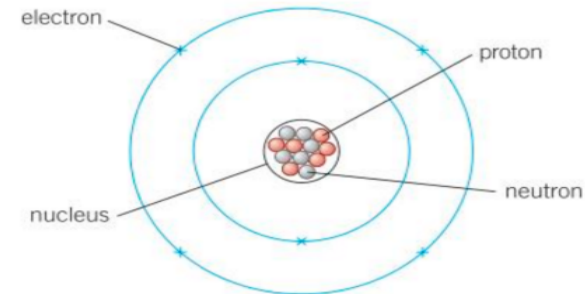
Crystallisation: Separating the solute (dissolved solid) from a solution

Distillation: Separates the solvent (liquid) from a solution

Fractional distillation: Separates miscible liquids because they have different boiling points.

Chromatography: Separates soluble substances using a solvent

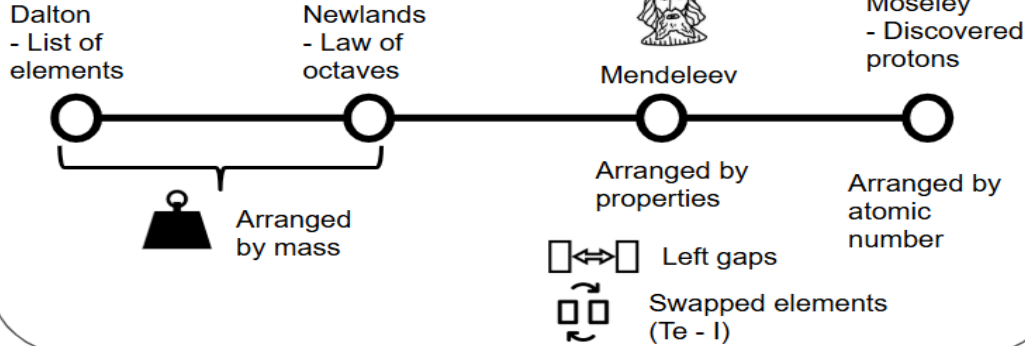
Structure of the atom:



Subatomic particle	Relative charge	Relative mass	Location
Proton	+	1	Nucleus
Neutron	nil	1	Nucleus
Electron	-	Almost 0	Orbiting the nucleus

Science

Development of the Periodic table



Arrangement of the Periodic table

Ordered by atomic number

The majority of the elements are metals

- Metals react to form positive ions.
- Non-metals react to form negative ions.

Groups - Same electrons in outer shell (have similar chemical properties)

Periods - Same number of shells

Group 1 - Alkali metals

Li
Na
K
Rb
Cs

More reactive down group

Because:
More electron shells

Outer shell electron easier to remove

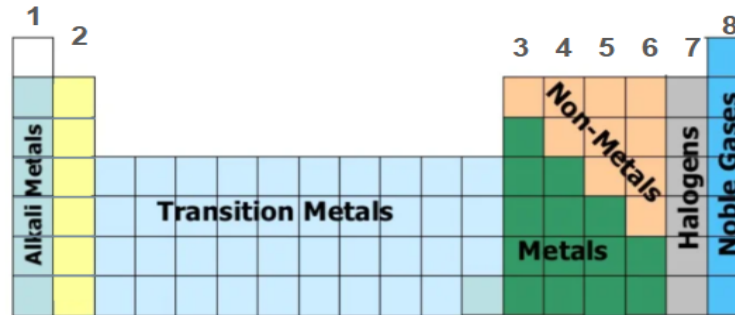
Alkali metals have characteristic properties because of the single electron in their outer shell.

- Alkali metal + water → alkali metal hydroxide + hydrogen
- Alkali metal + chlorine → Alkali metal chloride
- Alkali metal + oxygen → Alkali metal oxide

Transition Metals

Good conductors of electricity, hard and strong, high density, high melting points

Many transition elements have ions with different charges, form coloured compounds and are useful as catalysts.



Group 0 - Noble gases

He
Ne
Ar
Kr
Xe



Unreactive

Full outer shell

Group 7 - Halogens

F
Cl
Br
I
At

Less reactive down group

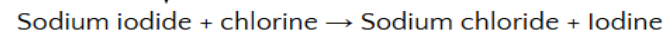
Because:
More electron shells





Harder to gain electron




Displacement


More reactive halogen displaces less reactive



State	Arrangement	Movement	Internal Energy
Solid 	Fixed shape and volume. <u>Cannot</u> be compressed	Vibrate about a fixed position	Low  High
Liquid 	Fixed shape but can flow. <u>Cannot</u> be compressed	Move around each other	
Gas 	Expands and <u>can</u> be compressed	Move quickly in random directions	

Types of change:



 **Chemical change** When chemical reactions change the bonding of reactants. **New** chemical elements or compounds are formed.

 **Physical change** In a physical change, a substance changes physical state, **No new** substances are formed.

Internal Energy


"The total amount of kinetic energy and potential energy of all the particles in the system."

So internal energy depends on:

-  Kinetic energy of particles = temperature
-  Bonds between particles = state

Remember (C7):


- Breaking bonds means the substance takes in energy
- Making bonds releases energy

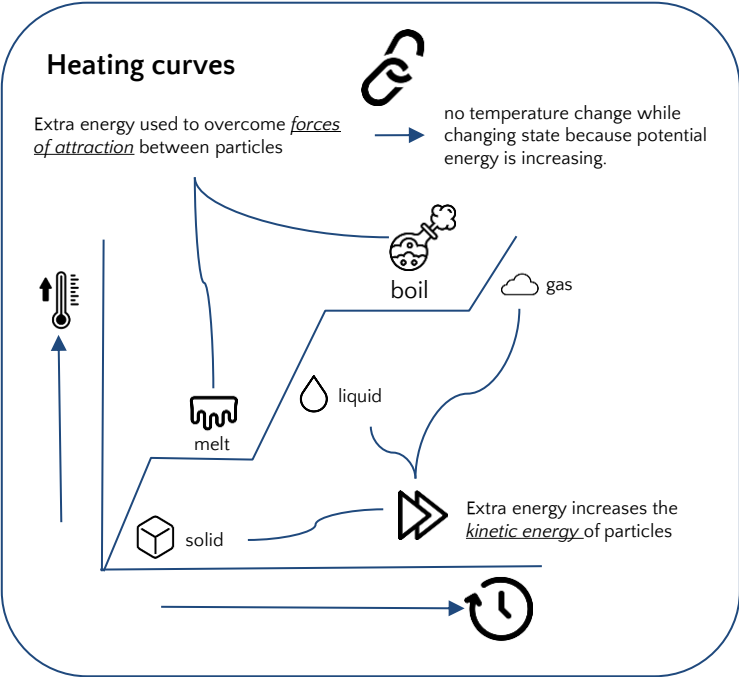
 **Gas Pressure**


Caused by particles colliding with the walls of a container.

Pressure depends on:

- **frequency** of collisions
- **energy transferred** by each collision

 As temperature increases the kinetic energy rises and the particles collide with the container harder and more often increasing pressure.



 **Density**

"Mass per unit volume"

It tells us how tightly matter is packed together.


Density = Mass/volume

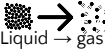
$\rho = m/v$

Units = kg/m³

Specific Latent Heat

Energy required to change the state of 1kg of a substance

 L_f - Specific latent heat of fusion

 L_v - Specific latent heat of vaporisation

Energy = mass (in kg) x specific latent heat(J/kg)

$E = mL_v$ (or f)

P7 Radioactivity

Keywords	
Ion	The charged particle produced when an atom gains or loses electrons.
Ionising power	The ability of a radiation to create ions.
Ionised	When atoms in a substance exposed to radiation lose electrons and become ions.
Penetrating power	The ability of radiation to pass through substances
Irradiated	A substance which has been exposed to radiation but is not made radioactive.
Radioactive contamination	When radioisotopes are transferred to an object making it radioactive
Half-life	The time it takes for either the number of radioactive nuclei in a sample to halve or the activity to fall to half of its original value.
Activity	The number of radioisotopes that decay per second. 1 count per second = 1 Becquerel (Bq)
Count rate	Number of counts per second

Type	Ionising Power	Range in air	Effect of electric field
Alpha, α	High	About 5cm	Attracted towards -ve plate
Beta β	Medium	About 1m	Attracted to +ve plate
Gamma	Low	Infinite	Unaffected

Type	What is it?	Charge	Relative Mass	What will stop it?	Where do we use it?
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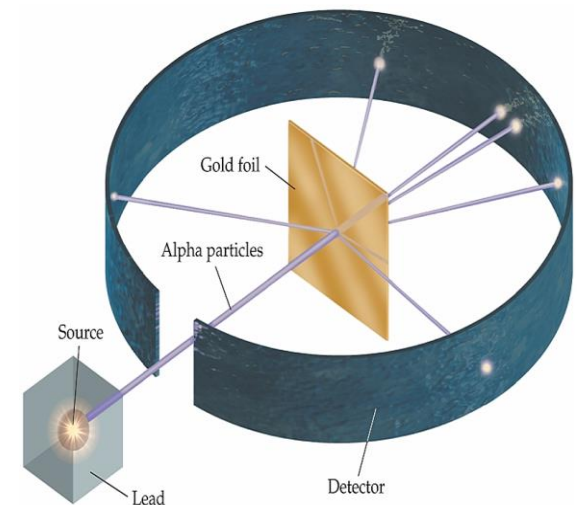
alpha α	Helium nucleus	+2	4	A few cm of air or a sheet of paper	Fire Alarms
beta β	Fast moving electron	-1	Almost zero	5mm aluminium or 3mm of lead	Medical tracers measuring thickness of foil Detecting leaks in pipes
gamma γ	EM wave	nil	zero	Thick lead (several cm) or	Killing bacteria on food

Rutherford's Scattering Experiment

Ernest Rutherford fired positively charged alpha particles at a thin piece of gold foil in an experiment which led to the rejection of the plum pudding model of the atom.

The three main conclusions were:

- 1) Because the majority of alpha particles passed through the foil, most of the atom is empty space.
- 2) Because some of the alpha particles deflected there must be a small positively charged region inside the atom.
- 3) Because alpha particles are fast moving, the positively charged region must have a large mass to stop and repel them.



Keywords

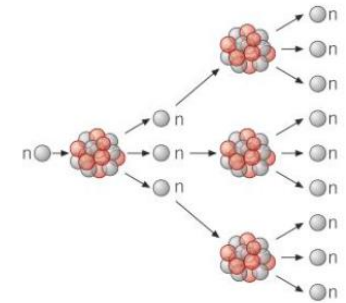
Radioactive tracer	These contain radioactive isotopes used to trace the flow of substances through an organ.
Nuclear fission	The splitting of a large nuclei into two smaller nuclei.
Chain reaction	Fission reaction where fission neutrons go on to cause further fissionable nuclei to split.
Moderator	Substance in a nuclear reactor that slows down fission neutrons.
Nuclear fusion	A process where two smaller nuclei fuse together to form a larger nuclei, converting mass into energy.

P7 Radioactivity

Nuclear Fission

When a nucleus undergoes fission it releases:

- Two or three neutrons
- Energy, in the form of gamma radiation, plus the kinetic energy stored in the fission neutrons and the fragment nuclei.

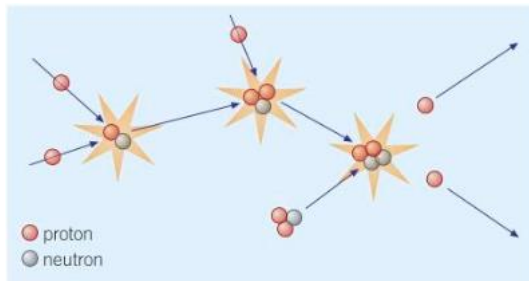


Nuclear Fusion

During nuclear fusion some of the mass from the two small nuclei is converted into energy. Some of this energy is released as nuclear radiation.

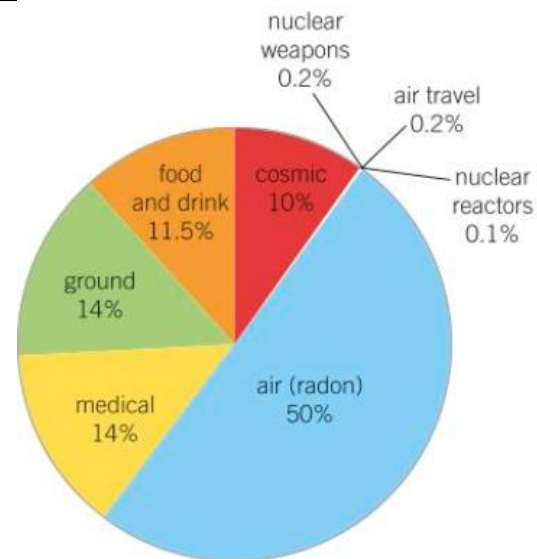
Nuclear fusion in the sun only happens with nuclei of a relative mass of no more than 55, the same as an iron nucleus.

To produce bigger nuclei energy must be supplied.

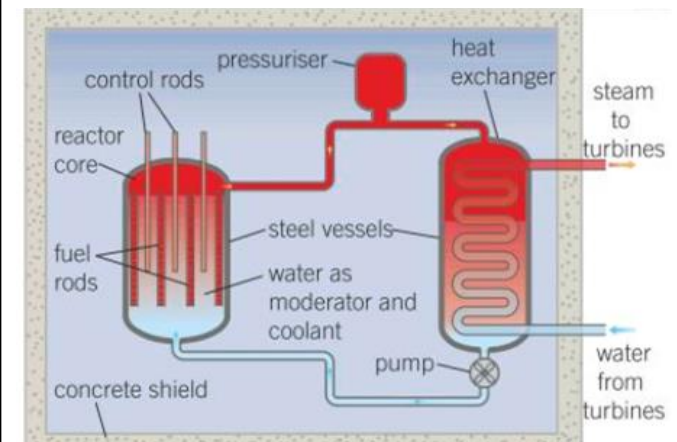


Fusion reactions in the Sun

Background Radiation



A Nuclear Reactor



Nuclear waste

Nuclear fuel rods continue to emit heat and nuclear radiation long after a fission reactor has been turned off. They are stored in water to cool then processed to remove unused fuel, which can be made into new fuel rods. Radioactive waste is often stored underground to shield the radiation.