



HOUSTONE
SCHOOL

Year 9 – 100% Book Term 1 - 2022

NAME	
FORM GROUP	



The Science of Learning

How to do Retrieval Practice

1. Study the material you are trying to learn first. Take about 20 minutes the first time BUT this will get less and less each time as you get to know the material.

You can study the material by;

- Reading it again, over and over
- Look/cover/write/check
- Creating flashcards that you test yourself on

2. Pick up and use a **black pen**.

Put away all the answers and test yourself writing everything you remember in the blank spaces provided. Do not cheat!

3. Now pick up and use a **green pen**.

Check your answers:-

- Tick all of your correct answers
- Amend any incorrect answers (even if they are slightly wrong)
- Fill in any blank spaces with the correct answer copying the answer word for word
- Check all spellings are correct

4. Repeat the process as many times as you need to, pay special attention to your previous green pen answers (as these are the bits you need to learn!)

5. *Tip:- Lay blank pieces of paper over the answers in order to re-use the quiz again and again*

Tip: - Even if you think you know it test yourself a week or so later to check you do.

Tip: - Do not leave it until the last minute – do some every week in the summer holidays (this is called Spaced Practice)

Tip: - Once you think you know it test yourself on everything AGAIN

Retrieval practice feels hard but it is a really effective way to learn and commit knowledge to long term memory!



KNOWLEDGE ORGANISER

Art & Design

Year 9 – 2D Studies (Half Term 1)

Topic: Toys and Games

Prior Learning Check

- Understanding of colour theory: colour wheel, cool/warm, harmonious/complementary
- How to use a pencil to create tonal range and surface (texture)
- Use of contour lines to suggest 3D form
- How to use symmetry to scaffold drawing
- How to use asymmetry to compose imagery
- How to describe artworks using the Formal Elements

Key Knowledge

DEVELOP ideas: AO1

You will learn:

- The role of the Renaissance in shaping Western art traditions.
- The principles of Linear Perspective.
- About Photo-realists and/or Cubist artists.
- To develop existing skills with comparative and recount/report writing.

EXPLORE ideas: AO2

You will learn to:

- Compose using cut-off, scale and the Rule of Thirds for spatial and pleasing effect.
- To render with pencil, biro and colouring pencil

RECORD ideas: AO3

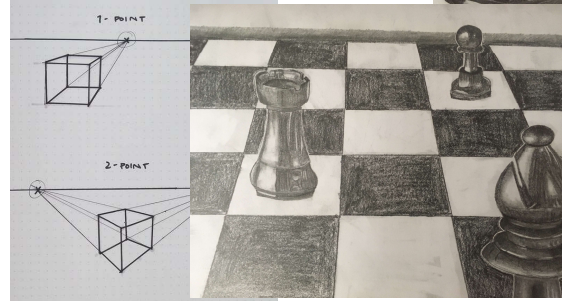
You will study approaches to drawing and painting which focus on:

- How to create illusion of depth on a flat surface, using linear perspective.
- How to suggest form and depth through tonal and chromatic blending.
- How to record thoughts/observations in annotation.

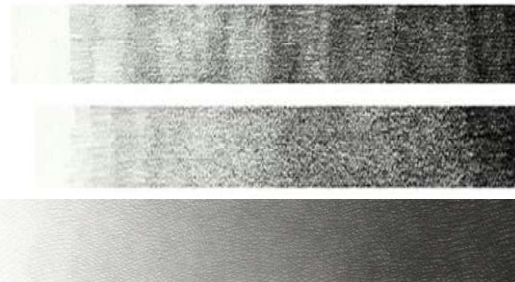
PRESENT ideas: AO4

- Create a pleasing composition using Compositional principles of asymmetry –Rule of Thirds.

POSSIBLE OUTCOMES: examples of excellence

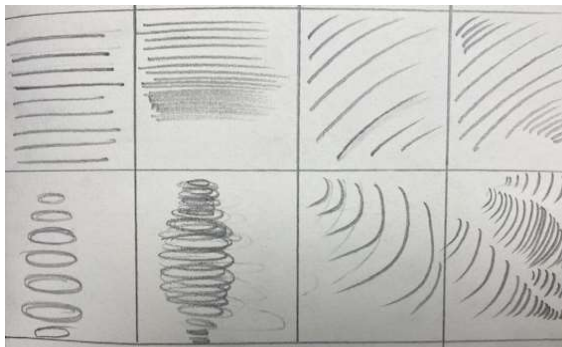


Motor Skills 1: Tonal Gradients



Controlling pressure, layering and mark to create seamless transitions between tone without smudging

Motor Skills 2: Form and Contour Gestures



1. Linear Perspective

The technique of creating an illusion of depth by using vanishing points and converging lines. Invented by Italian architect Brunelleschi in the early 1400s

2. Renaissance (1400-1600)

A period of cultural rebirth in Europe that marks the transition from the Middle Ages to modernity. Without the Renaissance, Europe would never have the rich culture that it has now.

3. Cubism

An early 20th century movement in which multiple vantage points were used to fracture images into geometric forms and subvert traditional ideas of depth.

4. Photorealism (1960s-present)

A movement which employs an extremely realistic style of painting or drawing, in which the artwork is based entirely on a photograph

5. Tone

The lightness or darkness of colour. This can be used to suggest 3D form.

6. Render

The process of creating the effects of light, shade and light source to achieve contrast in drawings

7. Contour

Lines that are used to define the shape or form of an object

COMPUTER SCIENCE 1

What is a computer?	
1. Computer	A computer is a device that takes an input does something with it (a process) and produces an output .
2. Input	Data sent to a computer for processing
3. Output	Data that a computer sends out normally through a screen or speakers.
4. Hardware	The physical components of a computer e.g. monitor, hard drive, mouse
5. Software	Installed on computer hardware. Something that cannot be touched. E.g. Chrome, Word, video games
6. Application software	Software that helps the user complete a specific task e.g. write a letter
7. System software	System software: software that helps the computer to run e.g. antivirus

Main memory	
19. Memory	Used to store instructions for the CPU to execute (<i>it is not the same as storage!</i>)
20. RAM	Random Access Memory. Stores currently running instructions and data ready for a CPU to execute.
21. ROM	Read Only Memory. Stores permanent instructions that tell a computer how to 'boot up'.
22. Volatile	Data is lost when the power is switched off.
23. Non-volatile	Does not lose memory when the power is switched off.
24. Cache	Memory located close to the CPU. Saves frequently used instructions and data, so they are quickly available for the CPU.

CPU	
8. CPU	Central processing unit. Where processes such as calculating, sorting and searching take place.
9. Von Neumann architecture	Data and instructions are both stored together in primary memory.
10. Control unit	The control unit runs the show. It understands the instructions and tells the other components what each instruction needs from them.
11. Arithmetic logic unit (ALU)	The ALU is the calculator of the CPU. It handles mathematical and logical operations that are required as part of an instruction.
12. Clock	Used to regulate the number of cycles carried out per second, and synchronise the other components.
13. Registers	Very small, very fast memory locations located inside the CPU.
14. Buses	A CPU bus is a set of parallel wires that transport data between the components inside the processor and memory.
15. FDE cycle	The Fetch-Decode-Execute cycle is how the CPU processes instructions.
16. Fetch	Each instruction is the fetched in order from main memory.
17. Decode	This is the process the control unit uses to work out what the other components need to do.
18. Execute	The instruction will be carried out.


COMPUTER SCIENCE 2

Secondary storage	
25. Capacity	The amount of data that can be stored e.g. measured in bits, bytes, megabytes, gigabytes
26. Storage vs memory	Storage has higher capacity, is more robust, cheaper and more portable
27. Storage units	Bit: smallest unit. A single 1 or 0 Byte: 8 bits Kilobyte (Kb): 1000 bytes Megabyte (Mb): 1000 kb Gigabyte (Gb): 1000 mb Terabyte (Tb): 1000 gb

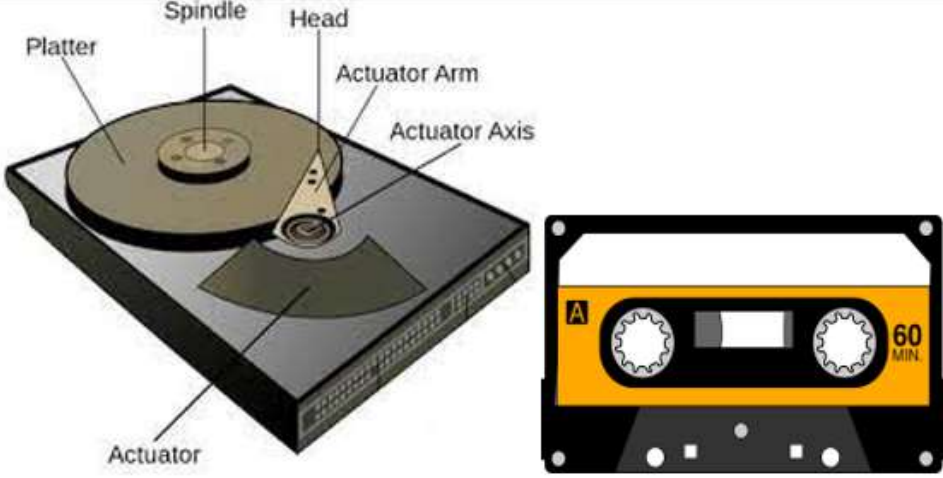

Examples of how large files are:

File type	Typical size	Quantity a 1 gigabyte USB memory stick could hold
Word processed document	50 kilobytes	1 gigabyte = 1,000 megabytes, 1000 megabytes = 1,000,000 kilobytes, $1,000,000 / 50 = 20,000$ word processed files
Image file	100 kilobytes	1 gigabyte = 1,000 megabytes, 1000 megabytes = 1,000,000 kilobytes, $1,000,000 / 100 = 10,000$ image files
Video file	100 megabytes	1 gigabyte = 1,000 megabytes, $1,000 / 100 = 10$ video files

Secondary storage types:

Type of storage	What does it look like?	Capacity	Read/write speed	Cost	Robust and portable?
<p>Solid state (also known as flash storage).</p> <p>Most commonly used in portable devices, but now more frequently in desktop PCs.</p>	 <p>Solid-state drive (SSD) Inside a solid-state drive (SSD). USB memory stick</p>	<p>Smaller than magnetic. E.g. solid-state drive: 120gb-1tb</p>	<p>Fast</p>	<p>Expensive</p>	<p>Yes, no moving parts</p>

COMPUTER SCIENCE 3

<p>Magnetic storage.</p> <p>Most commonly used inside desktop PCs.</p>		<p>Large e.g. 1-10tb</p>	<p>Slower</p>	<p>Cheap</p>	<p>No, there are moving parts</p>
<p>Optical storage</p> <p>Most commonly used to distribute media e.g. video, games, music. Used less nowadays.</p>	 <p>Compact Disc (CD). DVD. Blu-Ray</p>	<p>Small.</p> <p>CD: 700mb</p> <p>DVD: 4.7gb</p> <p>Blu-Ray: 25-50gb</p>	<p>Faster than magnetic, slower than solid-state</p>	<p>Cheap</p>	<p>No, there are moving parts</p>

ENGLISH 1

Key Stage 3 English Terms

Term	Definition
1. Alliteration	The repetition of the same consonant sound, especially at the beginning of words.
2. Allusion	A reference to another event, person, place or work.
3. Ambiguity	Use of language where the meaning is unclear or has two or more possible meanings or interpretations.
4. Anaphora	Repetition at the start of a sentence or statement (Shylock's "Hath not a Jew...").
5. Antithesis	Opposites - direct contrast: "I had sworn thee fair and thought thee bright/ Who art as black as Hell as dark as night".
6. Aposiopesis	"***** is when..." Cutting off before a line is finished. Greek for 'becoming silent'. Eric cuts himself off in An Inspector Calls. ERIC: (eagerly) Yes I remember...(but he checks himself)
7. Assonance	Similar vowel sounds occurring together: Spoon the fool's food.
8. Caesura	A break in a line of verse, usually following enjambment (think of 'caesarean' or cut)
9. Chiasmus	a rhetorical or literary figure in which words, grammatical constructions, or concepts are repeated in reverse order. (Fair is foul and foul is fair)
10. Colloquial	Ordinary everyday speech and language (slang or dialect)
11. Connotation	An implied meaning
12. Dramatic Irony	When the audience knows something the characters on stage do not (Birling saying how great The Titanic is in An Inspector Calls)
13. Dactylic Metre	(In poetry) One stressed followed by two unstressed syllables. Used by Tennyson in "Charge of the Light Brigade": "On with- the Light Brig-ade/ For-ward the Light Brig-ade". Here it sounds like horses galloping. (Note: This is the only poem in our anthology to use this form of metre.)
14. Direct Address	When the writer speaks directly to the reader.
15. Enjambment	(in verse only) A line of verse that flows on into the next line without a pause. . "One summer evening (led by her) I found / A little boat..."
16. Foreshadowing	A hint of what is to come - Marley's face on the door knocker in A Christmas Carol.
17. Hamartia	The fatal flaw in a character
18. Hyperbole	Exaggeration (usually for comic effect)
19. Iambic Pentameter	10 syllables - Unstressed followed by stressed TeDUM TeDUM TeDUM TeDUM TeDUM
20. Imagery	The use of words to create a picture or "image" in your head. "The ***** in Blake's 'London' is dark".
21. Internal rhyme	Rhyming words within a line (rather than at the end of lines).
22. Irony	At its simplest level, it means saying one thing while meaning another, usually for humour. Not as harsh as sarcasm.
23. Juxtaposition	Placing two contrasting ideas/statements/things near each other in order to compare and contrast. It is different to oxymoron.
24. Metaphor	Direct comparison saying one thing IS another (not 'like').
25. Metonymy	refers to using one thing to describe something related to it, such as referring to the monarchy as simply "the crown," or religious institutions as "the church".
26. Metre (or Meter)	The regular use of unstressed and stressed syllables in poetry (iambic pentameter and dactylic for example).
27. Narrative	A piece of writing that tells a story.
28. Onomatopoeia	Words which sound like the things they are describing: "bang", "crash", "squelch" etc.
29. Oxymoron	Two things which are generally incompatible put together, like "bitter sweet". Not to be confused with juxtaposition.
30. Pathetic fallacy	When surroundings or weather reflect the inner mood of a character or event (Frankenstein's stormy night)
31. Pathos	The effect in literature which makes the reader feel sadness or pity.
32. Personification	Giving living (not necessarily 'human') attributes to inanimate or non-human things - is a type of metaphor. "Time must untie this knot".
33. Plot	The sequence of events in a poem, play, novel or short story that make up the main storyline.
34. Point of View	perspective from which we hear what is happening.

ENGLISH 2

35. Protagonist	The main character.
36. Pun	A play on words: "Time must untie this knot, not I..." (Shakespeare's Twelfth Night).
37. Rhyme scheme	The pattern of rhymes in a poem.
38. Rhythm	The beat as created through the meter
39. Satire	The highlighting of human foolishness making fun of them. Satire can range from being gentle and light to extremely biting and bitter in tone.
40. Simile	Direct comparison using like or as.
41. Soliloquy	Speech delivered directly to the audience (particularly in Shakespeare) in which the character says they are thinking and feeling.
42. Sonnet	A fourteen-line poem, usually with 10 syllables in each line ("Ozymandias").
43. Stanza	The blocks of lines into which a poem is divided - a 'verse'
44. Statistics	(in non-fiction) facts and figures
45. Structure	The way a poem or play or other piece of writing has been put together
46. Symbol	Like the use of images, symbols present things which represent something else.
47. Synecdoche	Replacing a whole of a thing by a part. "All hands' on deck"
48. Syntax	Refers to the way in which words are placed together in writing.
49. Volta	(Italian: "turn") the turn in thought in a sonnet that is often indicated by such initial words as But, Yet, or And yet. the **** occurs between the octet and sestet in a Petrarchan sonnet and sometimes between the 8th and 9th or between the 12th and 13th lines of a Shakespearean sonnet

Sentences Types and Parts of Speech

Term	Definition
50. Simple sentences	A simple sentence is one main clause with a full stop.
51. Compound sentences	A compound sentence consists of at least two main clauses joined together by a conjunction.
52. Complex sentences	A complex sentence consists of a main clause plus one or more subordinate clauses.
53. Interrogative sentences	Essentially, a question (think of interrogate). Can be a Sentence or a word. "What?"
54. Declarative sentences	Simply statements that relay information.
55. Imperative sentences	Used to issue a command or instruction, make a request, or offer advice.
56. Adverb	Adds information to a verb.
57. Determiner	A word placed in front of a noun to specify quantity (e.g., "one dog," "many dogs") or to clarify what the noun refers to (e.g., "my dog," "that dog," "the dog")
58. Verb	A doing word (ran), or a state of being (is , was)
59. Noun	Labels person, place or thing
60. Adjective	Describes a noun
61. Preposition	Shows relation of one thing to another - on, at, in, by
62. Conjunction	Joins word and clauses: 'and' 'so' 'where' etc.
63. Present Participle	Verb ending in 'ing': Walking, talking and jumping and so on
64. A concrete noun	a noun you can experience physically with your senses.
65. An abstract noun	an idea of something. You cannot experience it physically with your senses.
66. A proper noun	the specific name of something, and always needs a capital letter.
67. A common noun	a noun that is not a proper noun (all the rest). It does not need a capital letter.
68. Active verb	A doing verb expresses an action
69. Stative verb	A being verb expresses states of being, thoughts and feeling;
70. An auxiliary verb	a helping word that the main verb needs to be complete.
71. An adjective	a word that describes a noun.
72. A preposition	a word that is used before a noun, a noun phrase, or a pronoun, showing relationship.
73. A prepositional phrase	the combination of a preposition followed by a noun or pronoun "...on the table."

Geography – Map Skills Knowledge Map and Retrieval Practice

1. **Atlases** are a book of maps and charts, they show us maps on a global scale, with information about each country in a series of charts.

2. If we want more detailed maps, then we wouldn't use an atlas, we would use **ordnance survey maps**. Ordnance survey maps are highly accurate, with a scale of 1:200 or 1:500.

3. Ordnance survey maps contain a wide range of information for the map reader to use. These maps contain,

- Symbols,
- Grid References,
- Compass Rose,
- Scale & Distance,
- Contour Lines



4. **Symbols** show the reader what a building or what a point of interest might be.

5. **Grid references** show a location with a series of vertical and horizontal grid lines, identified by numbers or letters. Grid references can be either 4 figure or 6 figure.

6. **The compass rose** shows directions on a map. There are primary directions (north, south, east, west). There are secondary directions (north east, north west, south east, south west)

7. **Scale** is a ratio between distance on a map and distance in real life. For example, 1cm on the map might equal 1 mile on the map. **Distance** is the space between 2 points, either on a map or in real life.

Map Skills Key Terms

1. Map	A visual representation of land or sea showing physical and human features, such as mountains, towns and cities.
2. Atlas	A book of maps and charts.
3. Symbol	A visual representation of a building or a point of interest used on a map.
4. Compass Rose	Printed on a map showing the compass directions.
5. Grid Reference	A map reference indicating a location in terms of a series of vertical and horizontal grid lines identified by numbers or letters.
6. Contour Lines	Lines on a map joining points of equal height.
7. Scale	Ratio between distance on a map and distance on the ground.
8. Distance	The length of space between 2 points.
9. Ordnance Survey	Create highly accurate maps, they use a 1:200 or a 1:500 scale on their maps.
10. Hemisphere	Half a sphere, in this case, the globe. There is the northern, southern, eastern, and western hemispheres.

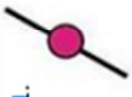



















































Retrieval Practice Questions

Retrieval Practice Questions	Answers
1. Name 3 features a good map should have.	A key, a scale, detailed features.
2. Name the 3 types of bearings found on a compass rose.	Primary, secondary, and tertiary bearings
3. Name the primary bearings found on a compass rose.	North, East, South, West
4. Name the secondary bearings found on a compass rose.	North East, North West, South East, South West
5. Name the tertiary bearings found on a compass rose.	North North East, East North East, East South East, South South East, South South West, West South West, West North West and North North West.
6. A completed compass rose has how many points?	16
7. Name the scale used for OS Explorer Maps.	1:25,000
8. Name the scale used for OS Landranger Maps.	1:50,000
9. What does the abbreviation, OS stand for?	Ordnance Survey
10. Which type of map is better for walking?	Explorer because it is more detailed

GEOGRAPHY 1

GEOGRAPHY 2

OS Map Symbols

1. 	2. 	3. 	4. 	5. 	6. 	7. 
8. 	9. 	10. 	11. 	12. 	13. 	14. 
15. 	16. 	17. 	18. 	19. 	20. 	21. 
22. 	23. 	24. 	25. 	26. 	27. 	28. 
29. 	30. 	31. 	32. 	33. 	34. 	35. 
36. 	37. 	38. 	39. 	40. 	41. 	42. 
43. 	44. 	45. 	46. 	47. 	48. 	49. 
50. 	51. 	52. 				

Year 9 knowledge organizer

History of Britain timeline

Before 2500BC	Stone Age (Paleolithic, Mesolithic, Neolithic)
2500-800BC	Bronze Age Britain
800BC-43AD	Iron Age Britain
43-410AD	Roman Britain
410-1066	Early medieval (Anglo-Saxon and Viking) Britain
1066—1500	Medieval Britain
1500-1714	Early modern Britain
1714-1900	Industrial (Georgian and Victorian) Britain
1900-2000	Twentieth-century Britain

HISTORY 1

HISTORY 2

Who fought in the First World War: core knowledge

1) Timeline

- 1914-1918: First World War
- 1914: Battle of Mons; Battle of the Marne; First Battle of Ypres
- 1915: Second Battle of Ypres; first use of poison gas
- 1916: Battle of Verdun; July-Nov Battle of the Somme; conscription introduced
- 1917: Battle of Arras; 3rd Battle of Ypres, including Battle of Passchendaele; Battle of Cambrai;
- 1918: German Spring Offensive; Hundred Days' Offensive by Allies, including Battle of Amiens, drives Germany back
- 11th November 1918: armistice day

Key terms

- 1) **Empire:** countries ruled by another country e.g British Empire- countries ruled by Britain
- 2) **Western Front:** area of northern France and Belgium where British and French troops fought Germans in trenches. Most of the fighting took place here.
- 3) **India:** The country in the British Empire that contributed the most troops, after Britain
- 4) **Alliance:** an agreement between two or more countries to work together
- 5) **Ally:** a country that has agreed to give help to another
- 6) **Central Powers:** Germany, Austria-Hungary and Turkey
- 7) **Allied Powers:** France, Britain and Russia
- 8) **Armistice:** agreement to stop fighting, ending the war
- 9) **Trench:** a ditch in the ground, dug and reinforced by soldiers, for protection

Weapons

- 10) **munitions:** weapons and ammunition
- 11) **U-boat:** German submarine
- 12) **artillery:** large guns (cannon), firing shells
- 13) **shells:** large ammunition fired by artillery
- 14) **rifle:** type of gun carried by most soldiers
- 15) **creeping barrage:** curtain of artillery fire ahead of advancing troops
- 16) **machine gun:** gun that fires bullets automatically and rapidly
- 17) **bayonet:** blade fitted to the end of a rifle



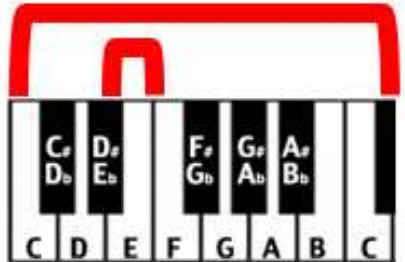
Individuals/ groups

- 18) **private:** an ordinary soldier, not an **officer general:** a senior commander in the army
- 19) **second lieutenant, captain, major:** junior officers, commanded small sections of the army
- 20) **Alhaji Grunshi:** the first British soldier to fire a shot in the war, in **West Africa**
- 21) **General Haig:** commander of British Expeditionary Force
- 22) **'Tommies':** informal word for ordinary British soldiers
- 23) **Pals Battalion:** battalion (section) of the army into which men were recruited with their friends, to encourage them to enlist
- 24) **WAAC** – Women's Army Auxiliary Corps, created in 1917 to allow women to serve in a supporting role in the army
- 25) **VAD** – Voluntary Aid Detachment, an organisation in which women could serve supporting nurses and medical staff

Armed forces

- 26) **recruit:** to persuade someone to join the army
- 27) **enlist:** to join the armed forces
- 28) **conscription:** made it compulsory for men aged 18-45 to join the army
- 29) **patriotism:** pride and devotion to one's country
- 30) **conscientious objector:** someone who refuses to fight because of their principles or beliefs
- 31) **casualty:** someone killed or wounded

MUSIC

<p>Keywords</p>	<p>1. Samba – an Afro-Brazilian style of music from Brazil, characterised by large ensembles, it features heavily in carnival celebrations.</p> <p>2. Tango – a Latin paired dance from Argentina.</p> <p>3. Ensemble – group of musicians</p> <p>4. Call and response – one musical phrase followed by another in response. The response can be the same as or different to the call.</p> <p>5. Cross rhythms – 2 different rhythms that conflict with each other simultaneously.</p> <p>6. Syncopation – off beat rhythm</p> <p>7. Unison – the same thing at the same time</p> <p>8. Ostinato – a short repeated pattern</p> <p>9. Percussion – a family of instruments that make a sound by hitting part of it, often with a beater, mallet or hand.</p> <p>10. Chromatic melody – notes moving in semitone steps</p> <p>11. Minor key - a set of notes that give a melancholy/ dark mood</p> <p>12. Octave – an interval of 8 notes.</p>
<p>Theory</p>	<p>Rhythm: Triplet Dotted</p>  <p>Bass clef:</p>  <p>C D E F G A B C D E F G A B C</p> 
<p>Listening</p>	<ol style="list-style-type: none"> 1. <i>Fanfarra - Cabua-Le-Le</i> by Sergio Mendes 2. <i>Samba de Janeiro</i> by Bellini 3. <i>Libertango</i> by Astor Piazzola 4. <i>Santa Maria</i> by Gotan Project 5. <i>Mundian de Bach Ke</i> by Panjabi MC 6. <i>Jai Ho</i> by A.R. Rahman

SCIENCE 1

CB1a Microscopes	
1. Eyeiece lens	The part of the microscope you look down.
2. Magnification	How much bigger something appears compared with its actual size.
3. Objective lens	The part of the microscope that is closest to the specimen.
4. Resolution	Smallest change that can be measured by an instrument. For example, in a microscope it is the smallest distance between two points that can be seen as two points and not blurred into one point.
5. Stain	A dye used to colour parts of a cell to make them easier to see.
CB1b Plant and Animal Cells	
6. Aerobic respiration	A type of respiration in which oxygen is used to release energy from substances, such as glucose.
7. Cell (surface) membrane	The membrane that controls what goes into and out of a cell. It is often called the cell surface membrane because eukaryotic cells contain other structures with membranes.
8. Cell sap	Liquid found in the permanent vacuole in a plant cell.
9. Cell wall	A tough layer of material around some cells, which is used for protection and support. It is stiff and made of cellulose in plant cells. Bacteria have a flexible cell wall.
10. Chlorophyll	The green substance found inside chloroplasts. It traps energy transferred by light.
11. Chloroplasts	A green disc containing chlorophyll, found in plant cells. Where the plant makes glucose, using photosynthesis.
12. Chromosome	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule.
13. Cytoplasm	The watery jelly inside a cell where the cell's activities take place.
14. DNA	A substance that contains genetic information. Short for deoxyribonucleic acid.
15. Eukaryotic	A cell with a nucleus is eukaryotic. Organisms that have cells like this are also said to be eukaryotic.
16. Field of view	The circle of light you see looking down a microscope.
17. Mitochondrion	A sub-cellular structure (organelle) in the cytoplasm of eukaryotic cells, where aerobic respiration occurs. Plural is mitochondria.
18. Nucleus	The 'control centre' of a eukaryotic cell.
19. Ribosome	Tiny sub-cellular structure that makes proteins.

20. Scale bar	A line drawn on a magnified image that shows a certain distance at that magnification.
21. Scientific paper	An article written by scientists and published in a science magazine called a journal. It is like an investigation report but usually shows the results and conclusions drawn from many experiments.
22. Vacuole	A storage space in cells. Plant cells have a large, permanent vacuole that helps to keep them rigid.
CB1c Specialised Cells	
23. Acrosome	A small vacuole in the tip of the head of a sperm cell, which contains enzymes.
24. Adaptation	The features that something has to enable it to do a certain function (job).
25. Adapted	If something has adaptations for a certain function (job), it is said to be adapted to that function.
26. Ciliated epithelial cell	A cell that lines certain tubes in the body and has cilia on its surface.
27. Cilium	A small hair-like structure on the surface of some cells. Plural is cilia.
28. Digestion	A process that breaks molecules into smaller, more soluble substances.
29. Diploid	Describes a cell that has two sets of chromosomes.
30. Egg cell	The female gamete (sex cell).
31. Embryo	The tiny new life that grows by cell division from a fertilised egg cell (zygote).
32. Enzyme	A substance that can speed up some processes in living things (e.g., Breaking down molecules).
33. Epithelial cell	A cell found on the surfaces of parts of the body.
34. Fertilisation	Fusing of a male gamete with a female gamete.
35. Gamete	A cell used for sexual reproduction.
36. Haploid	Describes a cell that has one set of chromosomes.
37. Microvillus	A fold on the surface of a villus cell. These folds increase the surface area so that digested food is absorbed more quickly. Plural is microvilli.
38. Oviduct	A tube that carries egg cells from the ovaries to the uterus in females. Fertilisation happens here.
39. Specialised cell	A cell that is adapted for a certain specific function (job).
40. Sperm cell	The male gamete (sex cell).

SCIENCE 2

CB1d Inside Bacteria	
41. Chromosomal DNA	DNA found in chromosomes but the term is often used to describe the large loop of DNA found in bacteria.
42. DNA	A substance that contains genetic information. Short for deoxyribonucleic acid.
43. Flagellum	A tail-like structure that rotates, allowing a unicellular organism to move. Plural is flagella.
44. Index	A small raised number after a unit or another number to show you how many times to multiply it by itself. For example, 10^3 means multiply 10 together 3 times ($10 \times 10 \times 10$).
45. Plasmid	A small loop of DNA found in the cytoplasm of bacteria.
46. Plasmid DNA	DNA found in plasmids.
47. Prokaryotic	A cell with no nucleus is prokaryotic. Organisms such as bacteria, which have cells like this, are also said to be prokaryotic.
48. Standard form	A very large or very small number written as a number between 1 and 10 multiplied by a power of 10.
CB1e Enzymes and Nutrition	
49. Biological catalyst	A substance found in living organisms that speeds up reactions (an enzyme).
50. Catalyst	A substance that speeds up the rate of a reaction, without itself being used up.
51. Digest	To break down large molecules into smaller subunits, particularly in the digestive system.
52. Monomer	A small molecule that can join with other molecules like itself to form a polymer.
53. Polymer	A substance made up of very long molecules containing repeating groups of atoms. (formed by joining monomer molecules together.)
54. Product	A substance formed in a reaction.
55. Substrate	A substance that is changed during a reaction.
56. Synthesis	To build a large molecule from smaller subunits.
CB1f Enzyme Action	
57. Active site	The space in an enzyme where the substrate fits during an enzyme-catalysed reaction.
58. Denatured	A denatured enzyme is one where the shape of the active site has changed so much that its substrate no longer fits and the reaction can no longer happen.

59. Lock-and-key model	Model that describes the way an enzyme catalyses a reaction when the substrate fits within the active site of the enzyme.
60. Specific	Where an enzyme only reacts with one kind of substrate.
CB1g Enzyme Activity	
61. Optimum pH	The pH at which an enzyme-catalysed reaction works fastest.
62. Optimum temperature	The temperature at which an enzyme-catalysed reaction works fastest.
CB1h Transporting Substances	
63. Active transport	The movement of particles across a cell membrane from a region of lower concentration to a region of higher concentration (<i>against</i> the concentration gradient). The process requires energy.
64. Diffusion	When particles spread and mix with each other without anything moving them. Diffusion into and out of cells occurs for particles that are small enough to pass through the cell surface membrane.
65. Concentration	The amount of a solute dissolved in a certain volume of solvent. Measured in units such as g/cm^3 .
66. Concentration gradient	The difference between two concentrations. There will be an overall movement of particles <i>down</i> a concentration gradient, from higher concentration to lower concentration.
67. Osmosis	The overall movement of solvent molecules in a solution across a partially permeable membrane, from a dilute solution to a more concentrated one.
68. Passive	A process that does not require energy is passive. A passive process is the opposite of an active process (which requires energy).
69. Semi-permeable	Describes something that will allow certain particles to pass through it but not others. Another term for 'partially permeable'.
70. Solute	The solid that has dissolved in a liquid to make a solution.
71. Solvent	The liquid in which a substance dissolves to make a solution.

SPANISH 1

Vocabulary 1a – Greetings

01 – Saludos	Greetings
02 – ¡Hola!	Hello!
03 – ¡Buenos días!	Good morning!
04 – ¡Buenas tardes!	Good afternoon! / evening!
05 – ¡Buenas noches!	Good night!
06 – ¿Qué tal?	How are you?
07 – ¿Cómo estás?	How are you?
08 – Bien, gracias	Good, thanks
09 – Muy bien	Very good
10 – Fenomenal	Great

Vocabulary 1b – Greetings

01 – Regular	Not bad
02 – Fatal	Awful
03 – ¿Cómo te llamas?	What's your name?
04 – Me llamo...	My name is...
05 – Mi nombre es...	My name is...
06 – ¿Dónde vives?	Where do you live?
07 – Vivo en...	I live in...
08 – ¡Hasta luego!	See you later!
09 – ¡Hasta mañana!	See you tomorrow!
10 – ¡Adiós!	Goodbye!

Vocabulary 2a – Personality

01 – Soy generoso/a	I am generous
02 – Soy genial	I am great
03 – Soy guay	I am cool
04 – Soy listo/a	I am smart
05 – Eres serio/a	You are serious
06 – Eres simpático/a	You are nice / kind
07 – Eres sincero/a	You are sincere
08 – Es tímido/a	He / She is shy
09 – Es tonto/a	He / She is silly
10 – Es tranquilo/a	He / She is calm / peaceful / quiet

SPANISH 2

Vocabulary 2b – Passions

01 – Mi pasión	My passion
02 – Mi pasión es...	My passion is...
03 – Mi héroe es...	My hero is...
04 – el deporte	sport
05 – el fútbol	football
06 – la música	music
07 – el tenis	tennis
08 – y	and
09 – también	also
10 – pero	but

Vocabulary 3a – Siblings

01 – ¿Tienes hermanos ?	Do you have any siblings?
02 – Tengo una hermana	I have a sister
03 – Tengo un hermano	I have a brother
04 – Tienes una hermanastra	You have a step-sister
05 – Tiene un hermanoastro	He/She has a step-brother
06 – No tengo hermanos	I don't have any siblings
07 – Soy hijo/a único/a	I am an only child
08 – ¿Cuántos años tienes ?	How old are you?
09 – Tengo cuatro años	I am four years old
10 – Tengo cinco años	I am five years old

Vocabulary 3b – Numbers

01 – Seis	Six
02 – Siete	Seven
03 – Ocho	Eight
04 – Nueve	Nine
05 – Diez	Ten
06 – Once	Eleven
07 – Doce	Twelve
08 – Trece	Thirteen
09 – Catorce	Fourteen
10 – Quince	Fifteen

SPANISH 3

Vocabulary 4a – Birthdays

01 – Dieciséis	Sixteen
02 – Diecisiete	Seventeen
03 – Dieciocho	Eighteen
04 – Diecinueve	Nineteen
05 – Veinte	Twenty
06 – Veintiuno	Twenty-one
07 – Treinta y uno	Thirty-one
08 – ¿Cuándo es tu cumpleaños?	When is your birthday?
09 – Mi cumpleaños es el uno de enero	My birthday is on the 1 st of January
10 – Mi cumpleaños es el dos de febrero	My birthday is on the 2 nd of February

Vocabulary 4b – Months

01 – Marzo	March
02 – Abril	April
03 – Mayo	May
04 – Junio	June
05 – Julio	July
06 – Agosto	August
07 – Septiembre	September
08 – Octubre	October
09 – Noviembre	November
10 – Diciembre	December

Vocabulary 5a – Pets

01 – ¿Tienes mascotas?	Do you have any pets?
02 – Tengo un caballo	I have a horse
03 – Tengo una cobaya	I have a guinea pig
04 – Tengo un conejo	I have a rabbit
05 – Tienes un gato	You have a cat
06 – Tienes un perro	You have a dog
07 – Tienes un pez	You have a fish
08 – Tiene un ratón	He/She has a mouse
09 – Tiene una serpiente	He/She has a snake
10 – No tengo mascotas	I don't have any pets

SPANISH 4

Vocabulary 5b – Colours

01 – ¿Cómo es? / ¿Cómo son?	What is it like? / What are they like?
02 – Blanco/a	White
03 – Amarillo/a	Yellow
04 – Negro/a	Black
05 – Rojo/a	Red
06 – Verde	Green
07 – Marrón	Brown
08 – Azul	Blue
09 – Rosa	Pink
10 – Naranja	Orange

Vocabulary 6a – Small Words

01 – No	No / Not
02 – Sí	Yes
03 – Mi	My (singular)
04 – Mis	My (plural)
05 – Tu	Your (singular)
06 – Tus	Your (plural)
07 – Su	His / Her (singular)
08 – Sus	His / Her (plural)
09 – Mi cantante favorita	My favourite singer
10 – Su programa favorito	His / Her favourite programme

Vocabulary 6b – Small Words

01 – Mi hermana	My sister
02 – Mis hermanos	My siblings / My brothers
03 – Tu perro	Your dog
04 – Sus mascotas	His / Her pets
05 – muy	very
06 – bastante	quite
07 – un poco	a little / a bit
08 – y	and
09 – pero	but
10 – también	also

RE1

Who are the Jews?

A person is Jewish because they are born Jewish. There are approximately 15 million Jews worldwide. King David established Jerusalem as the capital of Israel, with the Jewish temple at the centre. In the UK today there are about 300,000 Jews. The religion goes back 4000 years and was founded by Abraham. Jews who live very strict lives and follow their religious rules as closely as possible are known as Orthodox Jews. Progressive Jews believe that their religion needs to move with the times and that some religious practices need to be reformed in order to fit in with the modern world.

The symbol of Judaism is the Star of David.

- **Abraham** – founder of Judaism
- **Star of David** – symbol of the Jewish faith
- **Progressive Jews** – believe that their religion needs to move with the times and reform the way it does things
- **Orthodox Jews** – choose to live very strict lives and follow their religious rules as closely as possible
- **Monotheism** – believing in one God

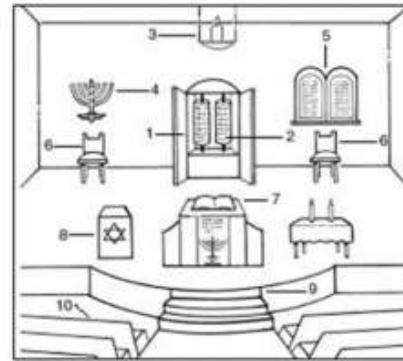
What are the Jewish holy books?

The Torah is the first part of the Jewish bible. It is the central and most important document of Judaism and has been used by Jews through the ages. All Jews believe it contains the words of God. The Torah reminds Jews of the special covenant God made with Abraham. It makes clear that they should only worship this one God. During difficult times in their history, faithful Jews have trusted in God's promises in the Torah and this has given them strength and hope. For example, Jews may look at the account in Exodus about how God rescued the Jews from slavery in Egypt. Orthodox Jews believe that God **dictated** the Torah to Moses on **Mount Sinai 50 days** after their exodus from Egyptian slavery. They believe that the Torah shows how God wants Jews to live. It contains **613 mitzvots (= God-given commandments)** - the ten best known of these as the Ten Commandments. Progressive Jews think the words are from inspired men of God several thousand years ago, not God's actual words.

- **Torah** – the Holy Book of the Jews
- **Hebrew** – the language that the Torah is written in
- **Covenant** – a promise made between God and Abraham – God would give his people a land of their own in return for Abraham and his descendants obeying God's rules
- **Shema** – the most important prayer in Judaism, starting 'Hear, O Israel: The Lord is our God, the Lord is one.'
- **Mezuzah** – a small box that contains a scroll with the words of the Shema written on it - found on the right hand doorpost of each door (except the toilet) in a Jewish home

- **Tefillin** – two black leather boxes with straps to hold them on, worn by some Jews for prayers. They have the words of the Shema inside – and are worn on the forehead and arm as a reminder of God's laws.
- **Tallits** – prayer shawls
- **Tenakh** – the Jewish holy writings, which are Torah, Talmud, Nevi'im and Ketuvim
- **Torah** – the Jewish Books of Law (Genesis, Exodus, Leviticus, Numbers, Deuteronomy)

How do Jews worship in the synagogue?



Label the key features using notes in your booklet

- **Yad** – a pointer that is used to protect the sacred Torah scrolls when reading from them
- **Mantle** – a special cover for the scrolls
- **Ark** – a special cupboard that the scrolls are kept in
- **Sofer** – a highly trained Jewish scribe who hand writes the Torah
- **Mitzvot** – God-given commandments – the Torah has 613 of them, that Orthodox Jews try and follow

How do Jews keep the Shabbat Mitzvot?

In the Torah Jews are told to keep one day a week aside as a holy day. In the fourth commandment, or mitzvah (plural mitzvot), God tells the Jews not to work on the Sabbath. They are to keep this one day holy, as a day of rest dedicated to God.

The Shabbat is kept as a special day to spend time with the family and to worship God. **The Torah lists 39 jobs that cannot be done once Shabbat begins at Friday sunset.** For example, Jews are commanded not to use a hammer, start a fire or bake on the Shabbat. All housework and preparations for Shabbat have to be completed before the sunset. Shabbat is then kept until Saturday sunset.

- **Shabbat** – the holy day that Jews set aside for family time and worship
- **Shabbat Mitzvot** – the Torah lists 39 jobs that mustn't be carried out during Shabbat
- **Challah** – the two loaves of bread that Jewish families have at the Shabbat meal
- **Kiddush** – the prayer spoken by a Jewish mother at the start of Shabbat (just before sunset on Friday) – two candles are lit
- **Havdalah** – the prayer that ends Shabbat at sunset on Saturday – a plaited candle is lit

RE2

How do Jews keep kosher?

1. A Jewish butcher must slaughter an animal using the kosher method, by cutting the animal's throat. It must not be an animal that has died naturally or been killed by another animal.
2. Meat and dairy products cannot be eaten in the same meal, because the Torah states three times **not to 'boil a kid in its mother's milk'**.
3. Blood must be removed from all meat, because the life of the animal is contained in the blood.
4. Any fish with fins and scales is allowed but shellfish and eels are not.
5. Only meat from permitted animals can be eaten – **any animal that has cloven hoofs and chews its cud**. Pigs are forbidden.

What happens when Jews are born?

In order to fulfil the covenant with God that was first made by Abraham, Jewish boys are circumcised eight days after their birth. This is known as the **Brit Milah**, which means 'the covenant of the cutting'.

Circumcision is a small operation to remove the flap of skin at the end of the penis. This can be done by a doctor or by a **mohel**. A mohel is a Jew who is specially trained in Jewish circumcision.

- **Circumcision** – a small operation to remove the flap of skin at the end of the penis
- **Brit Milah** - 'the covenant of the cutting' in which baby boys are circumcised at 8 days
- **Mohel** – a Jew who is specially trained in circumcision

How do Jews celebrate Bat or Bar Mitzvah?

In Judaism boys and girls have separate ceremonies to mark the age at which they are considered old enough to take on their religious and moral responsibilities for themselves. Up until this time the parents are expected to make sure that their children perform their religious duties, for example attending the synagogue.

- A boy will go through his ceremony, when he becomes Bar Mitzvah, at the age of thirteen. Bar Mitzvah means 'son of the commandment.'
- Girls are believed to mature earlier than boys and so they take on their religious responsibilities at the age of twelve. The girls become Bat Mitzvah and this means 'daughter of the commandment'.
- In Progressive synagogues Bar and Bat Mitzvah ceremonies are the same. In an Orthodox synagogue Bar Mitzvah is usually held on the first Shabbat after a boy's thirteenth birthday, and he will read a portion from the Torah. The Bat Mitzvah is usually on a Sunday and, in a Progressive synagogue, the girl will read from the Torah during the service.
- **Bar Mitzvah** – son of the commandment
- **Bat Mitzvah** – daughter of the commandment
- **Kippah** – a small cap used to cover the head

What festivals do Jews celebrate?

Rosh Hashanah is the Jewish New Year celebration. The festival celebrates God's creation of the world and the end of the world when the Day of Judgement will come. It takes place in late September or early October each year. The Jewish calendar starts 3761 years before the Christian calendar. So 2017 is 5778. It is a time for fresh starts. Jews spend ten days reflecting on what they have done wrong and repenting. Jews also accept apologies from each other and end any bad grudges that are being held. Jews hope that God will forgive them during this time. During Rosh Hashanah the **shofar** (a ram's horn) is sounded in the synagogue. It has a deep and solemn sound and it reminds Jews that God is almighty and that they must listen to him.

- **Seder** – the Passover meal
- **Shofar** – the horn blown in the synagogue at Rosh Hashanah
- **Purim** – a jolly festival that celebrates the rescue of Jews from destruction
- **Rosh Hashanah** – the Jewish New Year celebration
- **Pesach** – the festival of Passover
- **Hagadah** – the booklet that helps everyone know what is going on during Pesach
- **Prophet Elijah** – an extra glass of wine is left for him at the Pesach table to show belief that he will one day return from Heaven and announce the Jewish saviour



THE FOUR QUESTIONS ASKED AT PASSOVER

1. On all other nights we eat bread or matza, while on this night we eat only matza.
2. On all other nights we eat all kinds of vegetables and herbs, but on this night we have to eat bitter herbs.
3. On all other nights we don't dip our vegetables in salt water, but on this night we dip them twice.
4. On all other nights we eat while sitting upright, but on this night we eat reclining.

What is the history of Judaism?

Judaism came from God's promise to Abraham that his descendants would become the holy nation of Israel. Through Abraham's son Isaac, the prophet and leader of the Jewish people, Moses, was born. The Jews were to be holy, to serve God and follow his commands. Jews believe that God brought them through many troubled times, including freeing them from Egypt. God promised the Jews a land of their own; this land was to be Israel, and at its centre was the holy city of **Jerusalem**.

Jerusalem

The Jewish nation became strong and was led by many kings, including Solomon, who was the first to build the Temple in Jerusalem for God. The Temple was the focus for all Jewish worship and it was a reminder of God's presence among them. However, in 586BCE the Temple was destroyed by the Babylonians and many Jews were taken into exile in Babylon (present-day Iraq). In 538BCE work on rebuilding the Temple began and many Jews returned from exile. The Jews who chose not to return were the start of the **Diaspora**. Eventually in 63BCE the Romans took over Jerusalem and the influence of the Jews was weakened. Over time the Jews became more spread out and the Temple became less of a focus for worship; many synagogues had been set up. After Jesus' birth, life and death some Jews believed he rose from the dead and was the **Messiah**. 'Messiah' is the word used to describe the person who Jews believed God was going to send to save them and lead them. Those who followed Jesus as the Messiah later became known as Christians.

In 70CE and again in 132CE the Jews revolted against the Romans. Both times the Temple was destroyed. The Temple has never been rebuilt; all that remains is the Wailing Wall.

After the second revolt the Jews were banned from Jerusalem by the Romans and many were killed. Jews became scattered throughout the Middle East and across Europe. For many years the Jews faced terrible treatment because they had a different set of religious beliefs and practices. This can be seen most terribly through the events of the Holocaust.

After the Second World War many countries agreed that the Jews should be given a land of their own. In 1948 the official State of Israel was established in the land known as Palestine. Many Jews believe this to be the land God promised to Abraham thousands of years before. Not everyone was happy with this: Arabs had been living in Palestine for several thousand years and they did not want to give their land over to the Jews.

RE3

This has caused ongoing conflict between Jews and Palestinians and the problem still has not been solved.

What do Jews believe about God?

God's name is considered absolutely holy by Jews.

- Jews say God (it is not a name) but write G_d.
- YHWH is the name of God used in the Tenakh. It is usually pronounced Yahweh. This name means 'I am'. This is a reminder that to the Jews that God is **eternal**, and it is he who creates all living things. Jews do not say the name Yahweh, but replace it with Adonai (Lord) in speech and LORD (upper case letters) when written.
- Much of God's character is also revealed by the titles that he is given throughout the books of the Tenakh (see table).

Who was Abraham?

This is the story of **Abraham** as told in the Torah. Abraham was originally called Abram. He lived in Ur, which is now part of Iraq, before travelling to Haran with his family. His father was called Terah.

At this time people believed in many gods. This is known as **polytheism**. Abram's father sold **idols** too (sculptures of gods). In the **Midrash** there are stories about Abraham smashing his father's idols when he realises there can be only one God of heaven and earth. It is this one God whom Abram begins to worship.

This is the start of Judaism as a monotheistic religion.

God calls Abram to leave his home and follow him. In Genesis 12, God promises Abram that he will be his God, that Abram will have many descendants and that he will deliver God and his people into a promised land. God promised to set apart the Hebrews as his chosen people. This is the start of the **covenant** between God and the Jewish people.

How do Jews decide how they should live their lives?

A **halakhic** life means a life of walking with God. This is the kind of life Jews seek to live. Walking with God means following his ways and obeying his commands so that in all they do Jews are aiming to behave as God wants them to. The main guidance for living is found in the ten statements, given to God by Moses and in the 613 mitzvot. These commands are there to guide Jews in their journey through life and to help them walk with God. Generally, Jews follow the law of the country that they are living in. If they have concerns about a matter, for example, Jewish divorce or food rules, they can go to a Bet Din. The Bet Din is a special Jewish court made up of three rabbis. The only country in the world that is governed by Jewish law code, the Halakhah (= Jewish law), is Israel.

ADDITIONAL NOTES:

