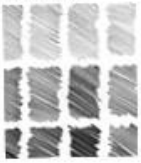
Year 9 Knowledge Organiser

Term 3

Art Knowledge Organiser. Year 9: Personal Possessions and My Room

LINE	TONE	PATTERN	TEXTURE	FORM	COLOUR
					

In this unit of work, we look at two themes: Personal possessions, and My Room. These projects enable you to explore drawing and painting objects that have specific meaning to you, and to explore the idea of a space that is your very own. We look at the work of Sir Michael Craig Martin, a British artist interested in objects, and Vincent Van Gogh, who painted his own little room in Arles.

What will you learn? (overview of knowledge)

Students will be revisiting vital skills covered in Y7 and Y8, these skills will be important should they choose to take Art at GCSE. They will be researching, experimenting, drawing and designing their own artwork.

What skills will you learn/develop?

- Re-visiting observational drawing technique
- Perspective drawing
- Painting/oil pastel/printing
- Analysis at GCSE level
- Flat colour theory

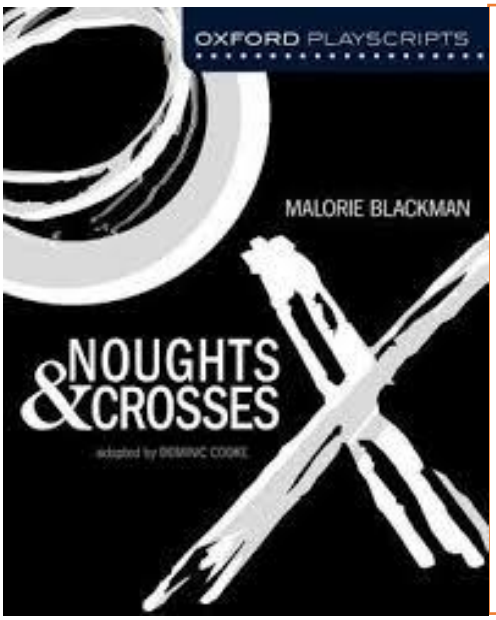
Support/Challenge:

https://www.tate.org.uk/art/artists/sir-michael-craig-martin-955
https://www.vangoghmuseum.nl/en/collection/s0047V1962

Below are some key words/phrases we will be using in the classroom:

COLOUR	TONE	LINE	FORM
DRAWING	SKILLS	TECHNIQUE	ANNOTATE
HARMONIOUS	MODERN	STILL LIFE	DETAIL
FLAT COLOUR	WATERCOLOUR	MIXING	PAINT
PERSPECTIVE	OBSERVE	ANNOTATE	ANALYSE

TERM 3 YR9 Noughts and Crosses



Characters:

Callum- Nought, in love with Sephy

Sephy- Cross, in love with Callum

Jude- Callum's brother

Lynette- Callum's sister

Ryan- Callum's father

Meggie- Callum's mother

Kamal- Sephy's father

Jasmine- Sephy's mother

Minerva- Sephy's sister

Sarah- Sephy's maid

Key terms:

Superior

Inferior

Segregated

Discriminated

Prejudice

Degrading

Oppressed

Climax

Anti-Climax

DEVELOPING	SECURED	ADVANCED	EXCEPTIONAL
Clear response to the task and engagement with the text. References and quotes are effective. Comments on implicit meanings.	Thoughtful and original response to the task. References and quotes successfully integrated into explanations. Potential implicit meanings discussed.	Clear critical engagement with the task. Precise and meaningful quotes are successfully integrated into explanations. Implicit and alternative meanings are discussed effectively.	Demonstrates an exploratory analysis of the text which touches on several clearly expressed ideas. Precise and meaningful quotes are seamlessly integrated into explanations. A range of potential interpretations are discussed with confidence.
Explanations of writers' methods are clear and supported by accurate and relevant use of subject terminology. Clear links between the context and the text.	Explanations of writers' methods and use of subject terminology is effective and carefully considers specific effects. Detailed links between text and context.	Analysis of writers' methods is considered and original. Subject terminology is used with precision. Context is explored in detail and embedded within the analysis.	Writers' methods are explored and analysed in detail. Subject terminology is used astutely. Context is explored precisely and convincingly develops exploration of the text.

My Senses Mat

It tastes...	It feels ...	It looks...	It smells...	It sounds...
sweet	prickly	dark	fresh	loud
sour	smooth	shiny	delicious	noisy
bitter	rough	long	bitter	quiet
crunchy	soft	skinny	rotten	silent
salty	hard	fat	salty	squeaky
chewy	silky	thin	smoky	creaky
dry	thick	small	sour	melodic
juicy	sticky	large	spicy	fizzy
hot	heavy	speckled	stale	shrill
fizzy	light	light	stinky	deafening
tasteless	bumpy	bright	sweet	faint
delicious	spiky	dotted	smelly	

Sassy sentence openers

Two adjective beginnings: Quiet, slow steps down the stairs so as not to wake anyone.

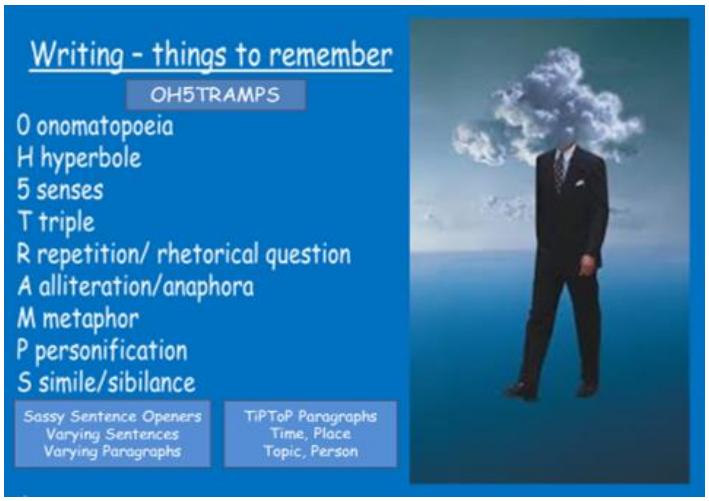
-ly beginnings: Quickly I opened the fridge and I grabbed the milk.

-ing beginnings: Stepping outside, I rub my eyes against the bright sunshine.

Time: Early in the morning, my alarm rudely wakes me.

Place: Curled in bed, I bury my head and try to ignore the alarm.

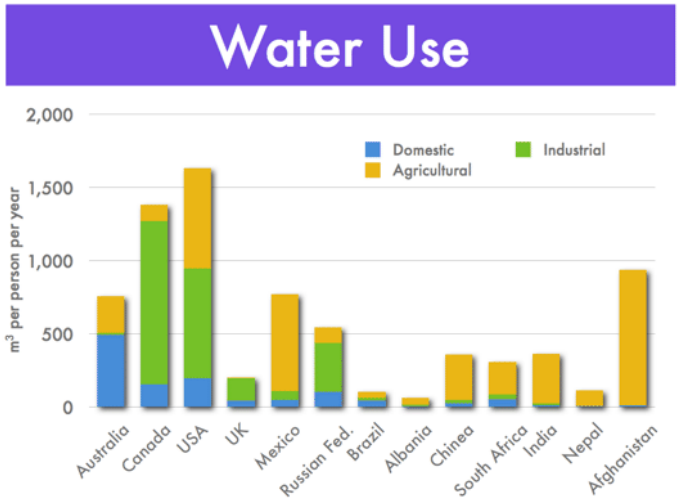
Noun: I slipped my foot onto the floor forcing myself to move.

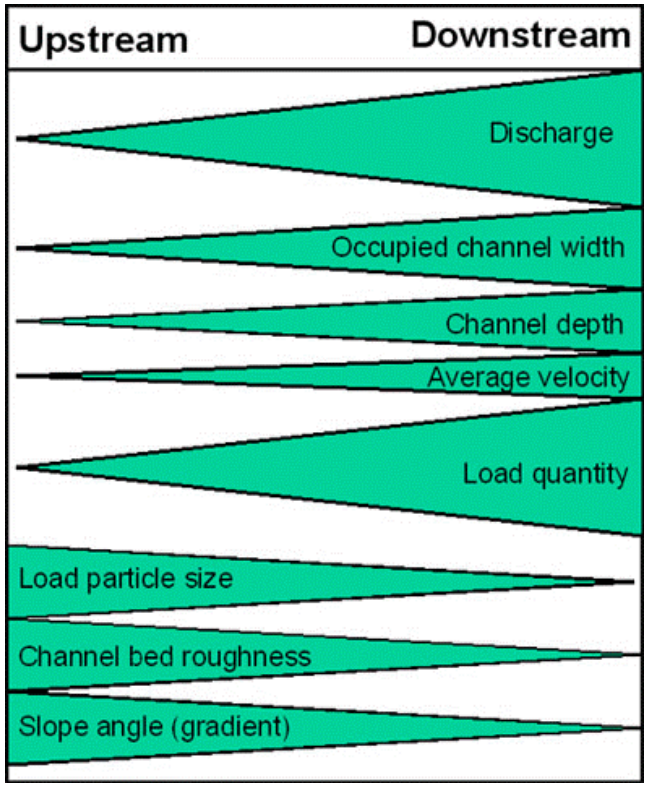


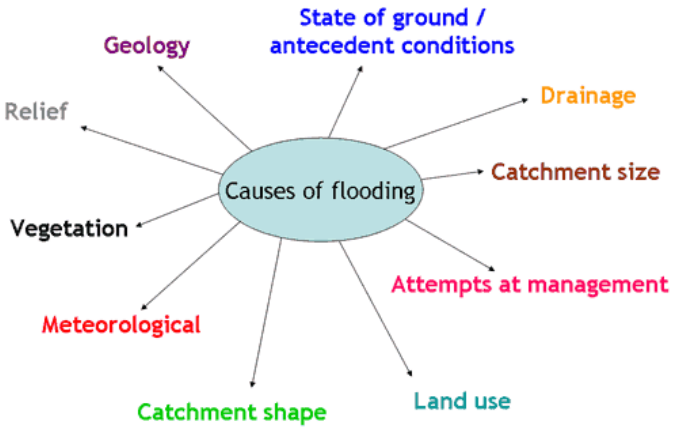
Geography - Year 9 Term 3 – Rivers and India

Key Terms

Source	Where a river starts.
Mouth	Where a river ends.
Drainage Basin	The area of land drained by a single river. Also called a catchment.
Water Cycle	The process by which water is moved between the atmosphere, land and oceans.
Erosion	The removal of material from the banks or bed of a river channel by the action of water or the material water carries.
Flood	An overflow of water on to land that is normally dry.
Engineering	The adaptation of the environment by man in an attempt to control natural processes.
Water Consumption	The pattern of water use by man for domestic, agricultural and industrial purposes.
Channel Characteristic	A means by which to describe or compare river channels that can include width, depth, velocity, discharge and the size and shape of material carried in the river.
Partition	The division of British India in 1947 into two nation states, India and Pakistan.
Transpiration	The process by which water taken in by the roots of a tree or plant is released from the leaves as water vapour.
Watershed	The area of highland that separates the drainage basins of two adjoining rivers.







Year 9 history knowledge organiser term 3: Why was Europe at war again by 1939?

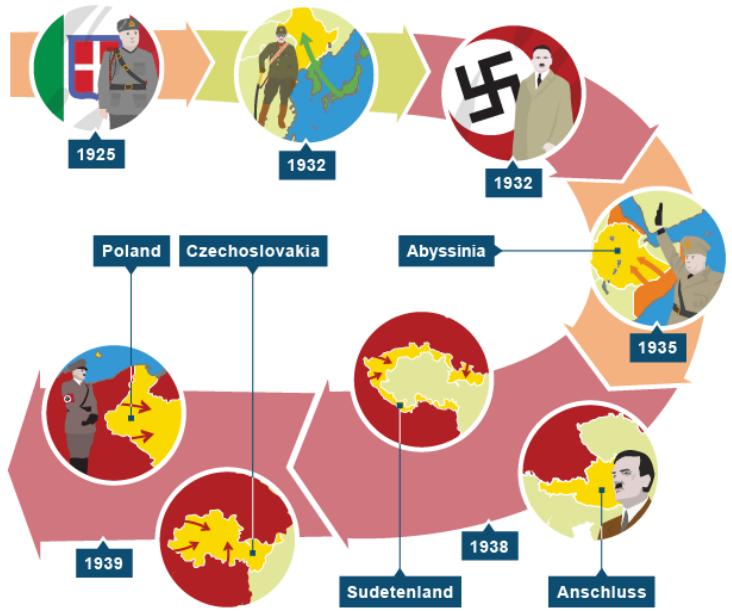
Keywords and definitions

Treaty Of Versailles	**The first World War Armistice between the Allies and Germany was the agreement that ended the fighting in the west of Europe on the Western Front.**
Appeasement	**This was the policy of many countries when Hitler first started to take over Austria and parts of Czechoslovakia. They gave in to Hitler's demands in order to avoid going to war.**
League of Nations	**The countries that won World War I (1914–18) set up an organization called the League of Nations. They wanted the League to be a place where countries could settle disagreements by talking instead of fighting.**

The Causes of World War II

THE EVENTS THAT LED TO WAR

March 1936	Germany sends troops into the Rhineland (area on the French-German border) going against the treaty of Versailles. Britain and France do nothing.
March 1938	Germany joins with Austria, again against the treaty of Versailles. Britain and France do nothing.
September 1938	Hitler puts pressure on Czechoslovakia. Britain and France finally decide to get involved. A deal is made at Munich. • Hitler agrees not to take over any more land • Britain & France agree that Germany may take over part of Czechoslovakia
March 1939	Hitler ignores the deal he made at Munich, and takes over the rest of Czechoslovakia. Britain & France humiliated.
August 1939	To avoid the possibility of a war on two fronts, Hitler makes a non-aggression pact with the Soviet Union. The Nazi-Soviet Pact.
September 1st 1939	Germany invades Poland
September 3rd 1939	Britain and France declare war on Germany
April 1940	German troops invade Denmark and Norway
May 1940	Germany invades the Netherlands and France. German blitzkrieg (lightning-war) has enormous success. France taken over in 6 weeks!



YEAR 9 – REASONING WITH GEOMETRY...

Rates

@whisto_maths

What do I need to be able to do?

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

- Solve speed, distance, time questions
- Use distance time graphs
- Solve density, mass, volume problems
- Solve flow problems
- Use flow graphs
- Interpret rates of change and their units

Keywords

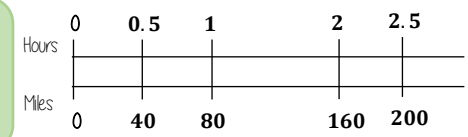
Convert: change
Mass: a measure of how much matter is in an object. Commonly measured by weight.
Origin: the coordinate (0, 0)
Volume: the amount of 3D space a shape takes up
Substitute: putting numbers where letters are – replacing numbers into a formula

Speed, Distance, Time

"per" for every
e.g. 80 miles per hour (mph)
Travel 80 miles every hour

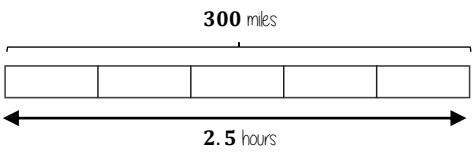
$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

You can use a double number line to help you calculate distance



e.g. A boat travels at a constant speed for 2.5 hours
It travels 300 miles.

Bar models can help to calculate mph



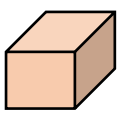
Each part is half an hour
Each part is 60 miles

Density, Mass, Volume

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

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

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



volume of prism = Area of cross section × Depth

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Speed, Distance, Time

÷ 60: minutes → hours
× 60: hours → minutes

Before calculations – make sure you are working in the same units as the speed

Learn or learn how to rearrange the formular for speed, distance and time

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

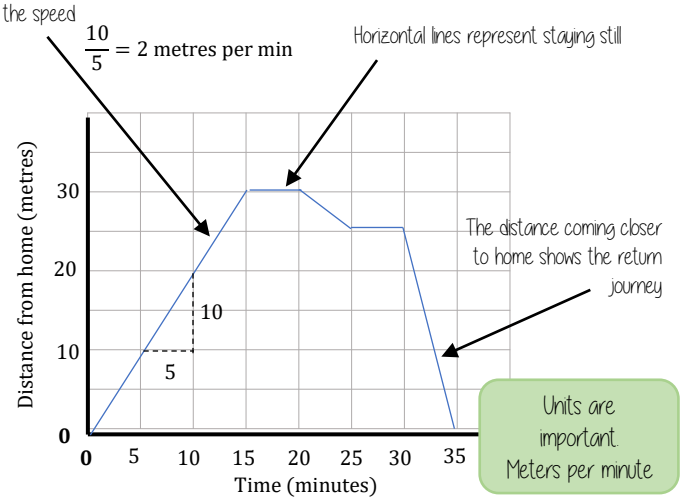
Substitute in the variables given

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

Distance – Time graphs

The steeper a gradient the faster the speed

Gradient = speed

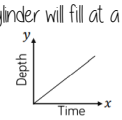


Units are important
Meters per minute

Flow problems & graphs

This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed

The cylinder will fill at a constant speed



Units are important
Ensure any volume calculations are the same unit as the rate of flow

Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

Speed: miles **per** hour
Exchange rates: euros **per** pounds
Density: mass **per** volume

÷ 1000: metres → kilometres
× 1000: kilometres → metres

R

YEAR 9 – REASONING WITH GEOMETRY...

Solving ratio & proportion problems

@whisto_maths

What do I need to be able to do?

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

- Solve problems with direct proportion
- Use conversion graphs
- Solve problems with inverse proportion
- Solve ratio problems
- Solve 'best buy' problems

Keywords

Proportion: a comparison between two numbers
Ratio: a ratio shows the relative size of two variables
Direct proportion: as one variable is multiplied by a scale factor the other variable is multiplied by the same scale factor.
Inverse proportion:: as one variable is multiplied by a scale factor the other is divided by the same scale factor.

Direct Proportion

R

As one variable changes the other changes at the same rate.

This is a multiplicative change

4 cans of pop = £2.40

4 cans of pop = £2.40 → 2 cans of pop = £1.20 (×0.5)

4 cans of pop = £2.40 → 12 cans of pop = £7.20 (×3)

This multiplier is the same In the same way that this would be for ratio

Sometimes this is easiest if you work out how much one unit is worth first e.g. **1 can of pop = £0.60**

Conversion Graphs

Compare two variables

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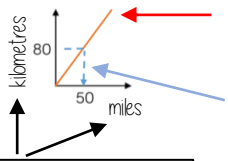


This is always a straight line because as one variable increases so does the other at the same rate

Labelling of both axes is vital

To make conversions between units you need to find the point to compare – then find the associated point by using your graph
Using a ruler helps for accuracy
Showing your conversion lines help as a "check" for solutions

Inverse Proportion

As one variable is multiplied by a scale factor the other is divided by the same scale factor

Examples of inversely proportional relationships

Time taken to fill a pool and the number of taps running

Time taken to paint a room and the number of workers

T is inversely proportional to G. When T=2 then G=20

T	1	2	8
G	40	20	5

(÷ 2, × 4 / × 2, ÷ 4)

Best Buys

Have a directly proportional relationship

To calculate best buys you need to be able to compare the cost of one unit or units of equal amounts

	Shop A	Shop B
	4 cans for £1.20	3 cans for 93p
	£1.20 ÷ 4	£0.93 ÷ 3
Cost per item	1 can is £0.30 Or 30p	1 can is £0.31 Or 31p

Shop A is the best value as it is 1p cheaper per can of pop

	Shop A	
	4 cans for £1.20	3 cans for 93p
	4 ÷ £1.20	3 ÷ £0.93
Cost per pound	£1 buys 3.333 cans of pop	£1 buys 3.23 cans of pop

Shop A is still shown as being the best value but pay attention to the unit you are calculating, per item or per pound.

Best value is the most product for the lowest price per unit

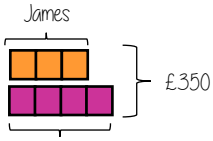
Sharing a whole into a given ratio

R

James and Lucy share £350 in the ratio 3:4
Work out how much each person earns

Model the Question

James : Lucy
3 : 4



Find the value of one part

Whole: £350
7 parts to share between
(3 James, 4 Lucy)

£350 ÷ 7 = £50

□ = one part = £50

Put back into the question

James : Lucy
(×50) 3 : 4 (×50)
£150 : £200

James = 3 x £50 = £150
Lucy = 4 x £50 = £200

Finding a value given 1:n (or n:1)

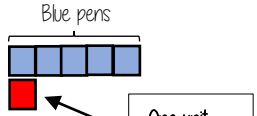
R

Inside a box are blue and red pens in the ratio 5:1
If there are 10 red pens how many blue pens are there?

Model the Question

Blue : Red
5 : 1

□ = one part = 10 pens



Put back into the question

Blue : Red
(×10) 5 : 1 (×10)
50 : 10

Blue pens = 5 x 10 = 50 pens
Red pens = 1 x 10 = 10 pens

There are 50 Blue Pens

YEAR 9 – REASONING WITH GEOMETRY...

Pythagoras' theorem

@whisto_maths

What do I need to be able to do?

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

- Use square and cube roots
- Identify the hypotenuse
- Calculate the hypotenuse
- Find a missing side in a Right angled triangle
- Use Pythagoras' theorem on axes
- Explore proofs of Pythagoras' theorem

Keywords

Square number: the output of a number multiplied by itself
Square root: a value that can be multiplied by itself to give a square number
Hypotenuse: the largest side on a right angled triangle. Always opposite the right angle.
Opposite: the side opposite the angle of interest
Adjacent: the side next to the angle of interest

Squares and square roots (R)

This can also be written as 6^2

$\sqrt{\ }$ is the square root symbol

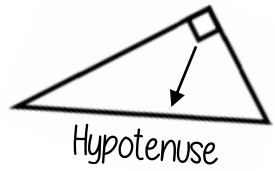
e.g $\sqrt{64} = 8$

Because $8 \times 8 = 64$

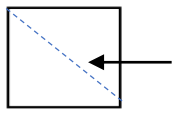
1×1	2×2	3×3	4×4	5×5	6×6	7×7	8×8	9×9	10×10
1	4	9	16	25	36	49	64	81	100

Square numbers

Identify the hypotenuse

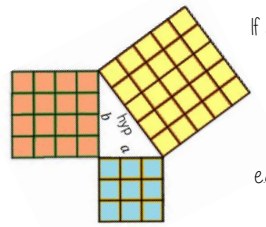


The hypotenuse is always the longest side on a triangle because it is opposite the biggest angle.



Polygons can still have a hypotenuse if it is split up into triangles and opposite a right angle

Determine if a triangle is right-angled



a = 3 b = 4 c = 5

If a triangle is right-angled, the sum of the squares of the shorter sides will equal the square of the hypotenuse.

$$a^2 + b^2 = \text{hypotenuse}^2$$

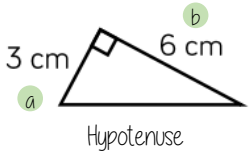
e.g $a^2+b^2 = hypotenuse^2$

$3^2 + 4^2 = 5^2$

$9 + 16 = 25$

Substituting the numbers into the theorem shows that this is a right-angled triangle

Calculate the hypotenuse



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

1 Substitute in the values for a and b

$3^2+6^2 = \text{hypotenuse}^2$

$9 + 36 = \text{hypotenuse}^2$

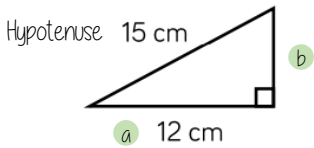
$45 = \text{hypotenuse}^2$

2 To find the hypotenuse square root the sum of the squares of the shorter sides

$\sqrt{45} = \text{hypotenuse}$

$6.71cm = \text{hypotenuse}$

Calculate missing sides



Either of the short sides can be labelled a or b

$$a^2 + b^2 = \text{hypotenuse}^2$$

$12^2+b^2 = 15^2$

1 Substitute in the values you are given

$144 + b^2 = 225$

$-144 \quad -144$

Rearrange the equation by subtracting the shorter square from the hypotenuse squared

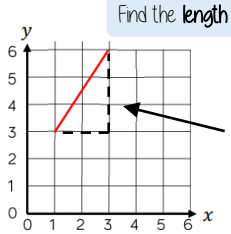
Square root to find the length of the side

$b^2 = 111$

$b = \sqrt{111} = 10.54\ cm$

Pythagoras' theorem on a coordinate axis

Find the **length** of the line segment



The segment can be made into a right-angled triangle by adding the sides on the diagram.

The line segment is the **hypotenuse**

$$a^2 + b^2 = \text{hypotenuse}^2$$

The lengths of a and b are the sides of the triangle.

Be careful to check the scale on the axes

Reggae Knowledge Organiser: Year 9 Summer term

Reggae Rhythm

Reggae music uses a rhythm which is **offbeat**. This is the definition for when the main pulse or beat of the song is on beats 2 and 4 rather than beats 1 and 3.

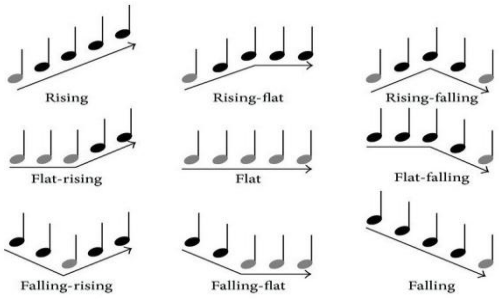
ONBEAT RHYTHM GRID

Pulse/ Beat	1	2	3	4	1	2	3	4
"Onbeat" rhythms (strong beats)	♩	𝄽	♩	𝄽	♩	𝄽	♩	𝄽

OFFBEAT RHYTHM GRID

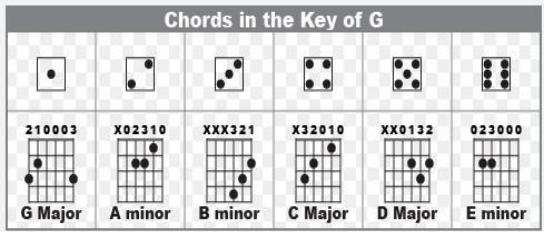
Pulse/ Beat	1	2	3	4	1	2	3	4
"Offbeat" rhythms (weak beats)	𝄽	♩	𝄽	♩	𝄽	♩	𝄽	♩

Reggae Melodic patterns

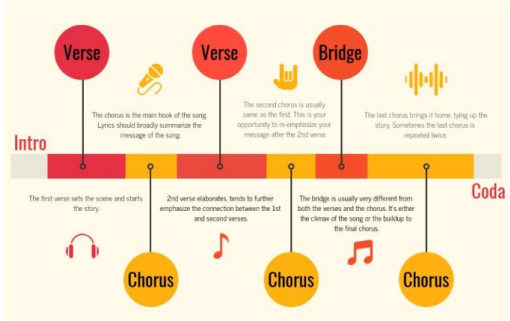


Reggae Instrumentation

Reggae Harmony



Reggae Structure



Reggae production

CD1

1. Bob Marley And The Wailers V Funkstar Deluxe Sun Is Shining
2. Shaggy Feat. Ricardo 'Rikrok' Ducent It Wasn't Me
3. Big Mountain Baby I Love Your Way
4. Maxi Priest Wild World
5. Chaka Demus & Pliers Tease Me
6. Jimmy Cliff Wonderful World Beautiful People
7. UB40 Feat. Chrissie Hyde I Got You Babe
8. Shaggy Feat. Rayvon In The Summertime
9. Brian & Tony Gold, Red Dragon Compliments On Your Kiss
10. Skatalites You're Wondering Now
11. Ken Boothe Everything I Own
12. Dave And Ansell Collins Monkey Spanner
13. Ini Kamoze Here Comes The Hotstepper
14. Levi Roots A Message To You Rudi
15. Desmond Dekker & The Aces It Mek
16. Boris Gardiner Elizabethan Reggae
17. Sugar Minott Good Thing Going
18. Bitty Mclean It Keeps Rainin'
19. The Tennors Another Scorcher
20. Rupie Edwards Ire Feelings (Leggo Skanga)

CD2

1. Althea & Donna Uptown Top Ranking
2. Dave And Ansell Collins Double Barrel
3. Boris Gardiner I Want To Wake Up With You
4. Bob And Marcia To Be Young Gifted And Black
5. Desmond Dekker You Can Get It If You Really Want
6. Aswad Shine
7. Third World Now That We've Found Love
8. Dawn Penn You Don't Love Me (No,No,No) (Trojan Mix)
9. Janet Kay Silly Games
10. Junior Murvin Police & Thieves
11. Blu Cantrell Feat. Sean Paul Breathe
12. Shabba Ranks & Maxi Priest Housecall (Your Body Can't Lie To Me)
13. Toni Braxton Feat. Mad Cobra You're Making Me High
14. Susan Cadogan Hurts So Good
15. Sophia George Girlie Girlie
16. Johnny Nash I Can See Clearly Now
17. The Paragons The Tide Is High
18. Nicky Thomas Love Of The Common People
19. Desmond Dekker & The Aces Israelites
20. 10CC Dreadlock Holiday

CD3

1. Sean Kingston Feat. Jonathan Rotem Beautiful Girls
2. Damian Marley Welcome To Jamrock
3. Shaggy Oh Carolina
4. Pato Banton Feat. The Reggae Revolution, Ali Campbell & Robin Campbell Baby Come Back
5. Beats International Feat. Lindy Layton Dub Be Good To Me
6. Ace Of Base Don't Turn Around
7. Harry J & The All Stars Liquidator
8. The Upsetters Return Of Django
9. Greyhound Black And White
10. Tony Tribe Red Red Wine
11. Arrow Hot Hot Hot
12. Louchie Lou & Michie One Shout (It Out)
13. Dennis Brown Money In My Pocket
14. Ken Boothe Crying Over You
15. Paul Davidson Midnight Rider
16. The Pioneers Let Your Yeah Be Yeah
17. Desmond Dekker & The Aces 007 (Shanty Town)
18. Dandy Livingstone Suzanne Beware Of The Devil
19. John Holt Help Me Make It Through The Night
20. Levi Roots Don't Worry Be Happy

Year 9 Athletics

St John Fisher
Catholic High School

Head

I can display confidence when leading a warm up to small groups within my class.

I can focus on aspects of my technique that I need to improve upon in a range of activities.

I can list the key coaching points for a range of track and field events.

I can explain how my performances are similar to and different from others.

Heart (Resilience)

I have worked individually and as part of a group this term.

I have showed good resilience in a range of athletic activities, including both track and field events.

I have shown good resilience when working individually and as a part of a team across a range of field and track events this term.

I have pushed my body and challenged myself to improve across a range of athletic events.

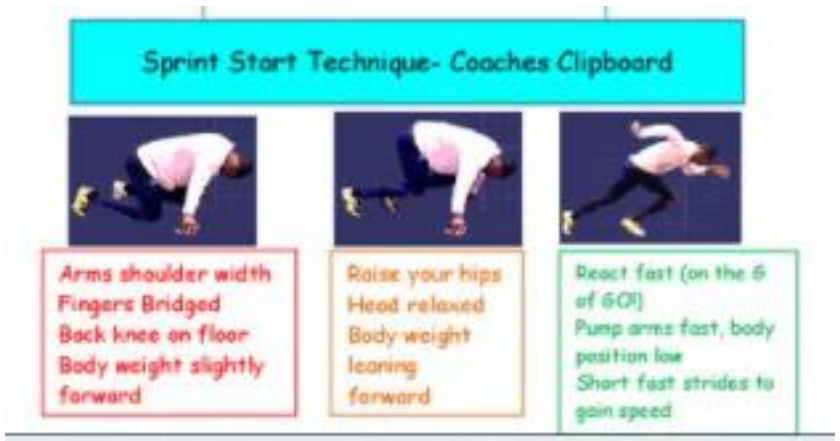
Hands

I am able to show a good replication of skills across a range of athletic track events.

I am able to show a good replication of skills across a range of athletic field events.

I am able to compete in a range of track events, including 100m, 200m, 400m, 800m and relays.

I am able to compete in a range of field events, including triple jump, shot putt, javelin and high jump.



Head

I can recognise weaknesses in other players and can use basic tactics to help my team succeed.

I can analyse performances and I can implement a variety of strategies for improvement

I can play a full game and I know most of the rules.

I can demonstrate originality and sophistication when making ideas happen that contribute to the unique /exceptional quality of performances

Heart (Resilience)

I keep going and try my best to overcome errors and mistakes.

I have showed good resilience when playing as a team.

I have been resilient when batting in a game.

To show patience and resilience when fielding in Rounders.

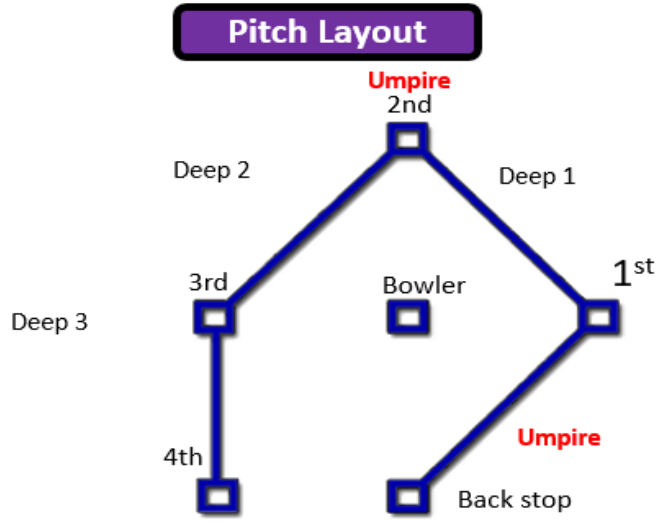
Hands

I am competent when throwing, catching and batting, and show accuracy and variety

I can show a high level of control, consistency and precision in my skills

I can strike the ball with power and I am able to place the ball in the gaps in the field

My skills hold up when put under pressure



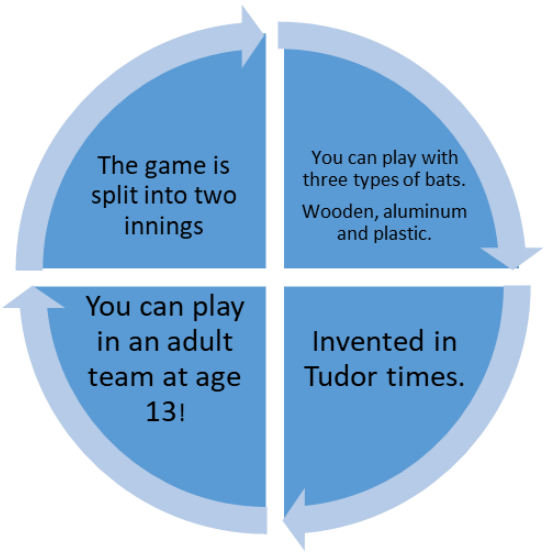
Year 9 Rounders

What is Rounders?

- A sport with two teams with a maximum of **15 players**. No more than 9 players on the field at any one time.
- Games are played on a square shaped pitch, divided by posts and boxes.
- Score points by hitting the ball. One point or half a point (Rounder) depending on where the player gets to in the field.
- The bowler bowls the ball to the batter who hits the ball forward on the Rounders Pitch. The batter then runs to as many posts as possible before the fielders return the ball to touch the post the batter is heading for.
- Players are assigned "positions" .
- If the batter reaches the 2nd or 3rd post in one hit, the batting team scores ½ a Rounder. If the batter reaches 4th post in one hit, the batting team scores a Rounder
- Games are usually played over 2 innings with the aim of the game to score the most rounders. This is normally 30 "good balls".
- The play should be recorded on an accompanying scoresheet.

Key Words

Batting Team– This is the team who are batting, normally 9 players.
Fielding Team:-This is the team who are in field, normally 9 players.
"OUT" – This means you have been caught or stumped out.
"IN" –This means the umpire has deemed you are in.
Obstruction – This is where a player gets in the way of another player, normally in field. The player who is obstructed get ½ rounder.
Wait at first –You have hit the ball backwards, you have to wait at first post.
Ball – These can be hard or softer, you need to catch the ball to get someone out.
Bat –There are three types of batt you can use. This is used to hit the ball.
Post – These are normally white and used to 'stump' the ball.
Stump: This is the motion of the ball touching the base or post.
Rounder- This means you have scored 1 (point) called a rounder.
Half a Rounder-This means you have scored ½ (point) called a rounder.



Year 9 Cricket

Head

I can select appropriate field placing.

I can play a full game and I know most of the rules.

I can use strategies and tactics in response to changing circumstances.

I explain how my performances are similar to and different from others.

Heart (Resilience)

I have worked as a team in various situations

I have showed good resilience when playing as a team

I have been resilient when batting in a game

I have shown resilience when working in a team this half term

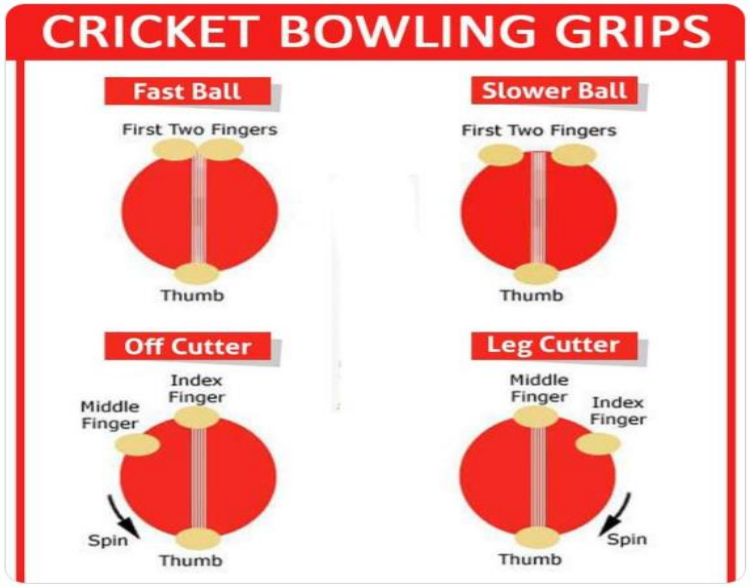
Hands

I am competent when throwing, catching and batting showing accuracy and variety.

I can demonstrate both the 'Short' and 'Long' barrier when fielding.

When batting I make good contact with the ball.

I can throw and catch with some success over short distances



Head

I can select the appropriate shot at the correct times to outwit my opponent

I can play a full singles and doubles game and I know most of the rules.

I can explain the court dimensions and the lines you use for both singles and doubles.

I can explain how my performances are similar to and different from others.

Heart (Resilience)

I have worked individually and as a pair in singles and doubles matches this term

I have showed good resilience when I have been losing in a match

I have shown resilience when working with my partner in doubles this term

I have shown good resilience when I have played singles matches this term

Hands

I am able to use groundstrokes effectively to rally with my partner

I can demonstrate both the forehand and backhand shot when playing in a competitive match

When serving, I am successful in my placement

I can use a variety of different shots, including the drop shot, lob, volley and smash when playing in a competitive match

READY POSITION

Purpose: Your ready position helps you to get prepared for any shot that may come your way next.

Teaching points:

✓ Be on your toes
✓ Hold the racquet loosely with both hands
✓ Bend your knees
✓ Face your opponent

FOREHAND

Purpose: Known as a groundstroke and is played on your stronger side with one hand on the racquet.

Teaching points:

✓ Split step into a ready position
✓ Turn sideways to your strongest hand
✓ Point with your other hand to the ball
✓ Swing your racquet low to high
✓ Finish your swing over your shoulder with a high elbow

BACKHAND

Purpose: Also known as a groundstroke and is commonly played with 2 hands on the racquet on your weaker side.

Teaching points:

✓ Split step into ready position
✓ 2 hands on the racquet, turn the opposite way from your forehand
✓ Swing the racquet low to high
✓ Finish your swing over your shoulder with a high elbow

SERVE

Purpose: It is the first shot and starts the game. It has been said to be the most important shot of the whole game.

Teaching points:

✓ Use a chopper grip
✓ Stand sideways with your feet behind the line
✓ Throw the ball up above your head at about 1 o'clock.
✓ Swing your racquet back and extend your arm
✓ Brush upwards on the ball and finish by your opposite leg.

VOLLEY

Purpose: Commonly referred to as an 'approach shot'. When the player has approached the net and hits the ball without a bounce.

Teaching points:

✓ Use a chopper grip
✓ Stand at the net in a high ready position
✓ Step forward as you hit
✓ Do not swing, let the ball bounce of your strings (block the ball)

SMASH

Purpose: This shot is played above your head. You can hit the ball at high speed on your opponent's court.

Teaching points:

✓ Be sideways on
✓ Legs should be bent with non-racquet arm pointing to the ball
✓ Extend your racquet arm up, and use your body to create power
✓ Follow through by your opposite leg

Year 9 Tennis

Forehand

Take the racquet back

Finish the shot with the racque over the shoulder

Ready position

Body facing opponent

Wide stance

Knees slightly bent

Weight on to balls of the feet

Swing the racquet from low to high as you step in to the shot

Serve

Racquet and ball start together, then...

Toss the ball with the non racquet hand

Release the ball high

Non racquet foot points towards the right net post

Racquet foot points in the direction of the baseline

As you toss the ball bring the racquet down and back

Hit the ball as high as possible above the head

Follow through across the body

Backhand

Ready position

Step in to the shot

Take the racquet back early

Make a smooth connection as you bring the racquet through

PSHE- Knowledge organiser- Y9- Term 3

Living in the wider world	Citizenship: Diversity and Prejudice	• Genocide: an act committed with intent to destroy, in whole or in part, a national, ethnic, racial or religious group. • Prejudice: preconceived opinion that is not based on reason or actual experience. • Stereotyping: when we categorise or make assumptions about people based on basic characteristics. • Generalising: making a general or broad statement by inferring from specific cases. • Scapegoating: the practice of singling out a person or group for unmerited blame and consequent negative treatment. • Discrimination: the unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability. • A cohesive community celebrates everyone's differences • Justice: Just behaviour or treatment. The quality of being fair and reasonable. The administration of the law or authority in maintaining this.

Remember!

- We will be open and honest, but not discuss directly our own and others personal/ private life.
- Your teacher will not repeat what is said in the room except if she/he is concerned we are at risk.
- It is ok to disagree but we will not judge.
- Taking part is important but we have the right to pass.
- We will not make assumptions and we will listen to others' point of view.
- We know that there are no stupid questions but we will use appropriate language.
- If we need further help or advice, you know you can talk to your teachers, form tutor and SSOs.

Marriage & the family

Marriage:

Marriage is an important rite of passage in Christianity, For Christians, marriage is traditionally accepted as being between a man and women, and is seen as the correct context in which to have a sexual relationship and children.

The Christian purpose of marriage:

1. To provide companionship, friendship and support between a husband and wide
2. To enjoy a sexual relationship within marriage and to have children and raise a family
3. To make a lifelong commitment to create a stable environment to raise a family.

Christian beliefs about marriage:

- Most Christians believe marriage is a sacrament – a ceremony where God is involved (this shows that marriage is sacred and binding)
- Marriage is believed to be a gift from God
- Provides security and a stable environment for children
- Although it is important, God does not want everyone to be married. Jesus himself wasn't married and some priests will not marry as they have a vocation from God.

Sexual relationships:

Christians believe sex is a gift from God and intended for procreation, therefore they believe that sex should take place only within marriage.

Teachings on sexual relationships in the Bible:

- Causal relationships are wrong – marriage intended for sexual relationships.
- Adultery is forbidden in the Ten Commandments
- Married couples should be faithful to each other as promised in the marriage vows.
- St Paul in the Bible condemns homosexual acts

Alternative Christian views:

- In a modern society, some of the ideas in the Bible about sexual relationships are outdated. A sexual relationship between a cohabiting couples who are in a stable relationship can be allowed.

Families

Family life has changed over the past 50 years as society has modernised.

Types of families:

1. Nuclear family- two parents (man and women) and their children living together
2. Blended family – Stepfamilies that have joined together through remarriage
3. Extended family – parents, children, grandparents, aunts, uncles and cousins.
4. Single parent family – One parent and children
5. Family with same sex parents – Two same-sex parents and children.

Purpose of the family: Christians believe that family was God's intention for humans when he created them. Christians believe the purpose for a family is:

Provide the right place for a marriage couple to have children, to teach morals, to raise children into the Christian faith.

Gender prejudice and discrimination:

Role of men and women in the family:

- ❑ Men and women were both made in the image of God
- ❑ Some parts of the Bible suggest that God made women as a 'helpmate' for man. A literal interpretation could be men are the head of the household with women looking after the home and children/
- ❑ Catholics accept men and women were created in the image of God but given different roles.

Gender discrimination in the Church:

Catholic Christians only accept men to hold the position of bishops, priests or deacon and pope. They believe the roles represent Jesus. Who as male.

Promoting gender equality:

Many Christian organisations promote gender equality, including gender equality, including Christian Aid and Tear fund, which believe that gender inequality goes against human rights.

Roles within the family

Family is important to Christians. Each member within the family is seen to have a special role that they believe God expects them to fulfil.

Christian teachings about the importance of family and role within the family:

Parents:

- Responsibility to get married and have children as that is what God intended
- Parent have a responsibility to love and support their children and keep them safe
- Christian parents have a responsibility to raise their children as Christians – getting them baptised or Christened and introducing them to the Christian community.

Children:

- The Bible teaches that children should honour; obey and respect their parents
- Children are expected to care for their parents in old age.

The family in the local parish

How can the parish help families?

✓ Supporting couples who are expecting children e.g. organising classes and social events

✓ Organising family events and family worship services

✓ Running parental support classes

✓ Being involved in rights of passage, e.g. christenings or marriage within the family

✓ Encouraging children to attend Sunday School and special services e.g. crib survives

✓ Providing counselling support

Worship:

- Local churches will hold family services to allow families to worship together
- In Sunday School children learn more about the Christian faith

Rights of passage:

Rites of passage celebrate key points in a person's life. They include occasions such as birth and marriage. The Church recognises the importance of these key events as a family. Relatives and friend may attend a baptism or marriage ceremonies as well as members of the wider Church community.

Divorce:

Divorce is the legal termination of a marriage and different Christians hold different views about it. Attitudes to divorce have significantly changed in recent years.

What Catholic Christians believe:

- Divorce is not recognised because marriage is for life
- Jesus said divorce is wrong
- Marriage is a sacrament and divorce would break the promises made by God.

What liberal Protestants believe:

- Divorce is not be encouraged, but may sometimes be necessary
- Divorce must be acceptable as the UK law allows it
- People can make mistakes and God is ready to forgive sins

Humanists and atheist views:

Humanists believes that the breakdown of a marriage can cause problems within the family

Family Planning:

Contraception is the intentional prevention of pregnancy.

Types of contraception:

Natural methods of contraception include the rhythm method, which a is when a couple have sex when the women is not ovulating.

Artificial method are human made – made objects designed to prevent pregnancy. They include the condom and the birth control pill.

Catholic beliefs about contraception:

- Every sexual act should be open to the possibility of children.
- Contraception prevent the main purpose of sex- having children.
- Contraception could encourage promiscuity.

Liberal Protestant beliefs about contraception:

- The main purpose of sex is procreation, but sex is also for pleasure as an expression of love between a husband and wife
- Contraception is a sensible method of family planning
- Using artificial methods of contraception does not go against God's teachings

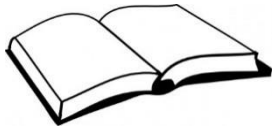
-

Important key words:

Monogamy: marriage is only to one person at a time **Cohabitation**: Living together in a sexual relationship without being married **Sacraments** – an outward ceremony through which God's grace is given **Diocese** – a Church area under direction of the visit **Gender prejudice-** believing one sex is superior to another **Gender discrimination-** putting the prejudice into action and treating one sex differently because of their sex

Sources of wisdom and authority:

- 'A man will leave his father and mother and be united to his wife, and the two will become one flesh' (Mark 10:6-9)
- 'You shall not commit adultery' (Exodus 20:14)
- 'Do you not know that your bodies are temples of the Holy Spirit' (1 Corinthians 6:18-20)
- 'Children are a heritage from the Lord, offspring are a reward from him' (Psalms 127:3)
- 'Therefore what God has joined together, let no one separate.' (Mark 10:9)



Science – Year 9 – Term 3 part 1 – Fundamentals of Chemistry – Building Compounds

The three states of matter are **solid, liquid and gas**.

For a substance to change from one state to another, **energy** must be **transferred**.

The particles gain energy. This results in the breaking of some of the **attractive forces** between particles during melting.

To evaporate or boil a liquid, more energy is needed to overcome the remaining chemical bonds between the particles.

Note the difference between **boiling** and **evaporation**. When a liquid **evaporates**, particles **leave the surface** of the liquid **only**. When a liquid **boils**, **bubbles** of gas form **throughout** the liquid before rising to the surface and escaping.

The amount of energy needed for a substance to change state is dependent upon the **strength** of the **attractive forces** between particles. The **stronger** the **forces of attraction**, the **more energy** needed to **break them apart**. Substances that have strong attractive forces between particles generally have **higher melting and boiling points**.

The particles in a **solid** are arranged in a regular pattern. The particles in a solid **vibrate** in a fixed position and are tightly packed together. The particles in a solid have a **low amount of kinetic energy**.

Solids have a **fixed shape** and are unable to flow like liquids. The particles **cannot be compressed** because the particles are very close together.

The particles in a **liquid** are randomly arranged. The particles in a liquid are able to **move around** each other. The particles in a liquid have a **greater amount** of **kinetic energy** than particles in a **solid**.

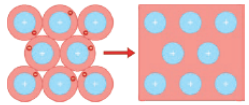
Liquids are able to **flow** and can take the shape of the container that they are placed in. As with a solid, liquids **cannot be compressed** because the particles are close together.

The particles in a **gas** are randomly arranged. The particles in a gas are able to **move around very quickly** in all directions. Of the three states of matter, gas particles have the **highest amount** of **kinetic energy**.

Gases, like liquids, are able to **flow** and can fill the container that they are placed in. The particles in a gas are **far apart** from one another which allows the particles to move in any direction.

Gases can be **compressed**; when squashed, the particles have empty space to move into.

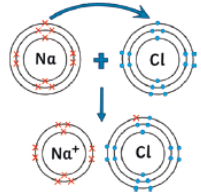
Metallic bonding occurs between **metals only**. Positive metal ions are surrounded by a **sea of delocalised electrons**. The ions are tightly packed and arranged in rows.



There are strong electrostatic forces of attraction between the positive metal ions and negatively charged electrons.

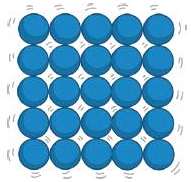
Pure metals are too soft for many uses and are often mixed with other metals to make alloys. The mixture of the metals introduces different-sized metal atoms. This **distorts the layers** and **prevents them from sliding over one another**. This makes it harder for alloys to be bent and shaped like pure metals.

Ionic bonding occurs between a metal and a non-metal. Metals lose electrons to become positively charged. Opposite charges are attracted by electrostatic forces – an ionic bond.

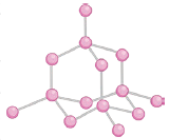


Ionic Compounds

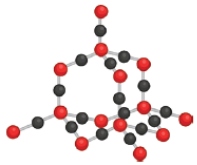
Ionic compounds form structures called giant lattices. There are **strong electrostatic forces of attraction** that **act in all directions** and act between the **oppositely charged ions** that make up the giant ionic lattice.



Each **carbon** atom is **bonded** to **four** other carbon atoms, making diamond very strong. Diamond has a high melting and boiling point. **Large** amounts of **energy** are needed to break the strong covalent bonds between each carbon atom. Diamond **does not conduct** electricity because it has **no free electrons**.



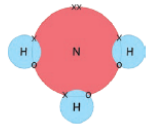
Silicon dioxide (silicon and oxygen atoms) has a similar structure to that of diamond, in that its atoms are held together by **strong covalent bonds**. Large amounts of energy are needed to break the strong covalent bonds therefore silicon dioxide, like diamond, has a high melting and boiling point.

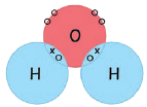


Covalent bonding is the sharing of a pair of electrons between atoms to gain a full outer shell. This occurs between **non-metals only**. Simple covalent bonding occurs between the molecules below. Simple covalent structures have **low melting and boiling points** – this is because the **weak intermolecular forces** that hold the molecules together break when a substance is heated, not the strong covalent bonds between atoms. They **do not conduct electricity** as they do not have any free delocalised electrons.

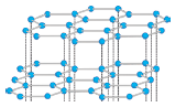
Dot and cross diagrams are useful to show the **bonding** in **simple molecules**. The **outer electron shell** of each atom is represented as a **circle**, the circles from each atom overlap to show where there is a **covalent bond**, and the electrons from each atom are either drawn as **dots or crosses**. There are **two different types** of **dot and cross diagram** – one with a circle to represent the outer electron shell and one without.

You should be able to draw the dot and cross diagrams for the following simple covalent structures: chlorine, oxygen, nitrogen, water, ammonia, hydrogen chloride and methane.

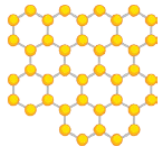




Graphite is made up of layers of **carbon** arranged in **hexagons**. Each carbon is bonded to **three** other carbons and has **one free delocalised electron** that is able to move between the layers. The layers are held together by weak intermolecular forces. The layers of carbon can slide over each other easily as there are no strong covalent bonds between the layers. Graphite has a high melting point because a lot of energy is needed to break the covalent bonds between the carbon atoms. Graphite can **conduct** electricity.



Graphene is one layer of graphite. It is very **strong** because of the covalent bonds between the carbon atoms. As with graphite, each carbon in graphene is bonded to three others with one **free delocalised electron**. Graphene is able to **conduct electricity**. Graphene, when added to other materials, can make them even stronger. Useful in electricals and composites.

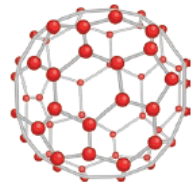


Nanoscience refers to structures that are **1–100nm** in size, of the order of a few hundred atoms. Nanoparticles have a **high surface area to volume ratio**. This means that smaller amounts are needed in comparison to normal sized particles. As the side length of a cube decreases by a factor of 10, the surface area to volume ratio increases approximately

Name of Particle	Diameter
nanoparticle	1–100nm
fine particles ($PM_{2.5}$)	100–2500nm
coarse particles (PM_{10})	2500–10000nm

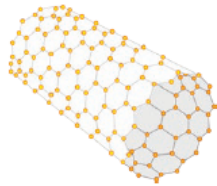
Polymers are long chain molecules that are made up of many smaller units called **monomers**. Atoms in a polymer chain are held together by **strong covalent bonds**. Between polymer molecules, there are **intermolecular forces**. Intermolecular forces **attract** polymer chains towards each other. Longer polymer chains have stronger forces of attraction than shorter ones therefore making stronger materials.

Molecules of carbon that are shaped like hollow tubes or balls, arranged in hexagons of five or seven carbon atoms. They can be used to **deliver drugs into the body**.



Buckminsterfullerene has the formula C_{60}

Carbon Nanotubes are tiny carbon cylinders that are very long compared to their width. Nanotubes can conduct electricity as well as strengthening materials without adding much weight. The properties of carbon nanotubes make them useful in electronics and nanotechnology.



Science – Year 9 – Term 3 part 2 – Fundamentals of Physics – Powering the world

Current and Circuit Symbols

Current: the flow of electrical charge.

Potential difference (voltage): the push of electrical charge.

Resistance: slows down the flow of electricity.

cell		closed switch		fuse	
resistor		ammeter	A	LDR	
battery		voltmeter	V	LED	
variable resistor		bulb		thermistor	
open switch		diode			

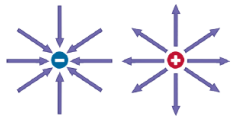
Static

A build-up of static is caused by friction. When materials are rubbed together, the electrons move from one to the other. One material becomes positively charged and the other is negatively charged. The positive charges do not move.

Too much static can cause a spark. If the potential difference is large enough, the electrons can jump across the gap - this is the spark.

repulsion attraction repulsion

Electric charges create an **electric field**. The closer you get to the object, the **stronger** the field. The electric field can be shown by drawing field lines, they go from **positive to negative**.



If a charged object is placed near the field, it will experience a force. The force becomes stronger as the charged object gets closer.

charge flow = current × time

potential difference = current × resistance

power = potential difference × current

power = (current)^2 × resistance

energy transferred = power × time

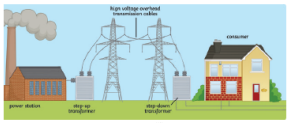
energy transferred = charge flow × potential difference

The National Grid

The National Grid is a system of **cables** and **transformers**. They transfer electrical power from the power station to where it is needed. Power stations are able to change the amount of electricity that is produced to meet the demands. For example, more energy may be needed in the evenings when people come home from work or school. Electricity is transferred at a low current, but a high voltage so less energy is being lost as it travels through the cables.

Step-up transformers – increase the voltage as the electricity flows through the cables.

Step-down transformers – decrease the potential difference to make it safe.

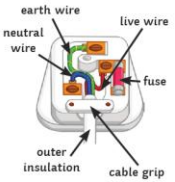


Electricity in the Home

AC – alternating current. Constantly changing direction - UK mains supply is 230V and has a frequency of 50 hertz (Hz).

DC – direct current. Supplied by batteries and only flows in one direction.

Cables – most have three wires: live, neutral and earth. They are covered in plastic insulation for safety.



Live wire – provides the potential difference from the mains.

Neutral wire – completes the circuit.

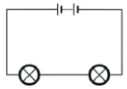
Earth wire – protection. Stops the appliance from becoming live. Carries a current if there is a fault.

Touching the live wire can cause the current to flow through your body. This causes an electric shock.

Series and Parallel Circuits

Series Circuits

Once one of the components is broken then all the components will stop working.



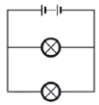
Potential difference – the total p.d. of the supply is shared between all the components. $V_{total} = V_1 + V_2$

Current – wherever the ammeter is placed in a series circuit the reading is the same. $I_1 = I_2 = I_3$

Resistance – In a series circuit, the resistance will add up to make the total resistance. $R_{total} = R_1 + R_2$

Parallel Circuits

They are much more common - if one component stops working, it will not affect the others. This means they are more useful.

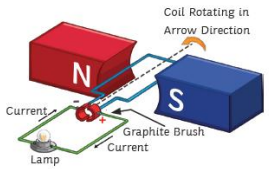


Potential Difference – this is the same for all components. $V_1 = V_2$

Current – the total current is the total of all the currents through all the components. $I_{total} = I_1 + I_2 + I_3$

Resistance – adding resistance reduces the total resistance.

When the wire carrying the current is **coiled**, the motor effect acting on it causes the wire to **rotate**. This is how an **electric motor** works.

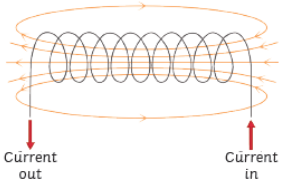


A circular **magnetic field** is produced when a current is passed through a conducting wire. This produces an **induced magnet**.

Switching off the current causes the magnetism to be lost.

The strength of the magnetic field can be increased by increasing the current flowing through the wire. The strength of the magnetic field is stronger closer to the wire.

Coiling the wire to form a **solenoid** will also increase the strength of the magnetic field. The strength of the magnetic field created by a solenoid is strong and uniform throughout.



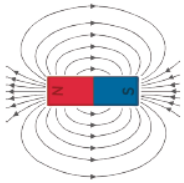
To increase the strength of the magnetic field around a solenoid you can...

- add an iron core;
- increase the number of coils in the wire;
- increase the current passing through the wire.

An **electromagnet** is a solenoid with an iron core. Electromagnets are **induced magnets** and can be turned on and off.

Electric motors, loudspeakers, electric bells and remotely controlled door locks all use **electromagnets**.

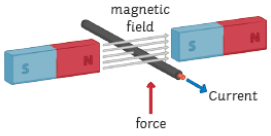
The **magnetic field** is the area surrounding a magnet where the force is acting on another magnet or magnetic material. It can be observed using a compass placed at different points around a bar magnet. The field lines can be drawn by using the compass to mark the direction at a range of points.



A magnet always causes a magnetic material to be **attracted**. The strength of the magnetic field is determined by the proximity to the magnet.

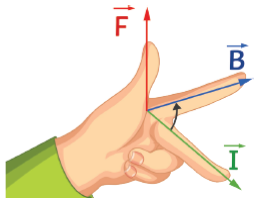
When looking at a diagram of magnetic field lines, the force is strongest where the lines are closest together. The magnetic field of the magnet is strongest at the poles. The direction of the magnetic field shows the direction the force would act on another north pole. As a result, magnetic field lines always come away from the north pole (like poles repel) and towards the south pole (unlike poles attract).

The earth produces a magnetic field and a magnetic compass uses this to help aid navigation. The core of the earth is made of iron (a magnetic material). A compass contains a small bar magnet shaped as a needle, which points in the direction of the earth's magnetic field.



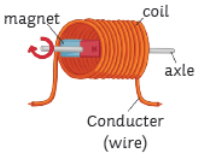
From the equation we can see that the force acting on a given length of wire (e.g. 1m) will be increased if the current increases or the magnetic flux density increases. If the current flowing through a wire is **parallel** to the magnetic field, then **no force** is produced – there is no motor effect.

You might be shown a diagram and asked to indicate the direction of the force produced. **Fleming's left-hand rule** can help you do this because it represents the **relative orientation** of the force produced by the motor effect.



A **generator** uses an induced potential to produce an alternating current.

A magnet on an axle is positioned in a coil of wire. The poles of the magnet are on the outer edges as the magnet is spun on the axle. Every half-turn on the axle rotation, the poles are reversed (swap sides in the coil) and this causes the induced potential to change direction. This produces an alternating current in the conducting wire.

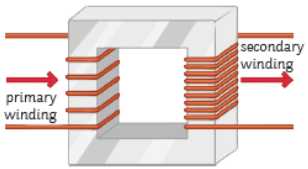


A **transformer** changes the **voltage** using an **induced potential** (electromagnetic induction).

Transformers only work for an **alternating current potential difference**. A transformer is simply **two coils of wire** (primary coil and secondary coil) connected by an **iron core**.

There are two main types:

Step-up transformers: **increase** (step-up) the **voltage**. There are fewer primary coils than there are secondary coils.



Step-down transformers: **decrease** (step-down) the **voltage**. There are more primary coils than there are secondary coils.