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Our Children, Our Community, Believe it can be done!

Headteacher's 'Thought for the week'

Broadway Academy hosted an Iftar Party with guest of honour Andy Street CBE. We listened to recitals from students, Andy Street, the local mayor for Birmingham spoke about the importance of inclusion and Mr Skelton spoke about the virtue of 'Gratitude' being the mother of all virtues! Over 150 guests were in attendance including: parents, students, local Imams, businessmen and clergy from Aston Churches together. The feedback from this event has been excellent. Thank you to all who took time to attend and also to our wonderful catering team, led by Faru, who finished clearing up at 1am!



This week, I was delighted to invite Sheikh Mangochi from Ocean Secondary School, Tanzania to stay with me and my family. We learnt a lot about Matwara in Tanzania as well as a few words of Swahili. The aim of the visit was to develop a partnership with Broadway Academy. Sheikh Mangochi spent time visiting Birmingham, listening to excellent presentations from our Middle Leaders on School Improvement, observing lessons and meeting the Broadway and Aston community. We enjoyed a lovely evening at an Iftar Party at the Broadway Mosque.



Visit to Helsby High School

On Monday 11th June 2018, twelve Year 10 students visited a school in Cheshire called Helsby High School. The students were given an insight into a school which is very different to Broadway Academy and has a different demographic. They had an opportunity to have a tour of the school and present their work about Islam to two Year 7 RE classes. They were also able to confidently answer questions raised by Helsby High students about their faith and what it means to them being young Muslims living in the UK.

Their behaviour was outstanding and they proved to be a real credit to Broadway Academy and the RE department.

Below is what some of the students said about their experience:

"It was a good day and all the students were very friendly and polite. I noticed that our school is more multicultural than Helsby High School."

(Maaria F. 10CA)

"Going on a trip to a different school made me realise how multi-cultural our school is. I enjoyed delivering my session on the Five Pillars to the Year 7 students. I was also surprised by their good knowledge of Islam."

(Zarine S. 10BA)

"It was an excellent experience, and I enjoyed meeting and talking to the students at Helsby High School."

(Ibrahim J. 10BA)

"Great experience. I loved talking to the students and teaching them. I enjoyed the opportunity to interact with the students at Helsby High School."

(Mir-Humza H. 10AA)



The Rise of Teenage Money Mules

Teenagers are being targeted by criminals in money laundering schemes wherein they are encouraged to give up their bank details in exchange for a percentage of illegal cash.

Money mules are individuals who give up their bank account details—either intentionally or unknowingly—to allow criminals to deposit large sums of money into their account. The money mule is then expected to withdraw the money and take it to a specified person, or is asked to make a bank transfer.

Usually, money mules get a percentage cut of the money they are laundering, but many are forced to act as money mules by threats of violence, whereas others are led to believe that they are fulfilling a genuine job role and do not realise that a crime is being committed.

Money laundering in any form is illegal in the United Kingdom. It is believed that criminals are targeting vulnerable teenagers because they can be easily convinced to hand over their bank details in exchange for a cut of the cash, and may not realise the true extent of the consequences they could face.

During the first half of 2017, over 4,000 young people under the age of 21 were found to be operating as money mules in the United Kingdom.

What are the consequences?

The consequences if found to be money laundering are severe. You could face imprisonment of up to 14 years, and in the very best of cases, your bank account will be closed and flagged as "misuse of facility", which has a serious impact on your credit score and can make it extremely difficult to open a new bank account for years. Some young people who have been caught money laundering have been given a 6-year ban on opening a new bank account. This level of consequence can obviously cause a variety of difficulties for young people at the start of their lives, particularly those studying at university who require a bank account in order to receive student loans, or young people looking for work who may be restricted to applying only for cash-in-hand jobs until they are able to open a bank account again.

What if you don't know that you've been used as a money mule?

The consequences still remain for people who are unaware that they have been used as money mules. The excuse, "I didn't realise what I was doing," won't stand up in court. This is why it's extremely important for parents to safeguard their children from being involved in money laundering crimes.

How do young people become money mules?

There are many circumstances under which a young person can become involved in money laundering.

There has been a recent spate of posts and profiles on social media that have been actively recruiting young people to get involved as money mules. Many of these posts make the crime sound like a job, promoting titles such as "UK Transfer Agent" and specifying that personal bank account details will need to be provided to carry out the role. There is usually a tempting promise of large sums of money in exchange for "an hour's work".

Other social media posts use a sort of code language, using phrases such as "5K drop" to describe the amount of money that needs to be laundered, and "squares and deets" as a term for bank cards and account details, instead of explicitly using words that might be tracked (e.g. transfer, bank details). This hints that there is a large network of young people out there who are tuned in to the activity and are actively seeking opportunities to work as money mules for these criminals.

Criminals have also been known to approach teenagers at the school gates or as they are walking home. They use forcible behaviour and make the youngsters feel threatened, or pester them enough with promises of a cut of the money that the individual eventually gives in and passes over their bank account details for the criminal to use.

What can I do if I think a young person has been used as a money mule?

The best approach if you believe a young person has been used as a money mule is to be honest and rational. Explain that you are trying to help them, and that there are more important things at stake here than a few hundred pounds of cash.

There are some very serious and damaging consequences that come from being involved in money laundering, so you should take care to describe the impact that these consequences could have on a young person's life, without scaring them too much that they decide not to disclose any information to you.

You should also take the time to explain that money has to be earned by working for it, and that "easy money" is something to always be suspicious of. There is no way that a small job would pay so highly if there wasn't massive risk involved. If it really was all easy and simple, everyone would be doing it.

Ask how and where they found out about being a money mule, then discuss their answer with them and make them reason with the idea that this source was not a reliable place to search for work.

Make sure that they are aware of how important it is to never tell anybody your bank details, especially not your

PIN number or the numbers on your bank card. Teach them that not even the people who work for banks will ever ask for this information on an email or phone call, and that, if anybody does, they are most likely trying to access your bank account illegally.

Finally, if you suspect that a young person has been involved in money laundering, make it a regular habit to sit down and check through their bank statements with them, or ask their parents to do this with them. Do they know the nature of all their transactions? Is there anything on their statement that they do not know about? If you find something that doesn't seem right, flag it and try to find out what it might be.

MRS S.K. CHAGGAR
SENIOR SAFEGUARDING LEAD

V4C Focus

INTEGRITY = HONESTY

Why is honesty important?

1. Honest people are trustworthy, dependable, and respected by others.
2. It is the right thing to do. It feels good.
3. Telling the truth lets everyone know what happened and keeps the wrong person from being blamed for something they did not do

What are the consequences of dishonesty?

1. Losing the trust and respect of others.
2. The need to tell more lies in order to cover up.
3. You may face punishment and embarrassment.

What are the qualities of an honest person?

1. Tells the truth, regardless of the consequence.
2. Admits when he or she is wrong.
3. Does not cheat or steal.
4. Does not exaggerate to make things seem different than they are.
5. Keeps promises and encourages others to be truthful.

THIS WEEK'S GOLDEN WORDS

'Honesty is more than not lying. It is truth telling, truth speaking, truth living and truth loving.'

James E Faust

STEM Competitions & Challenges

STEM Workshops

STEM Events

STEM Trips

If you are interested please see
Ms Ayub in 010 or 07
Thursday lunchtime

Kihone Takes the County Title

Year 8 student Kihone leapt to his second successive county title, winning the West Midlands competition with a jump of 1.65. Competing for North Birmingham, he was able to beat challengers from Solihull, Walsall, Coventry, South Birmingham and Dudley. Despite being a year younger than others, he beat the best year eight and year nine students in the county. He will now represent our county at the Mason Trophy next Saturday and hopefully at the English Schools competition in July.

Broadway Raiders also travelled to Worcester this weekend, to take place in the annual Kempsey FC tournament. They cruised through the group stages, winning 3-1, 9-2 and 4-0. Many of the players grew tired as the tournament progressed, as some players were resting for the holy month. Broadway eventually lost a close final 2-0, against a team they beat 3-1 in the group stages, with only one substitute and fatigue setting in. A special thanks to Mrs James, our drama specialist and head of year 7 who has shown she has many talents, for stepping in for Mr Robbins and leading the team to a superb result in a high-profile tournament.

Broadway Win Nail-biting Encounter to Book a Place in The Warwickshire Cup Semi Final

Broadway's year 8 team were drawn against King Edwards in the quarter final of the county cup. Solid bowling saw Broadway reduce King Edwards to a total of 80. Needing 81 to win, Broadway made a bright start, only to lose wickets in the 8th and 9th over. With just three balls left, Broadway needed 3 runs to book their place in the semi final. Arbaz stepped up, hitting the winning run off the final delivery of the match!

They made lighter work of Nishkam in their Birmingham league match though, smashing a huge 121 runs and then bowling them out for just 34. Aqeel took four wickets, including their opening batsmen, but Isa won man of the match, hitting an unbeaten 53 and following it up with two wickets.

BLESMA

Thursday 21st June saw Broadway Academy have a visit from the charity BLESMA. PA addressed key stage 3 and 4 and told his incredible story of his time in Afghanistan and losing both his legs at the age of 18. His story showed great resilience and determination to continue to be happy and live life to the full. He talked about the various problems and setbacks he had experienced and how despite this he went on to get a degree and a full time job and lead a normal life. A true inspiration!



1 MILLION Child Trust Funds
worth up to **£1000 OR MORE**
are yet to be claimed
HAVE YOU FOUND YOURS?

.....



TO HAVE QUALIFIED
FOR A CHILD TRUST
FUND, YOU MUST
HAVE BEEN BORN
BETWEEN
1ST SEPTEMBER 2002
AND
2ND JANUARY 2011

.....

RE-LINK WITH YOUR CHILD TRUST FUND

CHECK FIRST WITH YOUR PARENT(S)/GUARDIAN

IF THEY CAN'T HELP, VISIT

WWW.SHARES4SCHOOLS.CO.UK/USEFUL-RESOURCES/FIND-CTF



Poster designed by Archie Murray, Colyton Grammar School

Published by The Share Foundation and The Share Centre
sharefound.org share.com



in partnership with TISA

Background © Kjpargeter - Freepik.com

BULLYING: Tips for children and young people

Are you a young person who's being bullied? Or maybe you're witnessing others being bullied? Either way there are ways around it. Here are the Broadway Academy anti-bullying tips for you:

It doesn't matter what colour hair you have; how you speak; how you walk; how you talk - it is not your fault if you get bullied. We are all different in some way and that's what makes us amazing.

Whether you are a boy or a girl, old or young, big or small - bullying makes you feel rubbish and it's okay to be upset about it. The important thing is that you tell someone about it.

If you feel you can, talk to a teacher you trust or your parents, brother or sister. If you don't want to do that you can always post it in the 'red worry box' [outside your SSM office] or leave a message on the SHARP system [this can be accessed via the website - remember to leave your name and form].

Keep a record of what happened, when it happened, and who was involved. If the bullying is online, keep the evidence - save or copy any photos, videos, texts, emails or posts.

It can be tempting if you are being bullied to retaliate - to send a horrible message back to someone, to try and embarrass and hurt the other person, or to fight back. This is not a good idea - you might end up getting into trouble or get yourself even more hurt.

Think about other ways you can respond to bullying. For example, practise saying: "I don't like it when you say that/do that - please stop." Think about other people who can help you if you are being bullied - this could be other classmates, or a teacher.

Only hang out with people who make you feel good about yourself. If someone constantly puts you down they are not a real friend and not worth your time.

Be kind to yourself, and do things that make you feel good, relax and make new friends. You might play an instrument; write lyrics; draw cartoons; dance; act or join a sports club. This is your life so make sure it's the best life possible - don't let anyone bring you down.

Remember to be kind to other people! Just because someone is different to you - that doesn't mean you are better than them or have a right to make them feel bad. If you mess up, say sorry. You don't have to be friends with everyone - but you should always show respect, make it clear that you don't like it when people bully others, and stick up for people who are having a hard time.

Tips for parents and carers

If your child is being bullied or you think they might be, here are some tips on how to talk to them and prevent further bullying:

If your child is being bullied, don't panic. Explain to your child that the bullying is not their fault and together you will sort this out.

Bullying is never acceptable; and should always be taken seriously. It is never your child's fault if they've been bullied.

Try and establish the facts. It can be helpful to keep a diary of events. If the bullying is online, save or copy images and text.

Find out what your child wants to happen. Help to identify steps you can take; and the skills they have to help sort out the situation. Make sure you always keep them informed about any actions you decide to take.

You may be tempted to tell your child to retaliate but this can have unpredictable results. Your child might get into trouble or get even more hurt. Rather - role play non-violent ways they can respond to children that are bullying them (e.g. "I don't like it when you say that to me / do that to me. Stop."); show them how to block or unfriend people if the bullying is online and help them identify other friends or adults that can support them.

Encourage your child to get involved in activities that build their confidence and esteem, and help them to form friendships outside of school (or wherever the bullying is taking place).

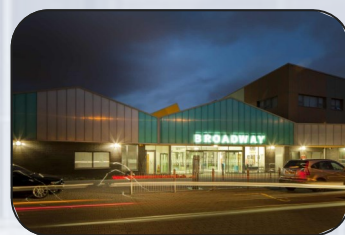
Get some advice:

Speak with your child's Student Support Manager or Student Support Assistant.

MRS S.K. CHAGGAR
ASSISTANT HEAD / DESIGNATED
SAFEGUARDING LEAD

School Improvement

Do you or your parents/carers have a good idea how to make our school *even better*?



Email your suggestions to :-

suggestions@broadway-academy.co.uk

We would like to encourage Parents/ Carers to speak to their children about Personal safety awareness and keeping safe while their young people are on their own.

Please help keep your child safe and talk about personal safety. Please read the top tips with them and discuss their questions or concerns. Explain to them why you are concerned so that they can empathise with your concerns and why they should adopt your concerns as theirs. This will only help to re-enforce the safety messages they receive in school.

People you do not know (strangers)

- Watch out for cars that are following you
- Never get into a car with a person you do not know
- Never approach a person you don't know sitting in a car
- Stay strong, saying no is not wrong
- Never tell a stranger your name or address
- Don't believe what strangers tell you
- Don't accept gifts, treats or sweets from strangers
- Keep your distance and never go anywhere with someone you don't know
- Trust your feelings, if it doesn't feel right, it isn't

Yell and Tell

- Don't be afraid to say no
- If a stranger makes you feel unsafe, always 'yell and tell'
- Yell 'help' or 'I don't know you' to get someone's attention - then tell someone you trust what has happened
- Don't let anyone make you feel unsafe

Know a Safe place

- A safe place is a place that has someone you can trust and talk to, such as a school, shop, police station or friend's house
- If someone does make you feel unsafe, always run to a safe place

When Playing Outside

- If a stranger comes near, be safe and call out so your parents can hear
- Never approach or talk to a stranger that comes into your garden
- If someone makes you feel unsafe go back inside and tell your parents about it

- Always play in an area where your parents can see you

Using a computer

- If someone asks you for personal information online remember "when online, always decline!"
- Don't give out your name or address to a stranger online
- Be careful who you talk to
- Never tell anyone you're home alone

Using a phone

- When on a phone stay in a safe place and say no in a firm tone
- Never tell a stranger your name or address
- Don't trust what a stranger tells you on the phone
- If you answer the phone and you don't know the person talking, always let your parents talk to them

When at home

- If you hear a knock on the door, day or night, don't invite strangers in, no matter what they say to you
- Never answer the door alone, even when your parents are home
- Never invite strangers into your home

Help your friends

- Always stay with your friends, family, or parents and never walk off
- Tell an adult you trust if you feel unsafe while with your friends
- If you see your friend do something that worries you tell them then tell an adult you trust

Going to and from school

- Never accept lifts from people you do not know
- If someone makes you feel scared or uncomfortable avoid them and tell an adult you trust
- Trust your feelings, if it doesn't feel right, it isn't
- If someone approaches you, you are allowed to ignore them
- Don't use short cuts where you will be on your own
- Walk with friends to and from school
- Carry a mobile phone that is charged, you don't need credit to phone 999
- Go to the nearest safe place if you feel unsafe such as a shop, home or school

When can you leave a child at home?

The law doesn't say an age when you can leave a child on their own, but it's an offence to leave a child alone if it places them at risk. Use your judgement on how mature your child is before you decide to leave them alone, e.g. at home or in a car.

The National Society for the Prevention of Cruelty to Children (NSPCC) says:

- Children under 12 are rarely mature enough to be left alone for a long period of time
- Children under 16 shouldn't be left alone overnight
- Babies, toddlers and very young children should never be left alone

Parents can be prosecuted if they leave a child unsupervised 'in a manner likely to cause unnecessary suffering or injury to health'. Under the Children and Young Persons (England and Wales) Act 1933, the Children and Young Persons (Scotland) Act 1937 and the Children and Young Persons (Northern Ireland) Act 1968, parents and carers can be prosecuted for neglect. This means that they can be fined or sent to prison if they are judged to have placed a child at risk of harm by leaving them at home alone, regardless of where in the UK the child lives.

Advice for leaving a child at home?

Whether you or your child are comfortable with the idea will often depend on how mature and adaptable your child is.

The advice below is there to help you make up your mind about whether leaving your child home alone is a good idea, as well as tips for choosing appropriate childcare if you decide it's not.

- Babies, toddlers and very young children should never be left alone
- Children under the age of 12 are rarely mature enough to cope in an emergency and should not be left at home alone for a long period of time
- Children under the age of 16 should not be left alone overnight
- Parents and carers can be prosecuted for neglect if it is judged that they placed a child at risk by leaving them at home alone
- A child should never be left at home alone if they do not feel comfortable with this, regardless of their age

- If a child has additional needs, these should be considered when leaving them at home alone or with an older sibling
- When leaving a younger child with an older sibling think about what may happen if they were to have a falling out - would they both be safe?

Questions to consider?

Would they know how to contact you or another family member or friend if they needed to?
Do they have these contact numbers to hand?
How would they feel about being left alone - pleased to be given the responsibility or scared by the thought of it?

If your child is over 16 and you think they're ready to be left alone overnight, let them know exactly where you are and how they can get in contact if anything goes wrong. And remember to have those conversations about who they'll invite over while you're away!

S.K.CHAGGAR

Senior Designated Safeguarding Lead

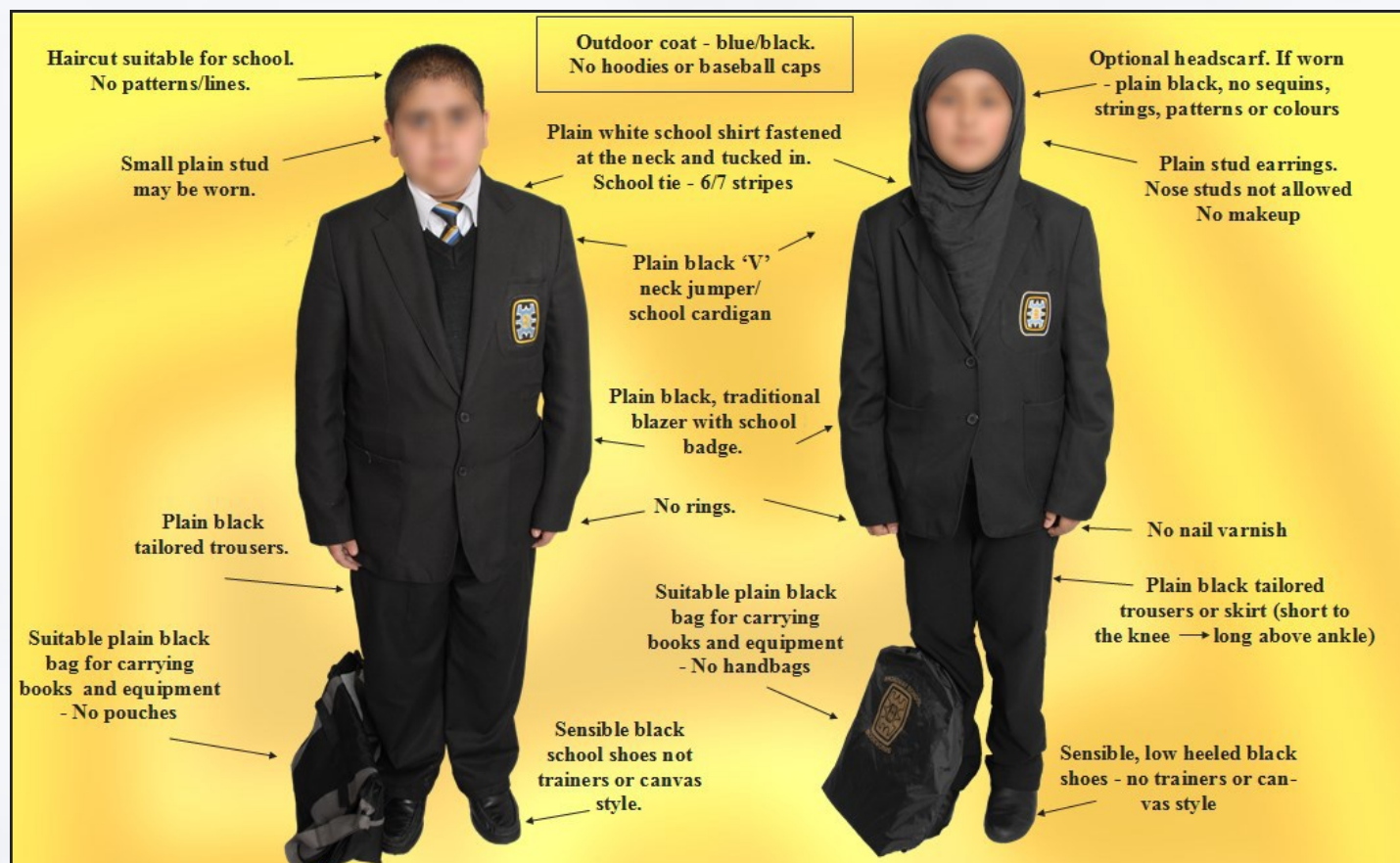
Geography - Name that Place!

This temple can be found in the continent of Asia, and within China's capital city. See Miss Laverty in Pi10 with the correct answer to claim your prize.



School uniform

The Broadway Academy uniform shows that pupils are part of an organisation. Wearing it says "we're all in this together" and are part of Team Broadway. Also, if you wear your uniform with pride, it means you are half way there to being respectful; buying into what the organisation is all about. Uniforms also give students a sense of belonging and create an identity for the school in the community. On that note, please note that "Hooded Jumpers", Caps or Trainers are not part of the Broadway uniform policy.



Times of the school day

Monday to Thursday

Period 1	08:40am - 09.40am
Period 2	09.40am - 10.40am
Form Time	10.40am - 11.00am
BREAK	11.00am - 11.20am
Period 3	11.20pm - 12.20pm
Period 4	12.20pm - 1.20pm
Lunch	1.20pm - 2.05pm
Period 5	2.05pm - 3.05pm

Friday

Period 1	09.00am - 10.00am
Period 2	10.00am - 11.00am
BREAK	11.00am - 11.20am
Period 3	11.20pm - 12.20pm
Period 4	12.20pm - 1.20pm
Lunch	1.20pm - 2.05pm
Period 5	2.05pm - 3.05pm

	Lunchtime			After School		
Monday	Yr 9 Badminton Yr9 / 10 Football Yr11 Football	S.Hall Astro GYM	Mr Hussain GW	Badminton (Pre-Booked session only) Yr8 Football	S.Hall Astro	Miss Bolton Mr Robbins
Tuesday	Yr11 Football Yr9 / 10 Football Trampolining	S.Hall Astro GYM	GW ST			
Wednesday	Yr11 Football Yr9 / 10 Football Girls Football	S.Hall Astro GYM	GW ST	Girls Fitness Yr11 Football	F.Suite Astro	Mrs Webb Mr Robbins
Thursday	Yr11 Football Yr9 / 10 Football Girls Football	S.Hall Astro GYM	GW Mr J Ahmed	Yr9 Football Basketball Table-Tennis (pre-booked sessions only)	Astro S.Hall GYM	Mr Taylor ST ST
Friday	Yr11 Football Yr9 / 10 Football Friday Prayers	GYM Astro Sports Hall	GW	Girls Football Judo	Astro Drama 2	Coach Coach

Interventions

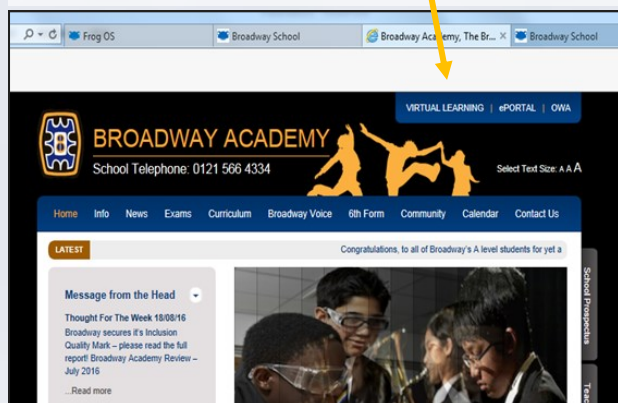
Art	Friday Lunch	All Years	R8	SD	Art Club
Design Technology	Lunchtimes	Year 10 & 11	R10	WB	D and T Coursework Club
Design Technology	Thursday Lunch	Year 11	R10	HO	Graphics Coursework Club
Design Technology	Thursday After school	Year 11	R3	RB	Textiles Coursework Club
Design Technology	Thursday After school	Year 11	R10	HO	Graphics Coursework Club
Design Technology	Friday After school	Year 11	R10	HO	Graphics Coursework Club
Design Technology	Friday After school	Year 11	R3	RB	Textiles Coursework Club
Health and Social Care	Tuesday After school	Year 9,10 & 11	R5	KP	Intervention
Languages	Tuesday and Wednesday Lunchtime	Year 9, 10, 11	G7	GS	Bengali Support

Extra-Curricular activities - Whole school

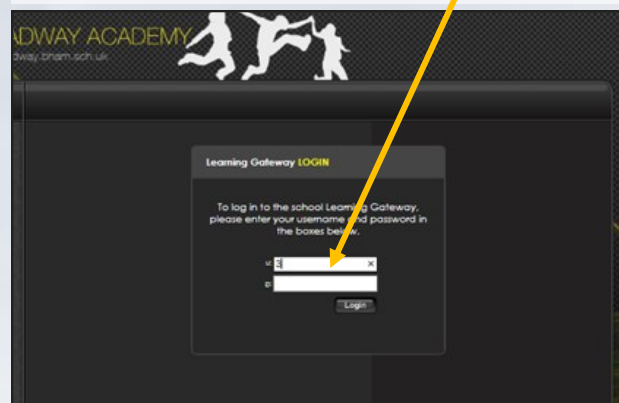
Art	Art Club	Friday	13.20-14.00	All Years	R8	SD
Careers	UCAS Progress/ Journey planning/ interview techniques	Thursday	15.05-16.00	Year 11	R1	Miss Williams
Design Technology	Food Club	Monday	15.05-16.05	All Years	R4	RB
Design Technology	Textiles Club	Monday	13.20-14.00	Year 7 & 8	R3	RB
Drama	School Play Rehearsals	Monday, Tuesday, Thursday	15.05- 16.30	All Years	Drama Studio	NF
English	LAMDA/Poetry by heart club	Monday	13.20-14.00	Year 7 & 8	Y3	RS
LRC	Reading Club	Monday	15.05 - 16.00	All Years	LRC	LRC Staff
LRC	Independent study session	Wednesday	15.05 - 16.00	All Years	LRC	LRC Staff
Maths	Chess Club	Wednesday and Thursday	13.20-14.00	Year 7	B10	TR/HD
Maths	Homework Club	Wednesday and Thursday	13.20-14.00	All Years	B2	TR/HD
Music	Singing Club	Tuesday	13.20-14.00	All Years	Pu1	Miss Chitate
Music	Guitar Club	Wednesday	13.20-14.00	All Years	Pu1	CL
Music	Drum Club	Thursday	13.20-14.00	All Years	Practice Rooms	CL
Prayers	Prayers	Friday	13.45-14.00	All Years	Sports Hall	AHY
SEND	Breakfast Club	Monday - Thursday	8.15-8.35	All Years	Red corridor	SEND team
SEND	Lunchtime Club	Monday - Thursday	13.40-14.00	All Years	Red corridor	SEND team
SEND	Afterschool Club	Monday - Thursday	15.05-15.40	All Years	Red corridor	SEND team
Science	Homework Club	Wednesday	13.20-14.00	All years	O3	GA

Homework on Frog - How to access your child's homework

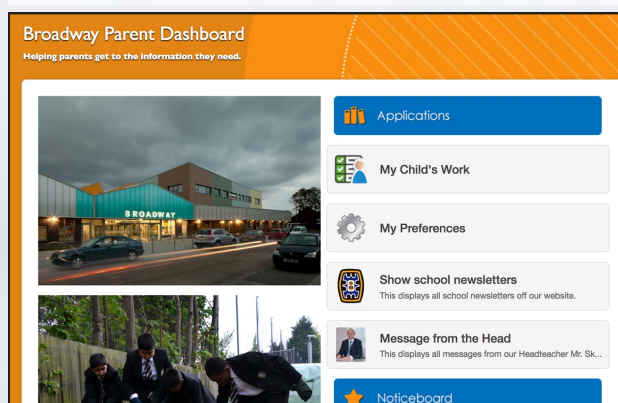
1 - Click on Virtual Learning (in blue, by the top right)



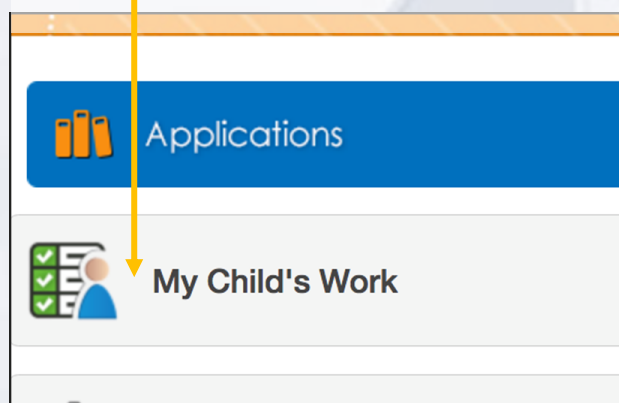
2 - Enter the username and password you have been given by school.



3 - Welcome to frog Parents.



4 - Click on the My Child's Work to see homework that has been set.



5a - Click the i button to read a review of the homework.

5b - Click the title of the home work to see details information.

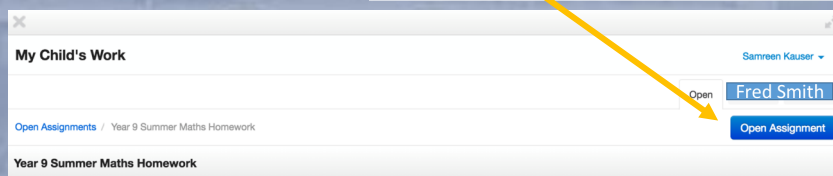
5c - If you have more than one child in the school, you can pick which child to view by clicking the arrow

My Child's Work

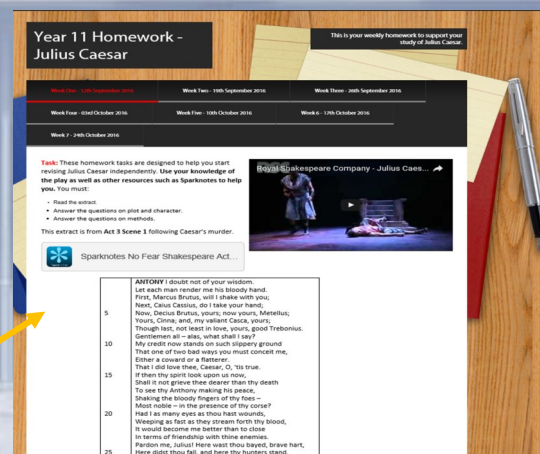
Open Assignments

	Assignment Name	Subject	Issue Date	Due Date	Teacher	Submitted	Mark Given
	Research on Trigonometry	Mathematics	12/09/2016	26/09/2016	S PAULY	Not Completed	Not Released
	Year 9 Summer Maths Homework	Mathematics	18/07/2016	10/09/2016	M DARR	Not Completed	Not Released

6 - Click the open assignment button to see the actual home work



7 - Here's an example of a piece of homework.



GCSE Maths - Edexcel

Key Dates

Paper 1 – Thursday 23rd May 2018 – Non-calculator

Paper 2 – Thursday 7th June 2018 – **Calculator**

Paper 3 – Tuesday 12th June 2018 – **Calculator**

- Make sure you have all the equipment needed for your exams!
- Bring your own **scientific calculator** to lessons and learn how to use it.

You must **memorise** the following **formulae** for your GCSE Maths exams.

Names of 2D Shapes



triangle
3 Sides



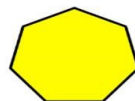
quadrilateral
4 Sides



pentagon
5 Sides



hexagon
6 Sides



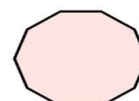
heptagon
7 Sides



octagon
8 Sides

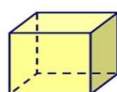


nonagon
9 Sides



decagon
10 Sides

Names of 3D Shapes



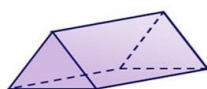
A cube



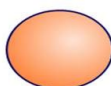
A square-based pyramid



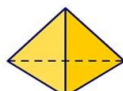
A cylinder



A triangular prism



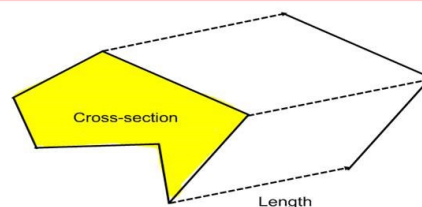
A sphere



A tetrahedron

Volume of a Prism

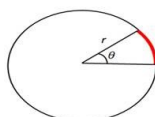
$$\text{Volume of prism} = \text{Area of cross-section} \times \text{length}$$



Arcs and Sectors

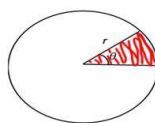
Higher ONLY

Arc Length - a part of the circumference



$$\text{Arc Length} = \frac{\theta}{360} \times \pi d$$

Area of a Sector - a part of the area



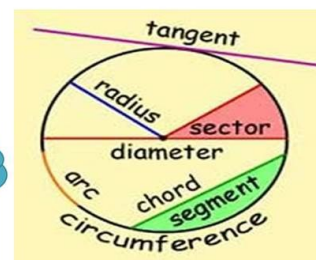
$$\text{Area of sector} = \frac{\theta}{360} \times \pi r^2$$

Circles

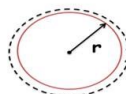
Area of a circle:



$$\text{Area} = \pi r^2$$



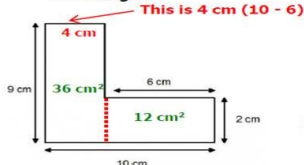
Circumference of a circle:



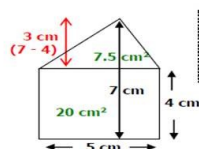
$$\begin{aligned} \text{Circumference} &= 2\pi r \\ &= \pi d \end{aligned}$$

Compound Shapes

2 rectangles

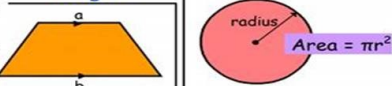
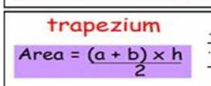
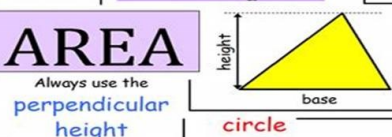
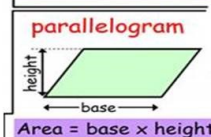
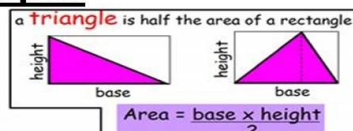
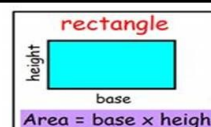


Compound shapes are made up of 2 or more shapes. Split the shapes up, find their areas and then add together. See the examples for more help.

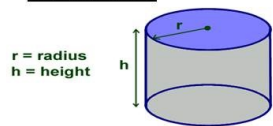


$$\begin{aligned} 4 \times 5 &= 20 \text{ cm}^2 \\ \frac{1}{2} \times 5 \times 3 &= 7.5 \text{ cm}^2 \\ \text{Total Area} &= 27.5 \text{ cm}^2 \end{aligned}$$

Area of 2D Shapes



Cylinders

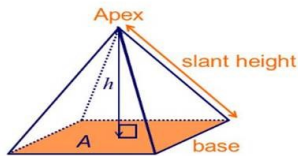


$$\text{Volume} = \pi r^2 h$$

$$\text{Total surface area} = 2\pi r^2 + 2\pi rh$$

Higher ONLY

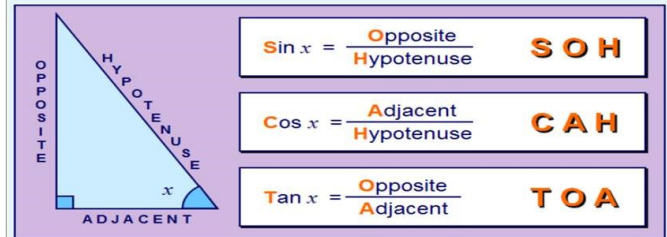
Pyramids



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

Trigonometry - Formulae for Right-Angled Triangles

The three trigonometric ratios

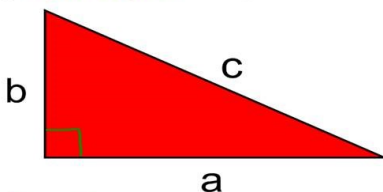


Remember: **SOH CAH TOA**

NOTE: Label opposite and adjacent sides depending on where the angle is.

Pythagoras' Theorem

For any right-angled triangle

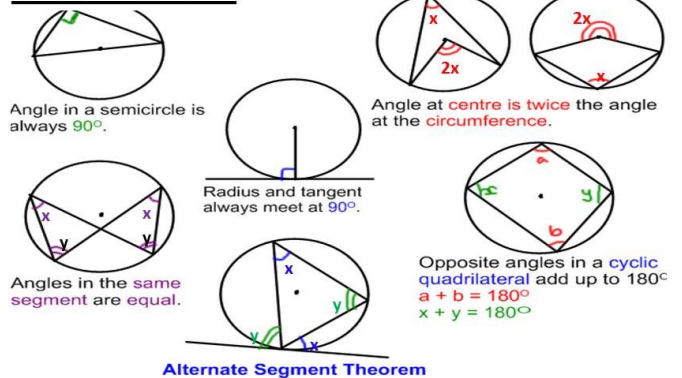


$$a^2 + b^2 = c^2$$

where c is the hypotenuse

Circle Theorems

Higher ONLY



Constructions and Loci

1. The locus from a point.

To find the locus from one point (for example 5 cm from point P), put your compass to 5 cm and draw a circle around the point.

In exam questions you don't always need to draw full circle but instead an arc will do.

2. The locus from a line.

To find the locus from a line (for example the line AB), draw two parallel lines from AB and then two semicircles, one from A and one from B. Make sure the semicircles have the same size radius as the parallel lines.

3. The locus from two points.

This is called the perpendicular bisector. Set your compass more than half way the distance between A and B. Draw two arcs from A and two arcs from B. These will cross. Finally draw a straight line from where the two arcs crossed all the way through.

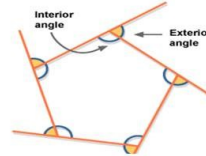
In the exam, look out for the phrase "equidistant from A and B".

4. The locus from two lines.

This is called the angle bisector. Draw two arcs from O (to create A and B). Draw another set of arcs, from A and B. These will cross at C. Finally draw a line from O to C.

In the exam, look out for the phrase "equidistant from OX and OY".

Angles in Polygons



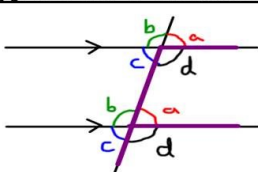
$$\text{Interior angle} + \text{Exterior angle} = 180^\circ$$

$$\text{Total interior angles of an } n\text{-sided shape} = (n - 2) \times 180^\circ$$

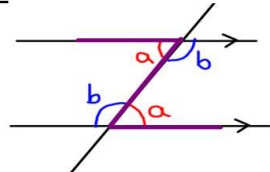
POLYGON	NO. OF SIDES	SUM OF INTERIOR ANGLES
TRIANGLE	3	$(3-2) \times 180 = 180^\circ$
PENTAGON	5	$(5-2) \times 180 = 540^\circ$
OCTAGON	8	$(8-2) \times 180 = 1080^\circ$

$$\text{Sum of Exterior Angles} = 360^\circ \text{ for any shape}$$

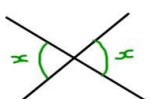
Angles in Parallel Lines



Corresponding Angles (F Angles) are the same.



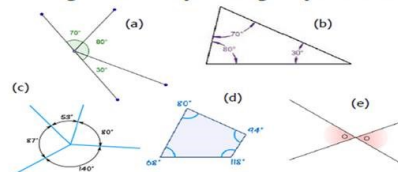
Alternate Angles (Z Angles) are the same.



Vertically opposite angles are the same

Angles Facts

Angles are easy as long as you know the facts

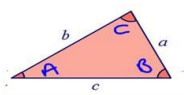


1. The basics facts

- (a) Angles on a straight line equal 180°
- (b) Angles in a triangle equal 180°
- (c) Angles around a point equal 360°
- (d) Angles in a quadrilateral equal 360°
- (e) Opposite angles are the same

Trigonometry - Formulae for Non Right-Angled Triangles Higher ONLY

For any triangle ABC,



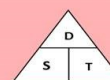
The Sine Rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ or $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

The Cosine Rule: $a^2 = b^2 + c^2 - (2bc \cos A)$

Area: $\frac{1}{2} ab \sin C$ **NOTE:** The angle must be between the two sides.

Compound Measures

Speed Distance Time

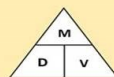


$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Distance} = \text{Speed} \times \text{Time}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

Mass Density Volume



$$\text{Volume} = \frac{\text{Mass}}{\text{Density}}$$

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$\text{Mass} = \text{Density} \times \text{Volume}$$

Force Area Pressure



$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

$$\text{Area} = \frac{\text{Force}}{\text{Pressure}}$$

$$\text{Force} = \text{Area} \times \text{Pressure}$$

Completing the square Higher ONLY

Higher ONLY

When **completing the square** of the quadratic

$$ax^2 + bx + c$$

where **a = 1**

Write it in the form

$$(x + b/2)^2 - (b/2)^2 + c$$

The question may ask you to **express** a quadratic in the form **$(x + a)^2 + b$**

The Quadratic Formula

The **quadratic formula** is used to solve quadratic equations which do not factorise.

For **any quadratic equation** in the form **$ax^2 + bx + c = 0$** , the solutions are found using:

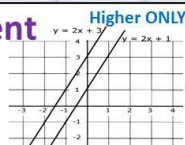
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

NOTE: The $\pm$ means you will get two solutions. Always work out the bit in the **square root** first before calculating the rest using a calculator.

You will need to memorise this formula!

Parallel Lines have the same gradient Higher ONLY

"They go up (or down) by the same steepness!"



Perpendicular Lines (cross at right angles [90°]):

Their **gradients multiply to give -1**

$$y = mx + c$$

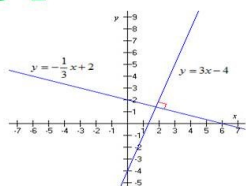
$$y = -mx + c$$

$$m \times -m = -1$$

$$y = 3x - 4$$

$$y = -1/3x + 2$$

$$-1/3 \times 3 = -1$$

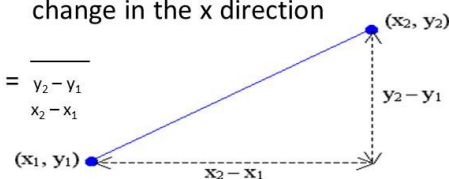


Midpoint of a line (segment)

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Gradient of a line = $\frac{\text{change in the y direction}}{\text{change in the x direction}}$

$$= \frac{y_2 - y_1}{x_2 - x_1}$$



Geometry of Straight Lines

NOTE: **Gradient** represents the **rate of change**.

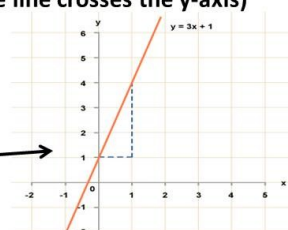
$$y = mx + c$$

Gradient of the line (how steep it is)

y-intercept (where the line crosses the y-axis)

$$y = 3x + 1$$

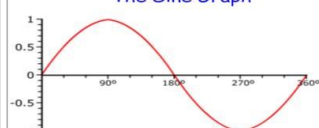
For every 1 it goes along, it goes 3 up (gradient). It crosses the y-axis at +1 (y-intercept)



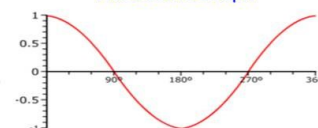
The Three Trigonometrical Graphs Higher ONLY

Higher ONLY

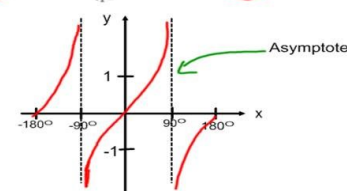
The Sine Graph



The Cosine Graph



The Tangent Graph



Laws of Indices

$$\begin{aligned}
 a^m \times a^n &= a^{m+n} & n^3 \times n^4 &= n^7 \\
 (a^m)^n &= a^{mn} & (n^4)^5 &= n^{20} \\
 a^m \div a^n &= a^{m-n} & n^5 \div n^3 &= n^2 \\
 a^{-m} &= \frac{1}{a^m} & 5^{-3} &= \frac{1}{5^3} = \frac{1}{125} \\
 \frac{1}{a^n} &= a^{-n} & 27^{1/3} &= \sqrt[3]{27} = 3 \\
 a^{\frac{m}{n}} &= \sqrt[n]{a^m} & 8^{2/3} &= (\sqrt[3]{8})^2 = 2^2 = 4 \\
 a^0 &= 1 & n^0 &= 1
 \end{aligned}$$

Averages

There are 3 types of averages – the mean, median and mode. The range is not an average.

Find the mean, median, mode and range of:

4, 3, 8, 2, 3, 7, 3, 12

Add them up: $3 + 4 + 8 + 2 + 3 + 7 + 3 + 12$
Mean = $42 \div 8 = 5.25$

Median (put in order) 2, 3, 3, 3, 4, 7, 8, 12
Median = $\frac{3+3}{2}$ (in the middle of 3 and 4)

Mode = 3 (most common)

Range = $12 - 3 = 9$

1. The basics (use the examples on the left)

The **mean** is when you add up all the values and divide by how many values you have.

The **median** is the middle value when the values are put in order.

The **mode** is the most common value.

The **range** is the highest value take the smallest value.

Surds

Higher ONLY

Example

Simplify $(4 + 3\sqrt{2})(3 - 2\sqrt{2})$

Expand. $= 4 \times 3 - 4 \times 2\sqrt{2} + 3\sqrt{2} \times 3 - 3\sqrt{2} \times 2\sqrt{2}$

$$= 12 - 8\sqrt{2} + 9\sqrt{2} - 6 \times 2$$

$$= 12 - 12 + (-8 + 9)\sqrt{2}$$

Collect terms.

$$= \sqrt{2}$$

Surds

Higher ONLY

Law 1 $\sqrt{a} \times \sqrt{a} = a$

$$\sqrt{7} \times \sqrt{7} = 7$$

Law 2 $\sqrt{a} \times \sqrt{b} = \sqrt{a \times b}$

$$\sqrt{5} \times \sqrt{8} = \sqrt{5 \times 8} = \sqrt{40}$$

Law 3 $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

$$\sqrt{\frac{25}{9}} = \frac{\sqrt{25}}{\sqrt{9}} = \frac{5}{3}$$

Rationalising the denominator:

$$\frac{8\sqrt{3}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{6}}{2} = 4\sqrt{6}$$

Broadway Academy Community Centre

FACILITY	PRICE	
	(All bookings are on the hour and are for 55 minutes)	
	ADULT	JUNIOR
Artificial Turf (Half Pitch)	£25.00	
Artificial Turf (Full Pitch)	£45.00	
Fitness Suite	£2.00 per session	
Fitness Suite (Membership)	£10 per month	
Sports Hall	£30.50	£26.00
Gymnasium	£20.00	£15.00
Class Rooms	£10.00	
Badminton Per Court (Sports hall)	£6.50	
Badminton Per Court (Gymnasium)	£6.50	
Table Tennis (per table)	£3.50	£3
Drama / Dance Studio	£20	£20
Main Hall	POA	POA



BROADWAY ACADEMY COMMUNITY CENTRE

Our Children, Our Community, Believe it can be done!
Head teacher: Ronald Skelton, M.Ed. B Phil. B.Ed (Hons). NPQH. LLE. FRSA



Function Halls Available



Birthday Parties

Mendhi

Conferences

Weddings

**Contact the Community
Centre for further details**

Community Centre Manager: Mr D Rahman

Email: communitycentre@broadway-academy.co.uk Website: www.broadway-academy.co.uk
The Broadway, Perry Barr, Birmingham, B20 3DP Contact Number 0121 566 4345



BROADWAY ACADEMY COMMUNITY CENTRE

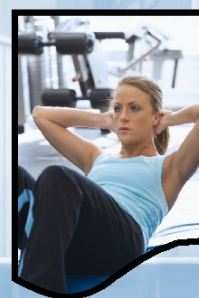
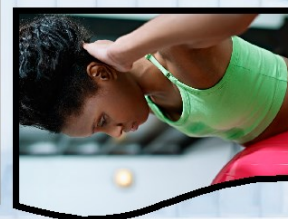
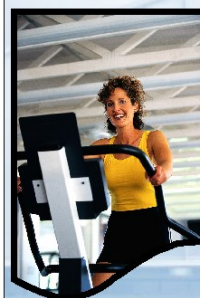
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Ladies Only Gym Session

Thursday 6.00pm - 8.00pm

Sunday 4.00pm - 7.00pm



£2.00 per session

Membership £10 per month

Community Centre Manager: Mr D Rahman

Email: communitycentre@broadway-academy.co.uk Website: www.broadway-academy.co.uk
The Broadway, Perry Barr, Birmingham, B20 3DP Contact Number 0121 566 4345

Karate Academy

Tuesday

7.00pm - 8.00pm



For further information

Tel: 01543 480990 / 07894 948010

Website: www.lichfieldkarateacademy.co.uk

Email: info@lichfieldkarateacademy.co.uk



BROADWAY ACADEMY COMMUNITY CENTRE

Our Children, Our Community, Believe it can be done!



Broadway Community Club

Saturday 10.00am - 2.00pm

**£1
per
person**



Community Centre Manager: Mr D Rahman

Email: communitycentre@broadway-academy.co.uk Website: www.broadway-academy.co.uk
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