Douglas Academy Mathematics Department



Higher Mathematics 2019/2020

A Guide for Parents

Classes & Prior Attainment

In S5/6 we have 5 Higher Mathematics classes. There are 2 classes in Column D and 3 in Column A. All classes are 'mixed ability'.

All of our Higher classes are a mix of 5^{th} and 6^{th} year pupils. Most pupils were successful at National 5 last session and are studying the course for the first time but we also have a number of repeat candidates.

The minimum requirement for entry into a Higher class is a pass at National 5 Mathematics. It is worth highlighting that the jump from National 5 to Higher is considerable and that Mathematics is one of the most difficult SQA subjects.

The following table details national success rates (from 2015).

N5 Grade	Higher Pass Rate
А	91%
В	58%
С	35%

Textbook, Notes & Homework

All classes use a Hodder Gibson Higher textbook supplemented by other resources. All of our Higher teachers issue pre-printed notes to pupils. Most commonly the classes complete some worked examples each day before attempting an exercise from the textbook.

The pace of work is intense with 6 periods of new work to get through each week. Teachers will set homework on a daily basis and pupils should make their best effort to complete this. Some teachers may also issue Ink Exercises for each topic as well. Typically a week would be given to complete these.

Pupil progress in class is monitored through the use of multiple choice check-ups for each topic in the Higher course.

Additional Support

The Mathematics Department run twice weekly lunchtime drop in sessions open to all pupils from S3-S6. The drop in sessions will take place on Wednesday & Thursday lunchtimes from 1:00 to 1:30pm in Room 5. They run from August until the SQA exams in May. All classes are repeatedly made aware of these sessions.

We also offer Supported Study in the 4/5 weeks prior to the January Prelim and the May exam. Supported Study is after school and pupils 'sign up' in advance.

Assessments & Preparation Resources

The final grade for Higher Mathematics is based solely on the final exam in May which consists of 2 papers:

Paper 1 (Non-calculator)	1 hour 30 minutes	70 marks
Paper 2 (Calculator)	1 hour 45minutes	80 marks

UASPs – these are no longer required by SQA for Higher pupils.

October Test - this will include 40% level A/B questions. This will give pupils an idea of exam standards. A revision sheet will be issued around 3 weeks in advance. When pupils get their scripts returned they will be issued with a summary sheet detailing performance for each question and identifying next steps. (The summary sheet for the October 2016 Test is attached.)

January Prelim – this covers all work completed to that point. **2 Practice Prelims** and at least **3 past papers** will be issued in advance. Pupils may well also be issued with a revision schedule to keep them on track. When pupils get their scripts returned they will be issued with a summary sheet detailing performance for each question and identifying next steps.

May Exam – this covers the whole course. 6 Practice Exams and at least 3 Past Papers will be issued in advance.

<u>Useful Revision</u> <u>Websites</u>

Notes and Examples

Maths Revision: www.mathsrevision.com

Higher Maths: https://www.highermathematics.co.uk/higher-maths-whole-course/

Higher Still Notes: <u>http://www.hsn.uk.net/</u>

Video Past Papers and Lessons

Larbert High Youtube Lessons: https://www.youtube.com/channel/UCeJ1pRPUBkh5S5mzh5UvYfg/feed

DLB Maths Youtube Past Paper Videos: https://www.youtube.com/channel/UCXt3XlkIJoAMovD7ngorKQQ

Study Skills

To keep stress levels to a minimum at this time we recommend that all pupils are organised and have a clear revision plan to use their time effectively across all subjects. The following structure should help with this process:

- Ensure all pupils have access to a quiet space/area to study at home without the distractions of social media etc.
- Pupils should have planners up to date including dates and times of each exam.
- Pupils should have a clear plan of how and when they study for each subject. It is not recommended that pupils spend full days on one particular subject and should instead aim to cover around 2 subjects. Pupils should be flexible with this structure e.g. if struggling and find studying a particular subject is ineffective at that point, switch to another subject until in a better headspace.
- Ensure pupils take frequent short breaks. We work best and most efficiently in 50 minutes intervals. When taking breaks leave the working space even for 5 minutes to allow the brain to rest. Fresh air and exercise should also be encouraged even if just a walk.
- Studying for Maths.

Pupils should identify which formulae are provided in the formula sheet at the front of the exam and create a list of those which need to be learned. Pupils should initially be working through specimen papers **with notes** to produce good quality solutions, asking for help as required. Once having worked through the first few papers with notes pupils should start to recognise and become familiar with the exam style questions and then less reliant on notes as completing specimen papers.

It is important to note that this is a stressful time and it is easy for pupils to develop a fixed mindset when they struggle to see progress. This is only natural and pupils should be made aware that the feeling of being overwhelmed is simply an indication that they value the importance of their studies. At these times pupils should be encouraged to talk about their feelings, break down problems and work through issues one at a time. Assure pupils that hard work and effort is the key to success.

Pupils should adopt a growth mindset, where instead of thinking 'I can't do this' they should take the view of 'I can't do this YET'. This more positive approach to learning combined with hard work provides a better chance of achieving success.

<u>NEW Higher Mathematics</u> Session Plan (2019-2020) Updated May 2019

Appendix

HODDER GIBSON TEXTBOOK

The dates are issued for guidance only. Test dates are provisional.

<u>Chapter</u>	<u>Start Date</u>		
1. Straight Line	3rd June		
11. Functions	15 th August		
6. Trigonometry	30 th August		
 13. Differentiating Functions 14. Using Differentiation 17. Applying Differential Calculus 	6 th September		
2. Sequences	26 th September		

OCTOBER EXTENDED TEST (On all above work) <u>w/b Mon 7th OCT.</u> (S5/6 Parents' Night Thu 24th October)

3. 14.	Polynomial Expressions & Equations Integration (Part 1)	21 st October 4 th November
16.	Integration – Definite Integrals (Part 1)	
18.	Applying Definite Integrals	
3.	Circles	18 th November
7. 8.	Compound Angle Formulae Trigonometric Equations 1	28 th November
EXAM REVISION		9 th December

S5/6 PRELIMS Tue 7th January – Mon 20th Jan

13. 15. 16.	Differention (Part 2) Integration (Part 2) Definite Integrals (Part 2)	21 st January
9. 10.	The Wave Function Trigonometric Equations 2	6 th February
12.	Vectors	17 th February
5.	Exponential & Logarithmic Functions	2 nd March

EASTER HOLIDAY is Mon 6th April – Fri 17th April inclusive

SQA Higher Mathematics Exam 2020

Monday 11 th May	Paper 1 (Non-calculator)	9.00 - 10.30
	Paper 2 (Calculator)	11.00 - 12.45

HIGHER MATHEMATICS EXTENDED UNIT 1 TEST – October 2016 SUMMARY OF PERFORMANCE

Name_____

Reg. ____

	TOPIC	P O SS IB L E	A C T U A L	Practice questions – all from Higher textbook
1	Straight line – finding the equation of a median and altitude then point of intersection	9		p14-15 Ex. 7A Q7
2	Quadratic - completing the square then sketching the graph	4		p33 Ex. 3 Q4
3	Recurrence relation – justifying and calculating the limit	3		p93 Review Q7
4	Graphs of related functions	4		p34-36 Ex. 4 Q5, 6 ,8
5	Finding the equation of a tangent to a curve	6		p67 Ex. 5A Q3
6	Composition of functions including suitable domain	3		p23-24 Ex. 3 Q7 p28 Review Q4
7	Optimisation	8		p76-77 Ex. 5A Q4-6
	TOTAL	37		%

Signature Of Parent/Carer _____

Date _____