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| **CORE MATHEMATICS AS 2024/5** |
| **Academic Studies** |



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| **Start Date** | 9th SEPTEMBER 2024 |
| **End Date** | 5TH JULY 2025 |
| **Level of course** | 3 |
| **Awarding Body** | AQA |
| **Specification** |  |

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| CONTENTS |

[YOUR SUBJECT TEACHERS 3](#_Toc108560340)

[INTRODUCTION & AIMS OF THE COURSE 4](#_Toc108560341)

[COURSE STRUCTURE 5](#_Toc108560342)

[KEY COURSE INFORMATION 6](#_Toc108560343)

[YEAR PLAN OF STUDY 7](#_Toc108560344)

[ENRICHMENT AND VISITS 8](#_Toc108560345)

[SUCCESSFUL LEARNER HABITS 9](#_Toc108560346)

[SUBJECT RESOURCES FOR STUDENTS 10](#_Toc108560347)

[TERMINOLOGY GLOSSARY 11](#_Toc108560348)

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| YOUR SUBJECT TEACHERS |

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Teacher of Core A/S & A1 Mathematics

Course co-ordinator:

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| INTRODUCTION & AIMS OF THE COURSE |

Introduction

Welcome to studying Core Mathematics at the Joseph Wright Centre. This handbook contains details of your Core Mathematics AS-level Programme and other important information.

We will be following the AQA Specification – Level 3 Certificate in Mathematical Studies. This specification can be found here : [AQA | Mathematics | AQA Certificate | Level 3 Mathematical Studies](https://www.aqa.org.uk/subjects/mathematics/aqa-certificate/mathematical-studies-1350)

Core maths supports the mathematical demands of all subjects across the curriculum, your likely progression to HE, an apprenticeship or employment, and your wider life. You need to be determined, develop good study skills and be hardworking to succeed. You will usually be taking Core Maths on top of 3 full A Levels and you should expect the workload to be a serious challenge. Make sure you ask for help if you need it.

Core Mathematics – course information:

* There is no coursework in Core Maths.
* This is a one-year course normally done in your first year of A Level study.
* You will study a range of topics including data analysis & financial mathematics. There is an option where Paper 2 is concerned – we deliver Option 2C – Graphical techniques.
* Your examinations will be in summer 2025.
* During the course you will complete internal assessments including practice exams. This is important as it helps us to determine predicted grades that will be required for references. If you do not do very well in these assessments, you will be supported to improve your potential to achieve a higher grade.
* You must make sure that you complete homework assessments and tests as the course progresses.
* A pass at AS-level includes grades A to E. You will be given a target grade to work towards.
* We will expect you to bring your own stationery. Some questions are quite long and for this reason we recommend **A4 paper.** You will need at least one file to keep your completed work organised when it is returned to you. We do not use exercise books.
* We may ask you to upload images of your work to a digital folder and ask you to complete assessments or undertake research on-line.
* In Core Maths you will need a calculator in every lesson! Your standard GCSE calculator will suffice, but it would be advantageous to buy the following calculator:

A close-up of a calculator

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**Casio FX 991EX Classwiz**

This calculator has functions and data which your GCSE calculator will not have, which can be used in the exam.

Expectations

Work will be set every lesson to support your independent learning which must be completed. This will include completing any work set in class and will involve using online facilities & resources. Success in any subject is very much proportional to the level of engagement & proactivity you demonstrate – ie you get the result which you deserve based on how much you invest!!

If you are having any issues & need help, please do raise this with your teacher who will be ready to help or refer you for support from Student Services as appropriate.

Team Effort

Your success will be the result of a team effort. It is important that you learn to work independently and that you can identify problem areas with your work and how to overcome them. It would be easy to ignore these, but you must use the resources available to help you. These can include the obvious ones, like textbooks etc., but it also includes your classmates, parents and carers, and your teacher.

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| COURSE STRUCTURE |

**Assessment of your work**

If we ask you to do some independent work, we may not always take it in for marking. This does not mean it is not important. Remember that you are not doing homework for us, you are doing it for you. We would expect you to check your own answers when you have these, and physically mark this. Try to identify errors if you can and correct these but ask about things you do not understand. When your work has been graded, how does the grade compare with your target grade and your stretch and challenge grade? Try to identify what you should do if you are not achieving your target grades.

Sometimes we will ask you to assess your own work with a mark scheme, or assess someone else’s work. It is important for you to know how marks are gained and what examiners are looking for. It is also important for you to discover how easy it is to follow your own work.

We may ask you to upload your work or set a task to provide evidence that you completed a task. Sometimes we will ask you to do an online assessment.

**A-level Maths Y1 Key Assessment Weeks (Provisional)**

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| **Assessment** | **Week commencing** | **Content from** | **Topics** |
| FA1 | 6/11/23 | Half-Term 1 | Percentages & Interest |
| FA2 | 8/1/24 | Term 1 | All Term 1 content – Mock paper 1 |
| FA3 | 26/2/24 | Half-term 3 | All content to date |
| FA4 | 15/4/24 | Terms 1 & 2 | All content to date – Mock paper 2 |

**Provisional Mock Exam Dates: During W/c 6th January 2025:** Paper 1 Mock.

Your progress will be assessed after the above for Exam Entry and will also take into account all the relevant factors which have contributed to your level of progress, including your attendance level, punctuality record, engagement in class & with subject support, homework completion rate etc.

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| KEY COURSE INFORMATION |

Headline

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| Length of Study | One year course, 2 lessons per week of 1h40m, and additional support sessions where needed |
| Your classrooms | tbc |
| Key skills you will be developing during the course to be successful | Problem solving & logical thinking;  Critical thinking; Estimation skills. |
| What will lessons look like? | Traditional delivery with student activities to enhance learning, consolidation & practice. |
| Informal Assessment Methods | Formal Assessments each half-term |
| Essential Equipment/ Resources | A4 Subject folder with A4 lined & graph paper  Casio FX-991EX Classwiz Calculator is mandatory  A1 Textbooks – obtain from Library |
| Health and Safety | No specific requirements |

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| YEAR PLAN OF STUDY |

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| **Week** | **Week Commencing** | **Indicative content** | | |
| 1 | 9.09.24 | Percentages Revision; Percentage use & misuse; Interest; Loans, credit cards & mortgages; student finance.  Spreadsheets. | | |
| 2 | 16.09.24 |
| 3 | 23.09.24 |
| 4 | 30.09.24 |
| 5 | 0710.24 |
| 6 | 14.10.24 |
| 7 | 21.10.24 |
| HOL | **HALF TERM (w/c 30th October)** | | | |
| 8 | 04.11.24 | Critical thinking; Fermi Estimation; Wages & salaries – income tax & national insurance; Ratio & Proportion revision & applications; Similarity revision & applications; Index numbers – BMI, RPI/CPI.  Basic data analysis – measures of average & spread, use of diagrams eg histograms & cumulative frequency curves. | | |
| 9 | 11.11.24 |
| 10 | 18.11.24 |
| 11 | 25.11.24 |
| 12 | 02.12.24 |
| 13 | 09.12.24 |
| 14 | 16.12.24 |
| HOL |  |  |  |  |
| 15 | 06.01.25  MOCK EXAM WEEK | Graphical techniques  Mock exams. | | |
| 16 | 13.01.25 |
| 17 | 20.01.25 |
| 18 | 27.01.25 |
| 19 | 03.02.25 |
| 20 | 10.02.25 |
| HOL | **HALF TERM** | | | |
| 21 | 24.02.25 | Graphical techniques  Revision & consolidation;  Exam practice | | |
| 22 | 03.03.25 |
| 23 | 10.03.25 |
| 24 | 17.03.25 |
| 25 | 24.03.25 |
| 26 | 31.03.25 |
| EASTER | | | | |
| 27 | 21.04.25 | Revision & consolidation;  Exam practice | | |
| 28 | 28.04.25 |
| 29 | 5.05.25 |
| 29 | 12.05.25 | **PAPER 1** | | |
| 30 | 19.05.25 | **PAPER 2** | | |
| HOL | **HALF TERM** | | | |

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| ENRICHMENT AND VISITS |

UKMT SENIOR CHALLENGE – NOV

RITEANGLE CHALLENGE – DEC

INSIGHTS CONFERENCE – MARCH

VISIT TO BLETCHLEY PARK - JULY

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| SUCCESSFUL LEARNER HABITS |

Become an Expert Learner

To become an expert learner, you should:

* Remember your reasons for choosing Core Maths;
* Engage fully with the course, this means in lessons and with your independent study;
* Take responsibility for your progress – you will not be an expert if all you do is attend;
* Reflect on what works well and review your strengths and weaknesses;
* Plan your learning;
* Ask questions;
* Regard mistakes as an opportunity to learn - identify errors and correct your work;
* Develop effective study habits;
* Regard independent study as an opportunity to learn, not a chore;
* Use feedback to improve;
* Attend lessons punctually;
* Value the opinions & support of others;
* Be prepared to share your ideas and opinions and support others in your group;
* Organise your work – the more accessible it is, the easier it will be for you to apply your skills and knowledge to problems and transfer those skills and apply them to new areas of Maths;
* Explore your resources and use them;
* Try a different approach to solving a problem if the one you are trying does not seem to be leading anywhere - perseverance and determination pay;
* Have a growth mindset;
* Accept that some topics take longer to learn than you might expect, but practice is always beneficial;
* Sometimes you might need to leave a problem and come back to it another time;
* Look at your options for overcoming problems.

**Ostriches are not expert learners**

If you are experiencing any problems, please let us know. We will always try to help if there is a problem but will be unable to help if we do not know that the problem exists. Do not be an ostrich.

A screenshot of a computer

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**Be independent!**

**The study you undertake independently is at least as important as what you do in class!**

We will often ask you to complete some **learning tasks as part of your preparation for a lesson**. Some examples of this could be:

* Revise differentiation from first principles before we continue with this in trigonometry in year 2;
* Watch some video-clips to introduce some terminology or new ideas, and then tackle basic questions;
* Read through some notes and examples;
* Attempt some straightforward examples;
* Revise thoroughly for assessments;
* Produce a resource to be used in a lesson;

In the lesson itself we will then be able to move onto more challenging content or develop the initial ideas further.

**After each lesson** you should spend some time practising the skills you have been using in class.

The following study skills are useful in maths:

* Complete the Directed Independent Learning Tasks that are set after every lesson;
* Mark your own work using a different coloured pen to the one you used to complete the work - where possible, identify errors, and then correct them;
* Use an A4 file & A4 paper - some of the questions that you will do are quite long and you will avoid having to keep turning back to copy previous work;
* Use resources or solutions to check your work and work through presentations again if necessary;
* If you are stuck with a topic, go back a stage and practise questions from this earlier stage, and work through to more difficult problems;
* Practise a lot! - this will build your confidence and help you join the dots in your learning and see shortcuts;
* Try to link different topics together – as you tackle new topics, think about what skills and knowledge you have used from previous topics - a web diagram can be used to show links between topics - this might help you when you come to revise;
* File your work in a sensible order;
* Create a key points or summary page for a topic as you finish it in class so that you can use it as a quick reference guide when you begin to revise;
* Keep a learning journal and go through the cycle **- Plan, Do, Reflect, Review** - set yourself targets and record this progress on ProPortal;
* Do not just file your marked work – ask ‘What does it tell you? What should you do more of? How will you do this?’
* Keep up to date - with around 10 hours of study every week, you can quickly fall behind.

If the only work you are doing is in lessons, **you will not have a successful outcome**.

**On-line accounts**

We will provide you with accounts for [www.mymaths.co.uk](http://www.mymaths.co.uk) and <https://integralmaths.org/> as soon as possible. You can use these to learn, develop, revise and assess your work. We will give you guidance on these later. Please record your account details for these carefully.

**Microsoft Teams**

You will be part of a Team for maths and we will ask you to upload images of your work to a digital notebook or assessment. Information will be posted within your Team, but it is also important that you check your college email account regularly. You will be given further guidance about using Teams. For guidance on using Teams please click [here](https://www.youtube.com/watch?v=SemjM2fHV2Q).

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| SUBJECT RESOURCES FOR STUDENTS |

**Get the help you need!** Come into the Library or use the resources online and ask any one of the friendly team members for help.  All the Libraries for Learning Team are skilled researchers willing to help you find the information you need and guide you to resources you might not have considered to help you finish those assignments.  On the rare occasions that the library does not have exactly what you want, they will do their best to borrow it through another library.  They can also give you advice on study skills and digital skills via the Skills Hubs too (see Study Skills and Digital Skills on the [Libraries for Learning Pod Page](https://pod.derby-college.ac.uk/course/view.php?id=36)).

**Textbooks – obtain from the Library before your first lesson:**

A blue and white book with a city landscape

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A close up of a book cover

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Search for more resources using the library catalogue: [Library Catalogue](http://dclibrary.cirqahosting.com/HeritageScripts/Hapi.dll/search1?SearchPage=srchgen.htm)

A close-up of a book

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| GLOSSARY OF TERMS |

A Glossary of Terms for Core Mathematics is available on Page 365 of the Collins Textbook shown above. Please use it to learn & understand the key technical terms used in Core Mathematics, and then use the correct technical terms when answering questions!

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| NOTES |