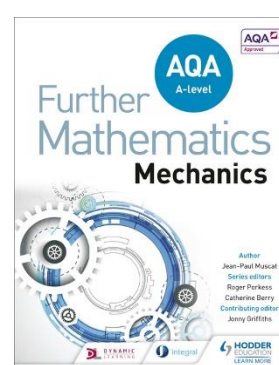
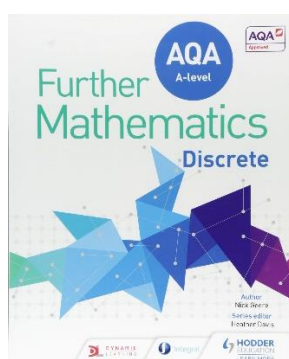
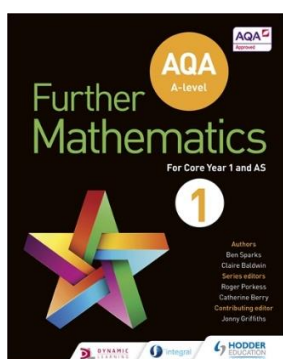


AS Further Mathematics

The Year 12 scheme of learning for Further Mathematics broadly follows the AQA textbooks that you have been allocated by the department. As such, your first point of reference for each topic area will be the page numbers as indicated on the following pages in the programmes for each term. It is important that you read through the explanatory material and examples, making your own notes as you proceed through each section. It is also vital that you try questions from the exercises, checking your answers in the back of the book (focus on the green and yellow questions initially with the red ones being the most challenging!) At any stage, please do contact your teacher if you have any questions regarding the content or if you are struggling to access the work.



As well as the textbooks, there are a number of other on-line resources that you could use and these are listed below. My advice would be to start with the textbook, follow it up with using the Mymaths website (when applicable) and then consolidate your learning by using the Integral website which will give you plenty of extra questions to work through! Your teacher is likely to contact you with advice about which resource might fit a particular topic best and/or provide you with additional material so please check your e-mails regularly!



MyMaths (www.mymaths.co.uk) login: belper and password: shape. Just remember to select 'A-level' in the drop down menu in the top left of the screen. MyMaths is particularly useful for further explanation of content. Just be careful though as the material is not broken down into AS and A-level so be sure that the content matches what is in your textbook. If unsure, please do contact your teacher.



Integral (<https://integralmaths.org/>). You have already been sent your login and password details but please contact your teacher if you problems logging in. This is a fantastic website with lots of high quality resources including videos, modelled solutions and many, many questions. It is broken down into AS and A-level content and optional links to the **resources section** are included below - please do use them!

| Week Number | Textbook | Year 12 Autumn Term FURTHER MATHS Page References |
|--------------|----------|---|
| 1 2 | Pure | Matrices and transformations: p2-p27 https://2017.integralmaths.org/course/view.php?id=8&sectionid=137 https://2017.integralmaths.org/course/view.php?id=8&sectionid=138 |
| | Discrete | Graphs and graph theory: p1-p9 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1707 |
| 3 4 5 | Pure | Combined transformations: p27-p32 https://2017.integralmaths.org/course/view.php?id=8&sectionid=138 Invariance: p33-p37 https://2017.integralmaths.org/course/view.php?id=8&sectionid=139 Determinants and inverses: p197-207 https://2017.integralmaths.org/course/view.php?id=8&sectionid=158 |
| | Discrete | Networks: p22-p41 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1708 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1703 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1709 |
| 6 7 | Pure | Summation of series: p93-p106 https://2017.integralmaths.org/course/view.php?id=8&sectionid=150 |
| | Discrete | Network flows: p75-p80 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1704 |
| 8 9 10 | Pure | Complex numbers: p39-p47 https://2017.integralmaths.org/course/view.php?id=8&sectionid=142 Complex number geometry: p135-p147 https://2017.integralmaths.org/course/view.php?id=8&sectionid=143 https://2017.integralmaths.org/course/view.php?id=8&sectionid=154 |
| | Discrete | Further graph theory: p9-p13 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1707 Linear programming: p43-p48 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1710 |
| 11 12 | Pure | Complex loci: p148-159 https://2017.integralmaths.org/course/view.php?id=8&sectionid=155 Roots of polynomials: p52-p69 https://2017.integralmaths.org/course/view.php?id=8&sectionid=146 https://2017.integralmaths.org/course/view.php?id=8&sectionid=147 |
| | Discrete | Critical path analysis: p58-p66 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1700 |
| 13 14 | Pure | Proof by induction: p107-p116 https://2017.integralmaths.org/course/view.php?id=8&sectionid=950 |
| | Discrete | Game theory: p90-p100 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1701 |

| Week Number | Textbook | Year 12 Spring Term FURTHER MATHS Page References |
|----------------|-----------|---|
| 15 16 | Pure | Graphs of rational functions and inequalities: p175-p195 https://2017.integralmaths.org/course/view.php?id=8&sectionid=232 https://2017.integralmaths.org/course/view.php?id=8&sectionid=948 |
| | Discrete | Binary operations: p106-p111 https://2017.integralmaths.org/course/view.php?id=41&sectionid=1720 |
| 17 18 19 | Pure | Polar co-ordinates: p163-p172 https://2017.integralmaths.org/course/view.php?id=8&sectionid=1509 Maclaurin series: p116-120 https://2017.integralmaths.org/course/view.php?id=8&sectionid=951 |
| | Mechanics | Dimensional analysis: p202-p213 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1462 Impulse and momentum: p121-p139 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1458 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1459 |
| 20 21 22 | Pure | Conic sections: p72-p78 https://2017.integralmaths.org/course/view.php?id=8&sectionid=946 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2279 Further calculus: p123-p133 https://2017.integralmaths.org/course/view.php?id=8&sectionid=1511 |
| | Mechanics | Work, energy and power: p91-p111 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1454 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1455 |
| 23 24 25 | Pure | Vectors and 3D space: p209-p234 https://2017.integralmaths.org/course/view.php?id=8&sectionid=162 https://2017.integralmaths.org/course/view.php?id=8&sectionid=163 |
| | Mechanics | Hooke's Law: p175-p200 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1468 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1469 |

| Week Number | Textbook | Year 12 Summer Term FURTHER MATHS Page References |
|----------------------------------|-----------|---|
| 26 | Pure | Hyperbolic functions: p82-p91 https://2017.integralmaths.org/course/view.php?id=8&sectionid=151 |
| 27 | Mechanics | Circular motion: p156-p162 https://2017.integralmaths.org/course/view.php?id=39&sectionid=1465 |
| 28 29 30 31 32 33 | | <p>At this stage, you should begin your AS examination preparation. It may be that your teacher has already given you a series of examination papers to work through and I would advise you to work steadily through these. If you do not have these papers, please follow the links below as they will take you directly to WebLearn (Belper School VLE) where you can enter your usual login details and access past papers and mark schemes directly.</p> <p style="text-align: center;">https://moodle.belperschool.co.uk/course/view.php?id=80</p> <p>Once the exams are completed, you should resume the A-level course and will need the Year 13 PURE book to access the references below. Please see your teacher if you need help with this.</p> |
| 34 35 | Pure | Matrices: p45-p73 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2276 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2277 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2280 |
| 36 37 | Pure | De Moivre's theorem: p297-p326 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2300 https://2017.integralmaths.org/course/view.php?id=42&sectionid=2301 |