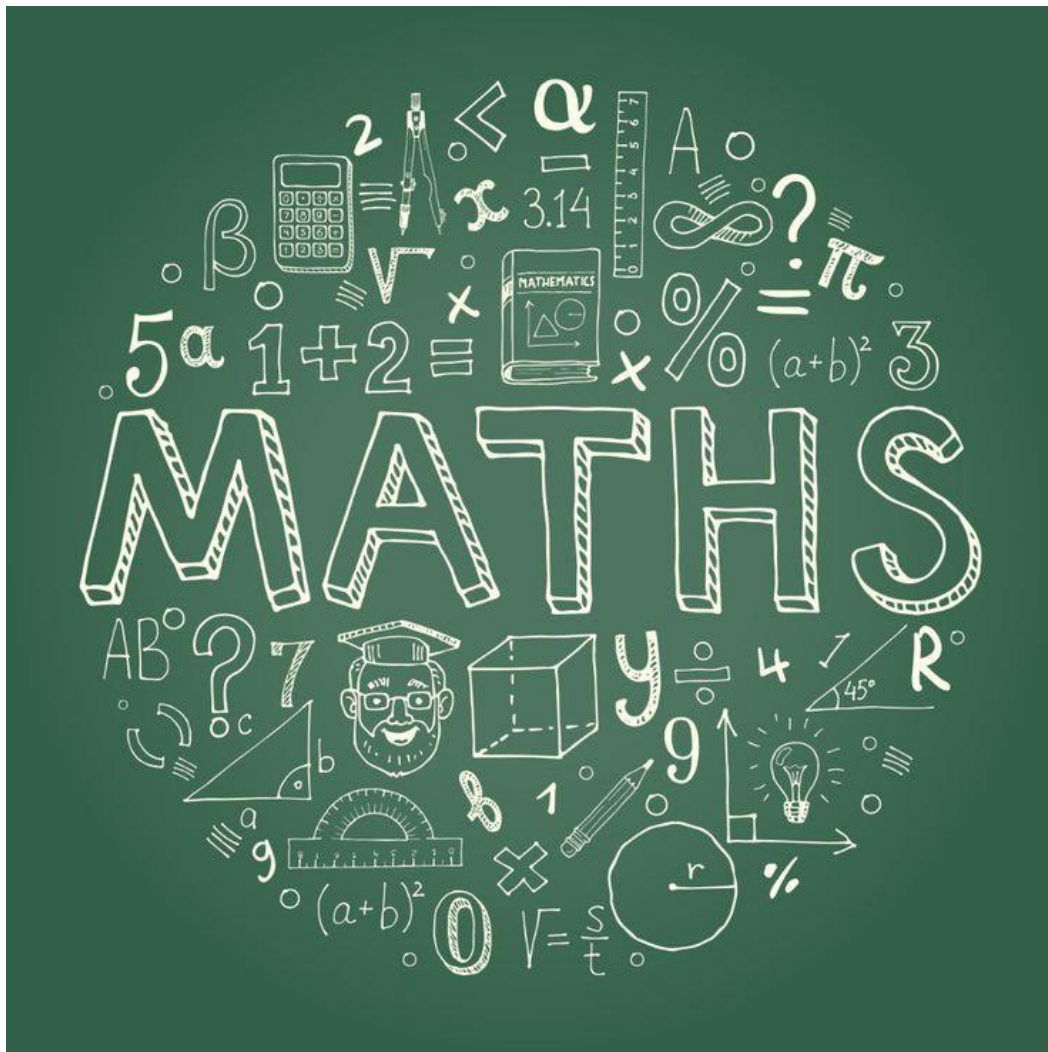


A Level Further Maths

Above the curriculum



Stretch yourself, aim high and expand your mathematical mind!

| Curriculum Linked Resources | | | |
|--------------------------------|-------------------------|-----------------|---|
| Topic | Task Name | Challenge Level | Link |
| Indices and surds | Climbing Powers | ★ ★ | https://nrich.maths.org/324 |
| | The Root of the Problem | ★ ★ | https://nrich.maths.org/901 |
| | Power Stack | ★ | https://nrich.maths.org/7039 |
| | Quick Sum | ★ | https://nrich.maths.org/7040 |
| | Irrational Arithmagons | ★ ★ | https://nrich.maths.org/7448 |
| Polynomials | Direct Logic | ★ | https://nrich.maths.org/6333 |
| | Implicit | ★ ★ | https://nrich.maths.org/6406 |
| | Quad Solve | ★ ★ | https://nrich.maths.org/7041 |
| | Common Divisor | ★ | https://nrich.maths.org/7042 |
| | Unit Interval | ★ | https://nrich.maths.org/7051 |
| | Inner Equality | ★ | https://nrich.maths.org/7105 |
| Coordinate Geometry and Graphs | Parabolic Patterns | ★ | https://nrich.maths.org/parabolicpatterns |

Differentiation
and Integration

| | | |
|--------------------------------------|-----|---|
| Parabella | ★ | https://nrich.maths.org/785 |
| Intersections | ★ | https://nrich.maths.org/5438 |
| Tangles Trig Graphs | ★ | https://nrich.maths.org/6481 |
| Curve Match | ★ | https://nrich.maths.org/6493 |
| Erratic Quadratic | ★ ★ | https://nrich.maths.org/6842 |
| Whose Line Graph Is It Anyway? | ★ | https://nrich.maths.org/6500 |
| Mind Your Ps and Qs | ★ ★ | https://nrich.maths.org/mindyourpsandqs |
| Implicitly | ★ ★ | https://nrich.maths.org/6406 |
| Integration Matcher | ★ | https://nrich.maths.org/6412 |
| Brimful | ★ ★ | https://nrich.maths.org/6426 |
| Brimful 2 | ★ | https://nrich.maths.org/6430 |
| The Right Volume | ★ | https://nrich.maths.org/6495 |
| Calculus Countdown | ★ | https://nrich.maths.org/6552 |
| Trig Trig Trig | ★ ★ | https://nrich.maths.org/7059 |
| Gradient Match | ★ | https://nrich.maths.org/7060 |
| Turning to Calculus | ★ | https://nrich.maths.org/7084 |
| Curve Hunter | ★ | https://nrich.maths.org/7085 |

| | | | |
|---------------------|--------------------------|-----|---|
| | Calculus Analogies | ★ | https://nrich.maths.org/7087 |
| | The Sign of the Times | ★ ★ | https://nrich.maths.org/7091 |
| | Patterns of Inflection | ★ | https://nrich.maths.org/7197 |
| Trigonometry | Loch Ness | ★ ★ | https://nrich.maths.org/2693 |
| | Impossible Square? | ★ ★ | https://nrich.maths.org/5869 |
| | Impossible Triangles? | ★ ★ | https://nrich.maths.org/5923 |
| | Curved Square | ★ | https://nrich.maths.org/curvedsquare |
| | Tangles Trig Graphs | ★ | https://nrich.maths.org/6481 |
| | Trig Identity | ★ | https://nrich.maths.org/7050 |
| | Geometric Trig | ★ | https://nrich.maths.org/7052 |
| | Trigger | ★ ★ | https://nrich.maths.org/7063 |
| | Stand Up Arcs | ★ | https://nrich.maths.org/7475 |
| | Calculating with Cosines | ★ ★ | https://nrich.maths.org/7787 |
| Sequence and Series | Circles Ad Infinitum | ★ ★ | https://nrich.maths.org/262 |
| | Direct Logic | ★ | https://nrich.maths.org/6333 |
| | Speedy Summations | ★ | https://nrich.maths.org/6610 |
| | Prime Aps | ★ | https://nrich.maths.org/7054 |

| | | | |
|-----------------------|-------------------------------------|-----|---|
| | Mad Robot | ★ | https://nrich.maths.org/7056 |
| | AP Train | ★ | https://nrich.maths.org/7097 |
| | Medicine Half Life | ★ | https://nrich.maths.org/7315 |
| Algebra and Functions | Power Match | ★ | https://nrich.maths.org/6159 |
| | Extreme Dissociation | ★ | https://nrich.maths.org/6169 |
| | Cubic Roots | ★ | https://nrich.maths.org/7066 |
| | Inverting Rational Functions | ★★ | https://nrich.maths.org/6959 |
| | Rational Request | ★★★ | https://nrich.maths.org/6960 |
| Numerical Methods | Root Hunter | ★ | https://nrich.maths.org/5876 |
| | Solve Me! | ★ | https://nrich.maths.org/7038 |
| | Archimedes Numerical Roots | ★ | https://nrich.maths.org/7291 |
| Differentiation | It's Only a Minus Sign | ★★ | https://nrich.maths.org/5874 |
| Vectors | Flexi Quads | ★ | https://nrich.maths.org/439 |
| | Vector Walk | ★ | https://nrich.maths.org/6572 |
| | Polygon Walk | ★ | https://nrich.maths.org/6632 |
| Kinematics | Speed-time Problems at the Olympics | ★ | https://nrich.maths.org/7322 |

| | | | |
|--------------------------------------|-------------------------------------|-----|---|
| | Take a Message Soldier | ☆☆ | https://nrich.maths.org/1971 |
| | Speedo | ☆ | https://nrich.maths.org/7109 |
| | Dangerous Driver? | ☆ | https://nrich.maths.org/6417 |
| | Max Throw | ☆☆ | https://nrich.maths.org/7058 |
| | Crazy Cannons | ☆☆ | https://nrich.maths.org/7057 |
| | Cannon Balls | ☆ | https://nrich.maths.org/5987 |
| Statistical Sampling | Statistical Shorts | ☆ | https://nrich.maths.org/7721 |
| | Stats Statements | ☆ | https://nrich.maths.org/6149 |
| | Counting Fish | ☆ | https://nrich.maths.org/6060 |
| Data Presentation and Interpretation | Top Marks | ☆☆ | https://nrich.maths.org/7032 |
| | Spread | ☆☆☆ | https://nrich.maths.org/2776 |
| Probability | Teams | ☆ | https://nrich.maths.org/471 |
| | Rain or Shine | ☆☆ | https://nrich.maths.org/314 |
| | Put Out | ☆☆☆ | https://nrich.maths.org/1970 |
| | The Derren Brown Coin Flipping Scam | ☆☆☆ | https://nrich.maths.org/6954 |

Statistical
Distributions

| | | |
|------------------------------|-------|---|
| Discussing Risk and Reqard | ★ | https://nrich.maths.org/6955 |
| Data Matching | ★ | https://nrich.maths.org/5933 |
| Which List Is Which? | ★ ★ | https://nrich.maths.org/7731 |
| Into the Normal Distribution | ★ ★ | https://nrich.maths.org/6314 |
| Snooker | ★ | https://nrich.maths.org/353 |
| Snooker Frames | ★ | https://nrich.maths.org/358 |
| Over-booking | ★ ★ ★ | https://nrich.maths.org/4932 |

| Additional Resources - Websites | |
|---------------------------------|---|
| Website | URL |
| MathsWatch | https://www.mathswatch.co.uk |
| Kerboodle Textbook | https://www.kerboodle.com/users/active_session |
| TLMaths | https://sites.google.com/view/tlmaths/home |
| Integral | https://integralmaths.org |
| Exam Solutions | https://www.examsolutions.net/a-level-maths/aqa/ |
| Maths Genie | https://www.mathsgenie.co.uk/newalevel.html |
| NRich Live Problems | https://nrich.maths.org/8410 |

| Additional Resources - Reading List | |
|-------------------------------------|---|
| Author | Book Title |
| Simon Singh | Fermat's Last Theorem |
| Simon Singh | The Code Book |
| Alex Bellos | Alex's Adventures in Numberland |
| Marcus Du Sautoy | The Music of the Primes |
| David Acheson | 1089 and all that: A Journey into Mathematics |