

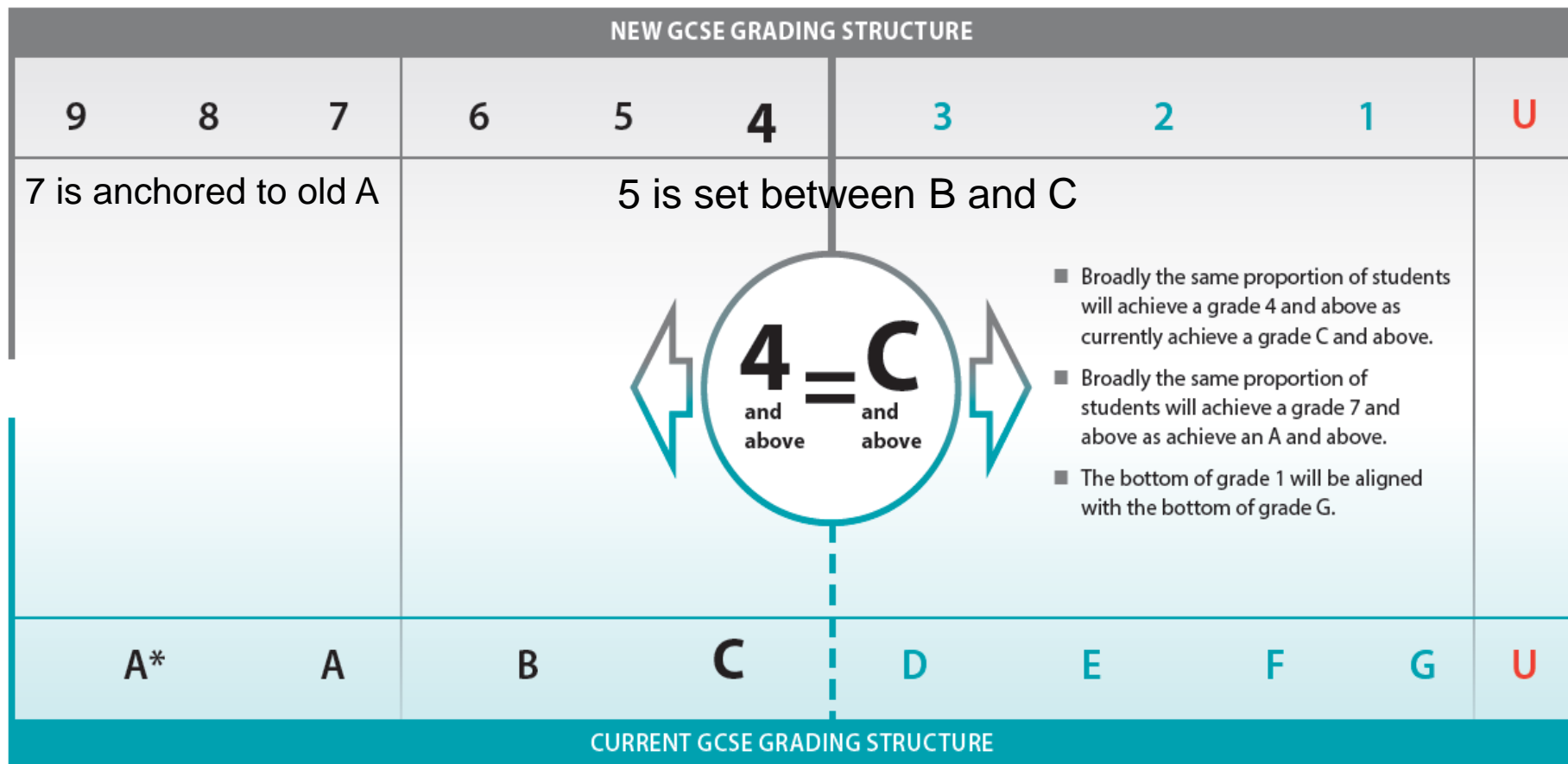
How to Revise Evening **Maths**



Nunthorpe
Academy

Grading the New GCSEs in 2017

Top 3% of pupils achieve 9



1 is the old F and G

New Maths Content

New Foundation Content (from Higher)

- Index laws: zero and negative powers (numeric and algebraic)
- Standard form
- Compound interest and reverse percentages
- Direct and indirect proportion (numeric and algebraic)
- Expand the product of two linear expressions
- Factorise quadratic expressions in the form $x^2 + bx + c$
- Solve linear/linear simultaneous equations
- Solve quadratic equations by factorisation
- Plot cubic and reciprocal graphs, recognise quadratic and cubic graphs
- Trigonometric ratios in 2D right-angled triangles
- Fractional scale enlargements in transformations
- Lengths of arcs and areas of sectors of circles
- Mensuration problems
- Vectors (except geometric problems/proofs)
- Density
- Tree Diagrams

New Content (both Tiers)

- Use inequality notation to specify simple error intervals.
- Identify and interpret roots, intercepts, turning points of quadratic functions graphically; deduce roots algebraically.
- Fibonacci type sequences, quadratic sequences & geometric sequences.
- Relate ratios to linear functions.
- Interpret the gradient of a straight line graph as a rate of change.
- Know the exact values of $\sin \theta$ and $\cos \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90° ; know the exact value of $\tan \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ$ and 60° .

New Higher Content (from A level)

- Expand the products of more than two binomials
- Interpret the reverse process as the 'inverse function'; interpret the succession of two functions as a 'composite function' (using formal function notation)
- Deduce turning points by completing the square
- Calculate or estimate gradients of graphs and areas under graphs, and interpret results in real-life cases (not including calculus)
- Simple geometric progressions including surds, and other sequences
- Deduce expressions to calculate the n th term of quadratic sequences
- Calculate and interpret conditional probabilities through Venn diagrams

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|-----------------------------|---|
| • Trial and improvement | • Questionnaires |
| • Tessellations | • 3D coordinates |
| • Isometric grids | • Rotation and enlargement of functions |
| • Imperial units of measure | |



New Maths Content - Formulae

Formulae required at the Foundation tier that are not to be provided on a formula sheet include:	• Pythagoras' theorem	$a^2 = b^2 + c^2$
	• trigonometric ratios	$\sin\theta = \frac{o}{h}, \cos\theta = \frac{a}{h}, \tan\theta = \frac{o}{a}$
	• area of a trapezium	$\frac{1}{2}(a+b)h$
	• volume of a prism	(area of cross section) \times length

Formulae required at the Higher tier that are not to be provided on a formula sheet include:	• the quadratic formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
	• the sine rule	$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$
	• the cosine rule	$a^2 = b^2 + c^2 - 2bc \cos A$
	• area of a triangle	$\frac{1}{2}ab \sin C$

Maths Revision

- Revise for short amounts of time regularly.
- Use revision guides etc. to make notes/spider diagrams etc.
- Learn key formulae – make use of songs etc.
- Practice of exam questions is key.
- Make use of mark schemes.

Maths Revision - Useful Websites

- Hegarty Maths

<https://hegartymaths.com/>

Student's first name, surname, date of birth, they choose the password

- Maths Watch

<https://www.vle.mathswatch.com/>

Centre id = Nunthorpe; password = qwerty; student name = 1234smithj@nunthorpe

- PiXL App

<https://mathsapp.pixl.org.uk/PMA.swf>

School id = NU94; Userid = Surname&FirstInitial; Password = qwerty

