

Information for Issy's progress

1. Exam topic weightings

AQA EXAM BOARD

All content can be assessed on any of the three question papers. As such, some questions will draw together elements of maths from different topic areas.

The weighting of the topic areas has been prescribed by Ofqual and is common to all exam boards. The table below shows the approximate weightings of the topic areas for the overall tier of assessment, **not** for each individual question paper.

TOPIC AREA	FOUNDATION (%)	HIGHER (%)
Number	25	15
Algebra	20	30
Ratio	25	20
Geometry	15	20
Probability and Statistics (combined)	15	15

The subject content, aims and learning outcomes, and assessment objectives sections of this specification set out the knowledge, skills and understanding common to all GCSE Mathematics exams.

https://assets.publishing.service.gov.uk/media/5a7cb5b040f0b6629523b52c/GCSE_mathematics_subject_content_and_assessment_objectives.pdf

This link to the Dfe outlines the maths curriculum.

EDEXCEL EXAM BOARD

Edexcel do not break down weighting into topic areas, rather the skills set being applied. This link will explain this in more detail. Read pages 21 to 25.

<https://qualifications.pearson.com/content/dam/pdf/GCSE/mathematics/2015/specification-and-sample-assesment/gcse-maths-2015-specification.pdf>

ASSESSMENT OBJECTIVE	FOUNDATION (%)	HIGHER (%)
AO1	50	40
AO2	25	30
AO3	25	30

For a breakdown of what each topic contains, read the same document from pages 12 to 20. This information is valid for whatever exam board is used.

2. The use of formulae in the exams

This year, students were given the formula sheet but for exams in 2025, this may not be the case. Below is helpful information on formulas that will be needed. Some will only be used and seen on the Higher tier papers.

Students are expected to know and memorise the following formulae included in the subject content; they will **not** be given in the exam. Refer to the Subject content section to determine the tier at which these formulae could be used.

The quadratic formula

The solutions of $ax^2+bx+c=0$, where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Circumference and area of a circle

Where r is the radius and d is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

Pythagoras' theorem

In any right-angled triangle where a , b and c are lengths of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

Trigonometry formulae

In any right-angled triangle ABC where a , b and c are lengths of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c}, \cos A = \frac{b}{c}, \tan A = \frac{a}{b}$$

In **any** triangle ABC where a , b and c are lengths of the sides:

sine rule: $a \sin A = b \sin B = c \sin C$

cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$

Area = $\frac{1}{2}ab \sin C$

Perimeter, area, surface area and volume formulae

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium = $\frac{1}{2}(a+b)h$

Volume of a prism = area of cross section x length

Compound interest

Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

Total accrued = $P(1+r/100)^n$

Probability

Where $P(A)$ is the probability of outcome A and $P(B)$ is the probability of outcome B :

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$P(A \text{ and } B) = P(A \text{ given } B)P(B)$

Students are **not** expected to memorise the following formulae; they will be given in the exam in the relevant question. Refer to the Subject content section to determine the tier at which these formulae could be used. Again, some may not be necessary for the Foundation tier.

Perimeter, area, surface area and volume formulae

Where r is the radius of the sphere or cone, l is the slant height of a cone and h is the perpendicular height of a cone:

Curved surface area of a cone = πrl

Surface area of a sphere = $4\pi r^2$

Volume of a sphere = $\frac{4}{3}\pi r^3$

Volume of a cone = $\frac{1}{3}\pi r^2 h$

Kinematics formulae

Where a is constant acceleration, u is initial velocity, v is final velocity, s is displacement from the position when $t=0$ and t is time taken:

$$v = u + at$$

$$s = ut + \frac{1}{2}at^2$$

$$v^2 = u^2 + 2as$$

3. Links to good books for practice and revision

<https://collins.co.uk/collections/revision-gcse-ages-14-16-collins-gcse-9-1-maths-revision>

Very clear. User friendly. Provides practice and good revision and has online videos and quizzes.

<https://www.cgpbooks.co.uk/secondary-books/gcse/bestselling-gcse-maths?srsItd=AfmBOop3XwqXMDUOQzxDdaTHzP4oiZw0ETKerNZkTkWj542QM--gUf2W>

Very popular books but know to be a bit fussy. Pages can look busy with a lot of information. Still very good.

<https://mmerevise.co.uk/gcse-maths-books/>

Something a bit different and with specific applications. This website also has predicted paper books which can be useful in Y11.

4. Good websites (revision, worksheets, past papers, online practice tests, videos)

www.Maths4everyone.com

www.mathsgenie.com

www.onmaths.com

(This one I especially like because it tests you online and marks it for you)

www.savemyexams.com

www.physicsandmathstutor.com

www.1stclassmaths.com

Each offer different things and serve different purposes. It is best to have a look and see what they can offer.