

2017 AS/A level Mathematics specifications: How does the content compare?

The information in this document is intended to provide a helpful summary of the differences between the current and the 2017 specifications for AS and A level Mathematics. It is based on the document [Mathematics AS and A level content](#) published by the DfE in April 2016.

We have made every effort to ensure the accuracy of this information; however we shall not be held responsible for any inaccuracies it may contain.

Pure Maths

The content of the 2017 AS/A level Mathematics specifications is broadly similar to that of the current specifications.

For more detail, watch the video available on the MEI [website](#).

Statistics

The new statistics content has a greater emphasis on interpretation than in the current specifications. The table below provides a topic-based comparison between current and 2017 AS/A level Mathematics specifications.

	Current specifications					2017 specifications
	AQA	Edexcel	OCR	OCR(MEI)	WJEC	
Statistical sampling						
Sampling	S1	S2	S2	S1	S2	AS
Data presentation and interpretation						
Histograms	-	S1	S1	S1	-	AS
Centre and spread	S1	S1	S1	S1	-	AS
Outliers	S1	S1	-	S1	-	AS
Skewness	-	S1	-	S1	-	AS
Scatter diagrams (interpret)	S1	S1	S1	S2	-	AS
Least squares regression line	S1	S1	S1	S2	S3	AS (use)
Recognise correlation	S1	S1	S1	S2	-	AS
Calculate PMCC	S1	S1	S1	S2	-	-
Calculate Spearman's rank	-	S3	S1	S2	-	-
Probability						
Independent events	S1	S1	S1	S1	S1	AS
Conditional probability	S1	S1	S1	S1	S1	A level
Permutations and combinations	-	-	S1	-	S1	-
Statistical distributions (discrete random variables)						
Definition	S1	S1	S1	S1	S1	AS
Modelling	S1	S1	S1	S1	S1	AS
Expectation	S2	S1	S1	S1	S1	-
Variance	S2	S1	S1	S1	S1	-
Geometric	S4	-	S1	-	-	-
Statistical distributions (binomial distribution)						
$P(X=r)$	S1	S2	S1	S1	S1	AS
$P(X \leq r)$	S1	S2	S1	S1	S1	AS
Mean and variance	S1	S2	S1	S1	S1	-

	Current specifications					2017 specifications
	AQA	Edexcel	OCR	OCR(MEI)	WJEC	
Statistical distributions (Poisson distribution)						
P($X=r$)	S2	S2	S2	S2	S1	-
P($X\leq r$)	S2	S2	S2	S2	S1	-
Mean and variance	S2	S2	S2	S2	S1	-
Statistical distributions (continuous random variables)						
Probability density function	S2	S2	S2	S3	S1	-
Cumulative distribution function	S2	S2	S3	S3	S1	-
Median, quartiles, percentiles	S2	S2	S2	S3	S1	-
Mean, variance, standard deviation	S2	S2	S2	S3	S1	-
Statistical distributions (normal distribution)						
Modelling	S1	S1	S2	S2	S2	A level
Probabilities	S1	S1	S2	S2	S2	A level
Approximation	S3	S2	S2	S2	S2	-
Confidence intervals	S1	S3	S3	S3	S2	-
CLT	S1	S3	S2	S3	S2	-
Statistical hypothesis testing						
Binomial for p	S3	S2	S2	S1	S2	AS
Normal for mean	S2	S3	S2	S2	S2	A level
Correlation	S3	S3	-	S2	-	A level
Poisson for mean	S3	S2	S2	-	S2	-
Chi-Squared for contingency table	S2	S3	S3	S2	-	-

Mechanics

The new A levels have a greater emphasis on modelling. This is likely to be particularly prevalent in the Mechanics content.

The table below provides a topic-based comparison between current and 2017 AS/A level Mathematics specifications.

	Current specifications					2017 Specifications
	AQA	Edexcel	OCR	OCR(MEI)	WJEC	
Modelling						
The modelling cycle applied to problems	M1	M1	M1	M1	M1	AS
SI units	-	M1	-	M1	-	AS
Vectors						
The properties of vectors	M1	M1	M1	M1	M2	AS ¹
Scalar product and applications	-	M5	-	-	M2	-
Kinematics						
Terminology	M1	M1	M1	M1	M1	AS
Kinematics graphs	M1	M1	M1	M1	M1	AS
Constant acceleration formulae	M1	M1	M1	M1	M1	AS ²
Use of calculus - variable acceleration	M2	M3	M1	M1	M2	AS ²
Vertical motion under gravity	M1	M2	M1	M1	M1	AS
Forces						
Identification of forces and force diagrams	M1	M1	M1	M1	M1	AS
Vector treatment of forces - equilibrium, resultants	M1	M1	M1	M1	M1	AS ²
Modelling friction	M1	M1	M1	M2	M1	A level
Moments	M2	M1	M2	M2	M1	A level
Rigid bodies in equilibrium - sliding, toppling	M2	M2	M2	M2	M1	-
Light frameworks	M4	-	-	M2	M1	-
Centre of mass	M2	M2	M2	M2	M1	-

¹ Extend to 3 dimensions at A level

² Extend to resolving forces at A level

	Current specifications					2017
	AQA	Edexcel	OCR	OCR(MEI)	WJEC	Specifications
Newton's laws of motion						
Newton's three laws	M1	M1	M1	M1	M1	AS ²
Connected particles	M1	M1	M1	M1	M1	AS
Projectiles						
The motion of a projectile	M1	M2	M2	M1	M2	A level
Equation of trajectory	M3	-	M2	M1	-	-
Work, energy & power						
Kinetic and mechanical energy	M2	M2	M2	M2	M2	-
Work-energy principle	M2	M2	M2	M2	M2	-
Power	M2	M2	M2	M2	M2	-
Hooke's law	M2	M3	M3	M3	M2	-
Energy in strings & springs	M2	M3	M3	M3	M2	-
Momentum and impulse						
Conservation of linear momentum	M1	M1	M1	M2	M1	-
Impulse	M3	M1	M2	M2	M1	-
Coefficient of restitution	M3	M2	M2	M2	M1	-
Impact with fixed surface	M3	M2	M2	M2	M1	-
Oblique impact	M3	M4	M3	M2	-	-
Circular motion						
Horizontal	M2	M3	M2	M3	M2	-
Vertical	M2	M3	M3	M3	M2	-

² Extend to resolving forces at A level