



AS/A Level Mathematics and Further Mathematics

AS/A level Mathematics course structure

All of the content in the AS/A level Mathematics qualification is compulsory and is the same for all examination boards.

Pure Mathematics
66%

Statistics
17%

Mechanics
17%

What is AS level Mathematics?

$$(x + 1)^1 = 1x + 1$$

$$(x + 1)^2 = 1x^2 + 2x + 1$$

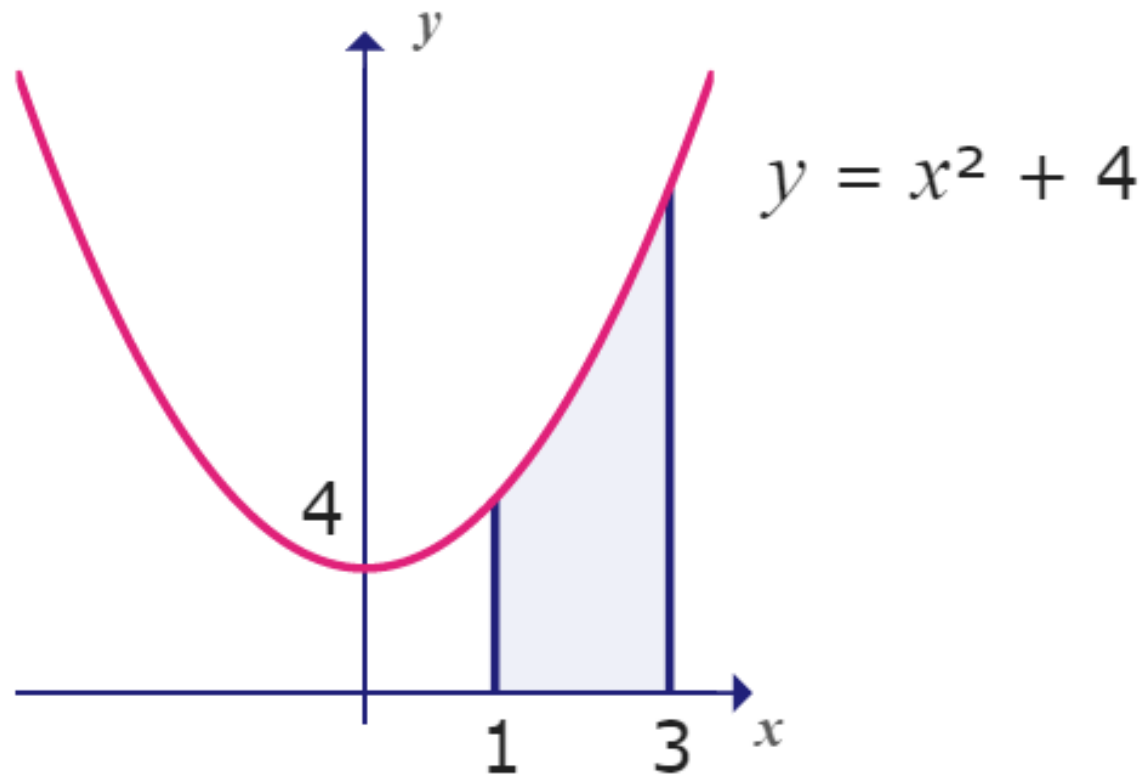
$$(x + 1)^3 = 1x^3 + 3x^2 + 3x + 1$$

$$(x + 1)^4 = 1x^4 + 4x^3 + 6x^2 + 4x + 1$$

$$\begin{array}{ccccccc}
 & & & & 1 & & 1 \\
 & & & & & 1 & & 2 & & 1 \\
 & & & 1 & & 3 & & 3 & & 1 \\
 & & 1 & & 4 & & 6 & & 4 & & 1
 \end{array}$$

Pure Mathematics

What is A level Mathematics?

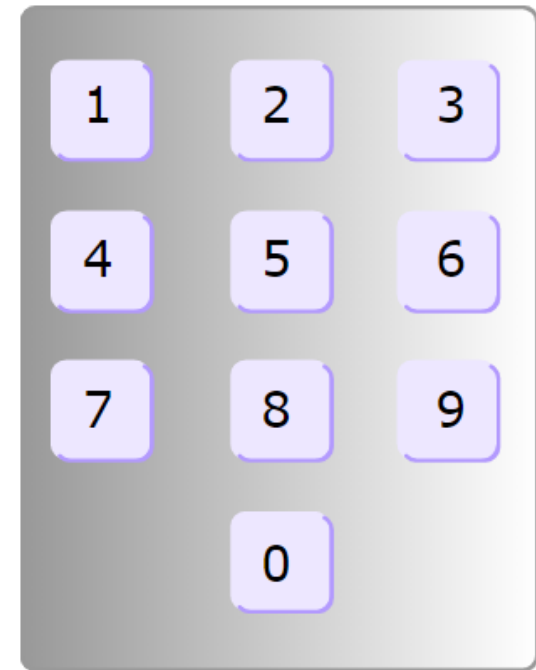


Pure Mathematics

What is AS/A level Mathematics?

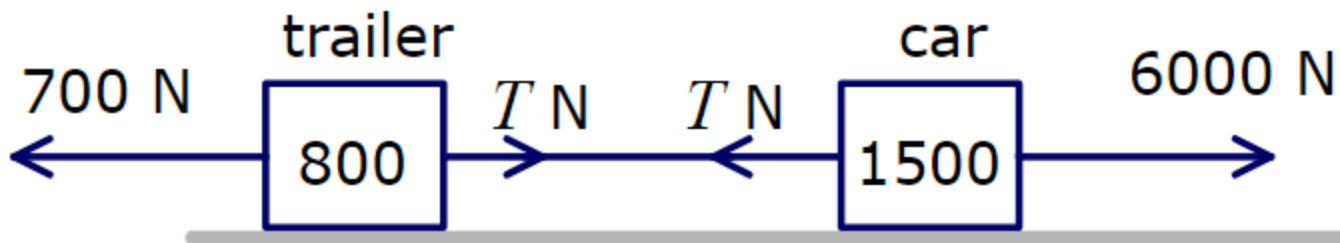
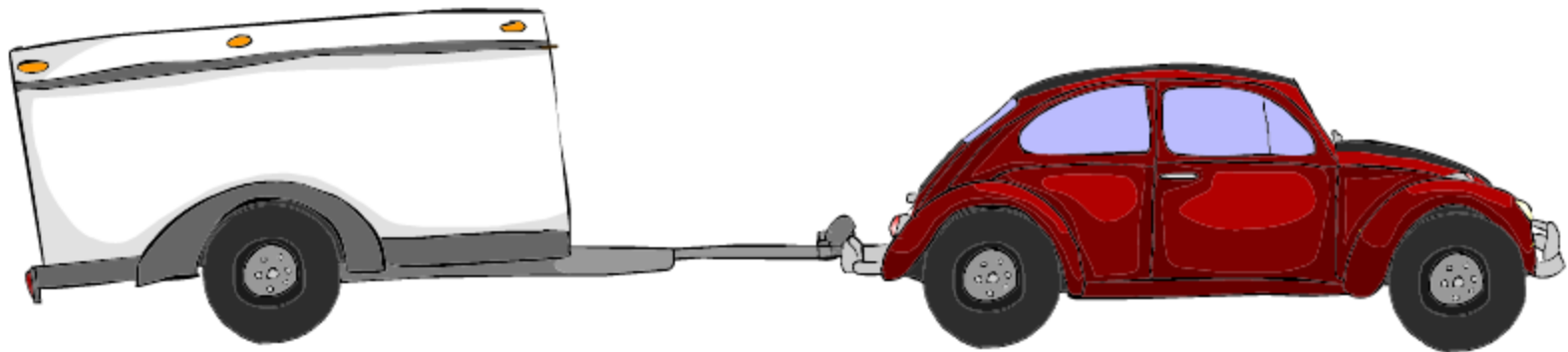
Tom has trouble remembering his pin number. He knows it contains the digits 1, 3, 4 and 6 but he can't remember the order.

How many different orders are there?



Statistics

What is AS/A level Mathematics?



Mechanics

\longrightarrow
 $a \text{ ms}^{-2}$

AS/A level Further Mathematics course structure

Further Mathematics is taken **in addition** to A level Mathematics

AS level

Pure
Mathematics

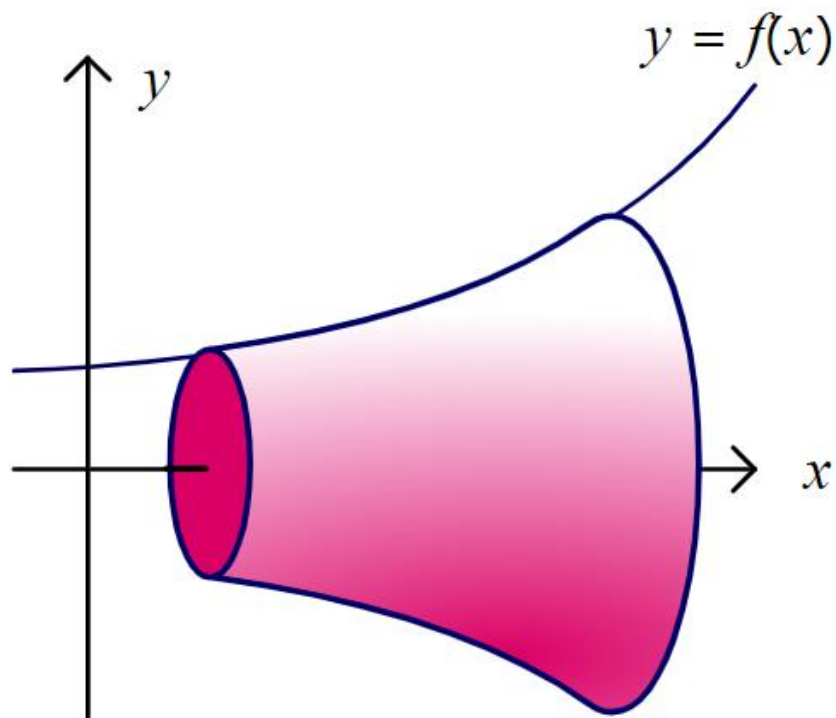
Additional Pure, Statistics,
Mechanics or Decision
Mathematics

A level

Pure Mathematics

Additional Pure, Statistics, Mechanics or Decision
Mathematics

What is A level Mathematics?



Further Mathematics - Core Pure Mathematics

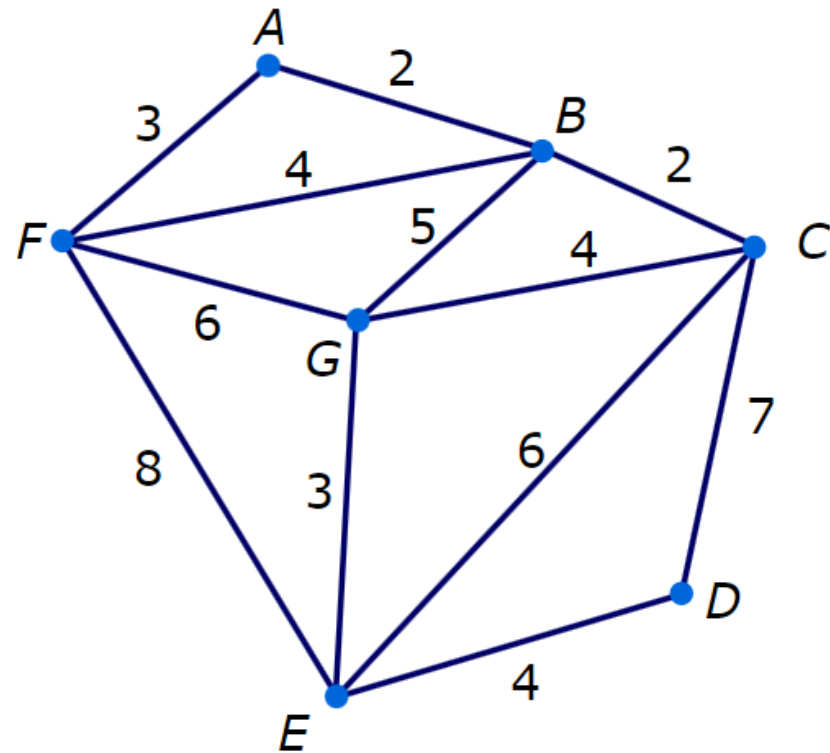
What is A level Further Mathematics?

The graph shows the roads in a village, with lengths in hundreds of metres.

A postman starts and finishes his round at A.

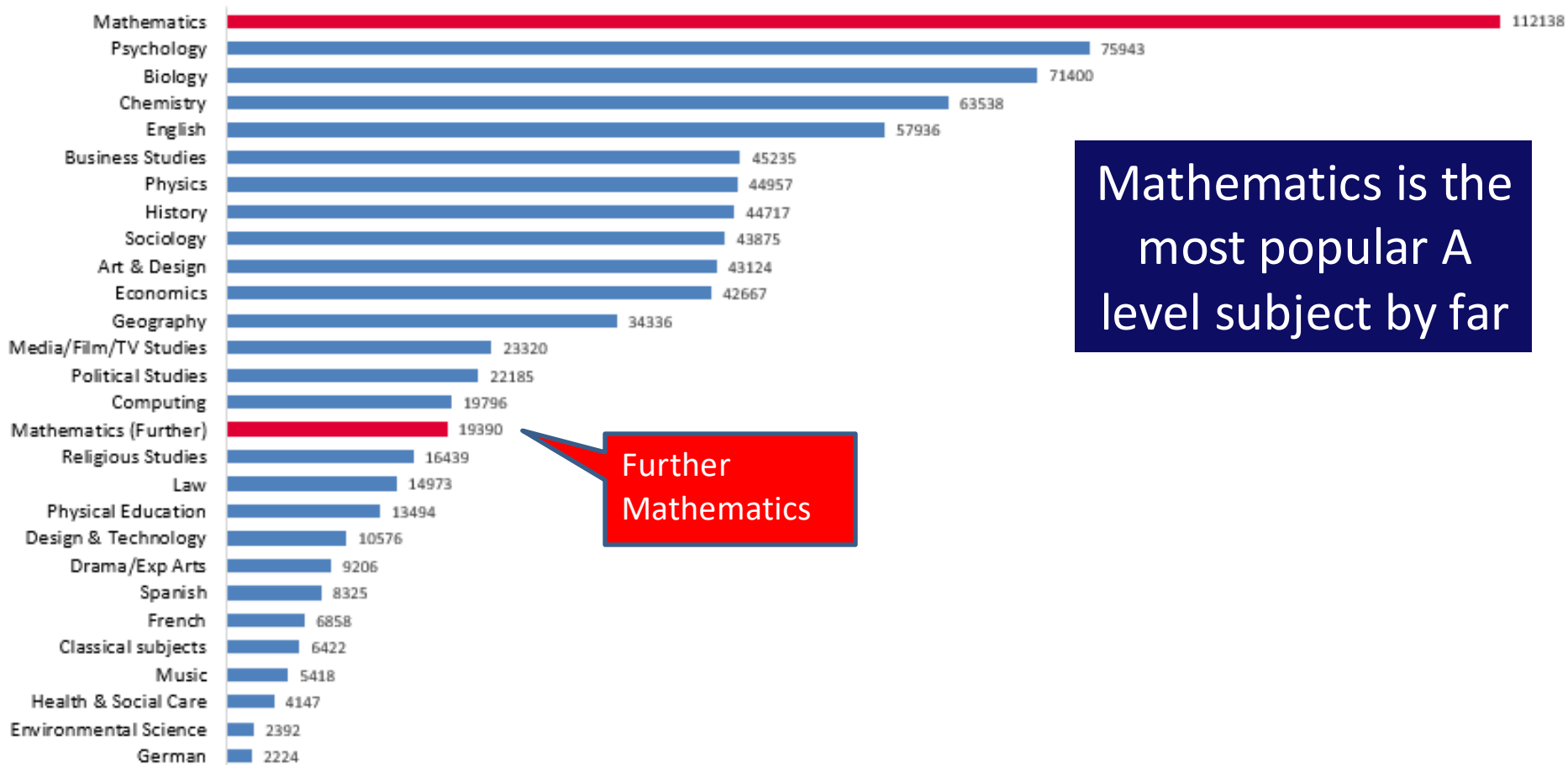
He needs to walk along every road at least once to deliver the post.

How far will he have to walk to do this?



Further Mathematics – Decision Maths

2025 A level entries by subject



Mathematics is the most popular A level subject by far

Further Mathematics

Girls' participation in Mathematics





Top 12 A level subjects for females in the UK in 2025



- Maths is the fourth most popular A level for girls
- More girls take maths than boys take physics at A level
- Parents and carers play a **key** role in positively influencing girls' A level and future career choices towards mathematics in both STEM and non-STEM disciplines

Many subjects use maths

At least....

	Physics	40%		Chemistry	20%
	Economics	20%		Geography	20%
	Biology	10%		Business	10%
	Computing	10%		Psychology	10%
	PE	5%		Sociology	Analysing data

Career opportunities



Career opportunities

- Medical
- Game Design
- Internet Security
- Financial Cryptography
- Computing
- Communications
- Artificial Intelligence



Career opportunities

On-going applications in engineering, such as:

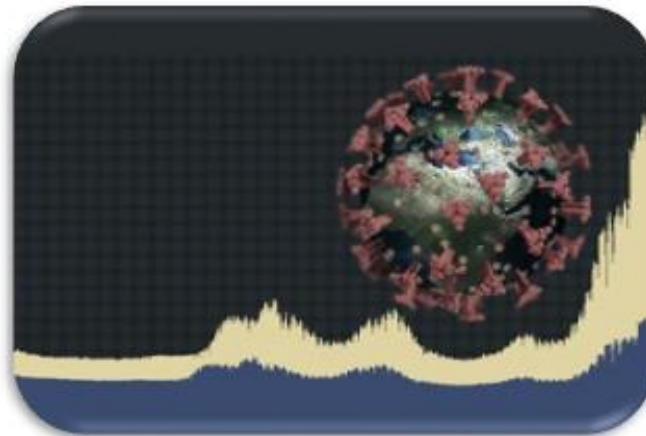
- Aerospace
- Fluid Flows
- Acoustic
- Software Development
- Electronics
- Civil Engineering.



Career opportunities

New scientific processes such as:

- Modelling populations
- Modelling diseases
- Quantum Physics
- Astronomy
- Forensics
- DNA sequencing



Career opportunities

Applications relating to human behaviours and interactions:

- Data Science
- Psychology
- Law
- Economics
- Climate Change
- Environmental Modelling
- Political Science
- International Development



FPSS entry requirements

AS/A level Mathematics

- At least **grade 6** in GCSE Maths.

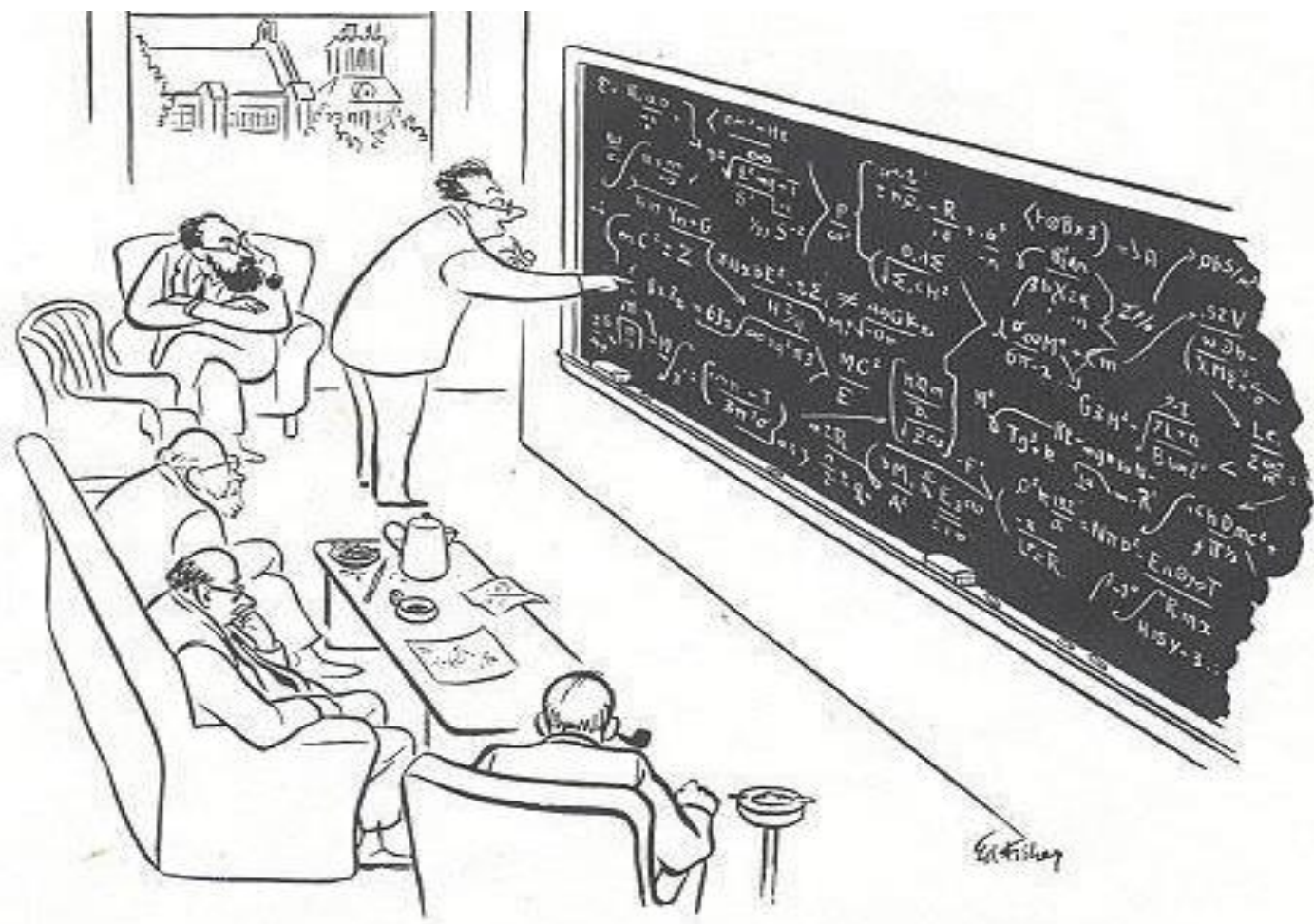
AS/A level Further Mathematics

- At least **grade 7** in GCSE Maths.
- Must be studying AS/A level Mathematics.

Why Maths at FPSS?

- Highly skilled subject specialists.
- Maths workshop after school.
- 1-1 tutorials with teachers as required.
- KS5 intervention tutor.
- Online subscriptions to ActiveLearn, Integral, MyMaths.
- UKMT maths challenges.
- Opportunities to become a Maths ambassador.
- Mentoring programme for younger students.

Mathematics



"Say, I think I see where we went off. Isn't eight times seven fifty-six?"