

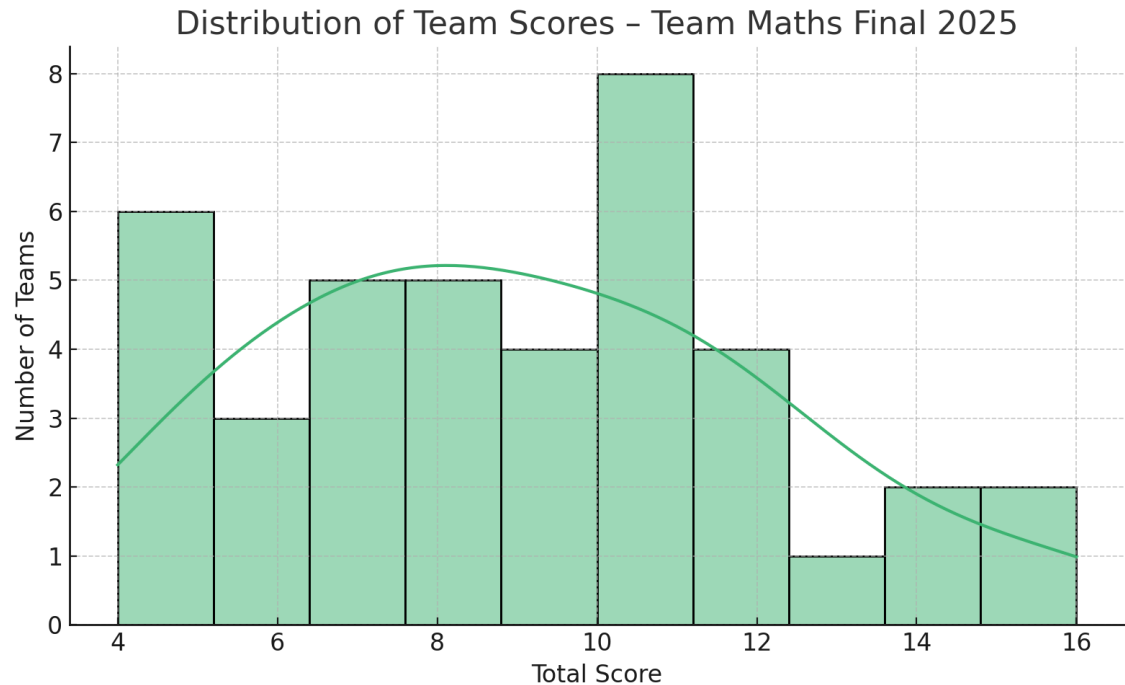
Team Maths Final 2025 – Full Statistical Report

This report presents a comprehensive analysis of the Team Maths Final 2025, hosted by the Irish Mathematics Teachers' Association. It includes team rankings, question difficulty, topic classification, statistical summaries, and strand-based performance comparisons.

Overall Performance Summary

- Mean Score: 9.05
- Median Score: 9.0
- Mode Score: 7
- Standard Deviation: 3.15
- Minimum Score: 4
- Maximum Score: 16

Score Distribution

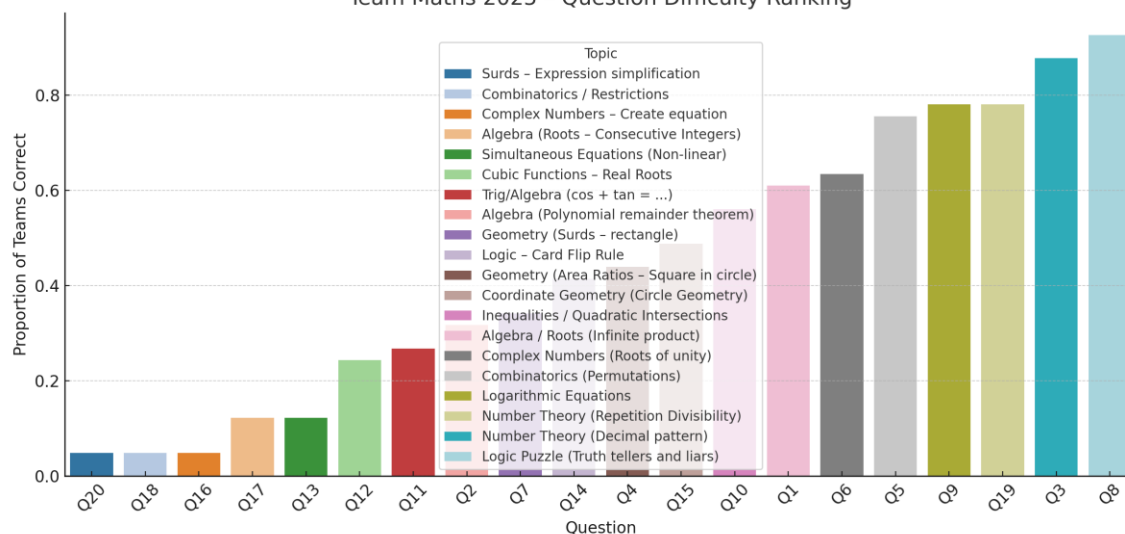


Leaderboard (Scores ≥ 10)

Rank	School and Total Score
1	Institute of Education C – 16
2	Oatlands College A (2nd) – 16
3	PBC Cork A – 14
4	Sutton Park A (3rd) – 14
5	The High School C – 13
6	Athlone Community College B – 12
7	Clárin College A – 12
8	Gonzaga College A – 12
9	St. Conleth's College A – 12
10	Kinsale Community School C – 11
11	The Kings Hospital A – 11
12	Villiers Secondary School A – 11
13	Belvedere College S.J. B – 11
14	St. Columba's College A – 10
15	Institute of Education A – 10
16	Glenstal Abbey School A – 10
17	Sandford Park School B – 10

Question Difficulty and Topics

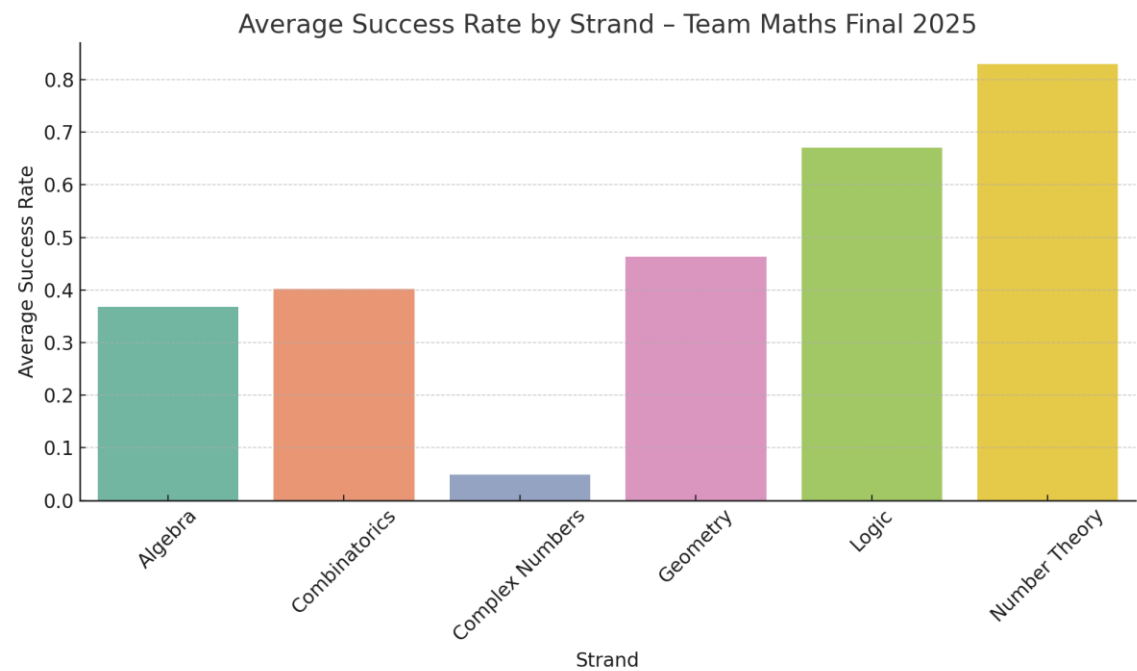
Team Maths 2025 – Question Difficulty Ranking



The chart above ranks questions from hardest to easiest. The table below includes topic tags and success rates.

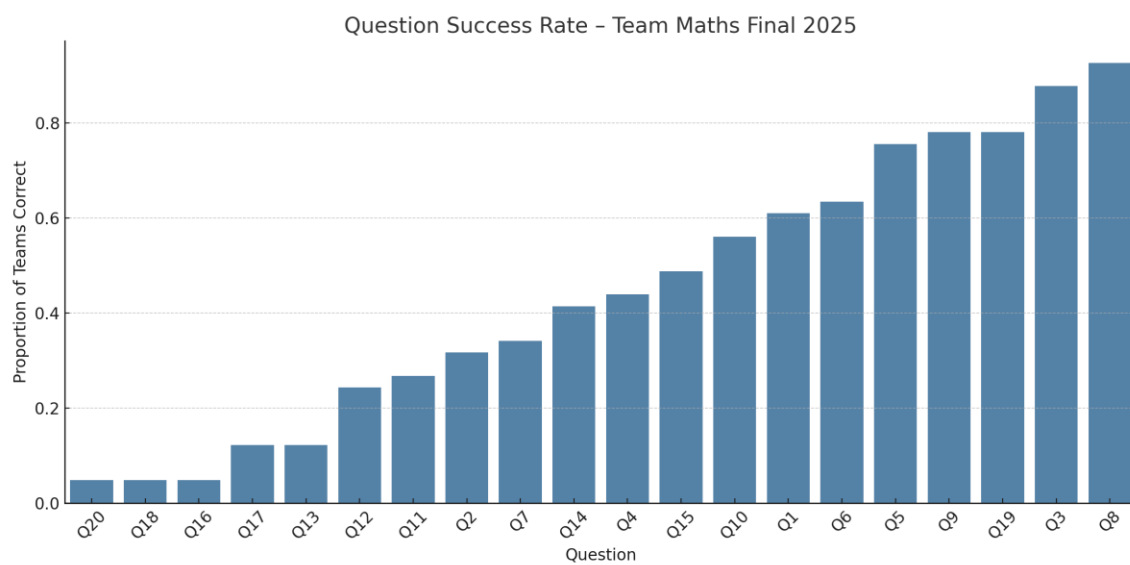
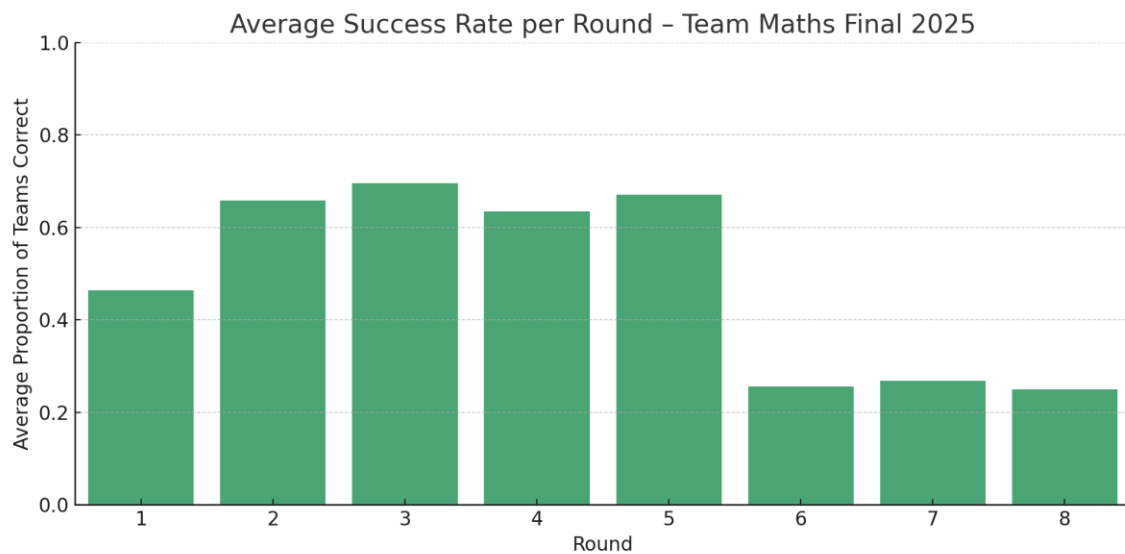
Question	Mean Success Rate	Topic	Topic
Q20	0.05	Surds – Expression simplification	Algebra
Q18	0.05	Combinatorics / Restrictions	Combinatorics
Q16	0.05	Complex Numbers – Create equation	Complex Numbers
Q17	0.12	Algebra (Roots – Consecutive Integers)	Algebra
Q13	0.12	Simultaneous Equations (Non-linear)	Algebra
Q12	0.24	Cubic Functions – Real Roots	Algebra
Q11	0.27	Trig/Algebra ($\cos + \tan = \dots$)	Algebra
Q2	0.32	Algebra (Polynomial remainder theorem)	Algebra
Q7	0.34	Geometry (Surds – rectangle)	Algebra
Q14	0.41	Logic – Card Flip Rule	Logic
Q4	0.44	Geometry (Area Ratios – Square in circle)	Geometry
Q15	0.49	Coordinate Geometry (Circle Geometry)	Geometry
Q10	0.56	Inequalities / Quadratic Intersections	Algebra
Q1	0.61	Algebra / Roots (Infinite product)	Algebra
Q6	0.63	Complex Numbers (Roots of unity)	Algebra
Q5	0.76	Combinatorics (Permutations)	Combinatorics
Q9	0.78	Logarithmic Equations	Algebra
Q19	0.78	Number Theory (Repetition Divisibility)	Number Theory
Q3	0.88	Number Theory (Decimal pattern)	Number Theory
Q8	0.93	Logic Puzzle (Truth tellers and liars)	Logic

Topic-Based Analysis



Average success rates across key mathematical strands are shown above. Breakdown table below:

Strand	Average Success Rate	Number of Questions
Algebra	0.37	11
Combinatorics	0.40	2
Complex Numbers	0.05	1
Geometry	0.46	2
Logic	0.67	2
Number Theory	0.83	2



Insights for Teachers & Teaching

1. Geometry and Trigonometry

Observed in Team Maths:

- **Q4 (Area ratio, square in circle)** and **Q7 (Rectangle + surd)** were moderately successful.
- **Q15 (Coordinate geometry – circle)** had one of the **lowest success rates**.

Comparison:

- **PISA:** Irish students historically do well on basic spatial reasoning but underperform in **non-routine or abstract geometry**.
- **LC HL Maths:** Paper 2 geometry questions often trip students up when algebra is embedded (e.g. coordinates + circle theorems).

Insight:

Students manage **procedural geometry**, but struggle with **multi-strand reasoning** tasks — especially when geometry intersects with algebra or logic.

2. Algebra & Equations

In Team Maths:

- **Algebraic tasks** like **Q1 (infinite product)** and **Q9 (logs)** were relatively well attempted.
- **Q17 (consecutive roots)** had **only 2 correct answers** despite being a core Leaving Cert topic.

Comparison:

- **TIMSS & PISA:** Irish students show solid performance in **linear algebra**, but weaker in **algebraic thinking**, such as symbolic manipulation or pattern generalization.
- **LC HL Maths:** Algebra dominates Paper 1. Students often rote-learn procedures but may struggle with contextual or conceptual questions.

Insight:

Strong foundational algebra skills exist, but there's a drop when abstract reasoning or problem framing is required.

3. Number Theory & Patterns

Team Maths Questions:

- Q3 (decimal digit position) and Q19 (repetition divisibility) performed well.
- Q6 (complex roots) and Q16 (constructing surd-based cubic) saw very low performance.

Comparison:

- PISA: Irish students excel in identifying numerical patterns and working with number properties.
- LC HL: Number Theory isn't a dominant strand in LC, but it does feature in structured questions (e.g. proof by induction, mod arithmetic).

Insight:

Students are generally good at **pattern spotting** and procedural arithmetic but struggle when **deep abstraction** or **number properties** are framed in less familiar ways.

4. Logic & Problem Solving

Team Maths:

- Q8 (truth-tellers logic puzzle) and Q14 (Wason card test) were challenging but revealing.
- These types align closely with **real-world reasoning** and **argument evaluation**.

Comparison:

- PISA: Performance dips significantly on **open-ended logical reasoning**.
- LC HL: Very little room for logic puzzles, deductive reasoning, or combinatoric argumentation.

Insight:

There's a **gap in curricular exposure** to logic-based problem solving, which affects both international assessments and contests like Team Maths.

Final Reflection & Recommendations

Area	Strengths	Challenges
Algebra & Basic Number	Strong procedural fluency	Weak conceptual manipulation
Geometry	Visual and basic shape knowledge	Poor multi-strand reasoning
Logic & Reasoning	Limited exposure in curriculum	Needs embedding through puzzles/inquiry tasks
Cross-Strand Problems	Problems needing links between topics	Often unattempted or partially solved

How This Can Inform Teaching

- **Embed more multi-step, cross-topic problems** (e.g. geometry + algebra + logic).
- **Use competitions as diagnostic tools** to spot deeper conceptual gaps.
- **Incorporate reasoning & logic into TY / LC Maths** more explicitly.
- **Push beyond procedural fluency** — challenge students to generalize, compare, and justify.