

## RSS EVIDENCE ON NUMERACY FOR LIFE

27 April 2026

### 1 Introduction

- 1.1.1 This is the Royal Statistical Society's (RSS) evidence to the Numeracy for Life Committee on numeracy for life. The RSS is a membership organisation for statisticians and data scientists, and we advocate for the importance of statistics and data. Representing over 10,000 members, we champion the role of statistics and data in society, and work to ensure that policy formulation and decision-making are informed by evidence for the public good.
- 1.1.2 We believe that statistical and data literacy are important for all in our society to be able to understand the data and statistics which influence the world around them, and to empower people to meaningfully engage with this information. While numeracy – basic confidence and competence with numbers – is important, we believe that statistical literacy is fundamental for understanding what numbers mean in context.
- 1.1.3 Statistical and data literacy refers to the ability of students to understand, interpret, question and use data. It includes the ability to understand concepts such as averages and distributions, and interpret charts and tables. However, it also equips students to think critically by teaching them how to ask questions about data quality, sources, methodology and uncertainty, supporting them to interpret statistics.
- 1.1.4 The ability to think critically about data is essential in a data-rich world, where misinformation is widespread. In addition, as the use of Artificial Intelligence proliferates across almost every area of society, transforming how individuals interact with the state, the workplace, leisure, and



even their own health, statistical literacy is becoming even more important in ensuring future citizens understand the models underpinning the AI that shapes their lives.<sup>1</sup>

1.1.5 Our central proposal is that ‘Numeracy for Life’ should be understood as including statistical and data literacy, in addition to basic arithmetic skills. On this basis, we make the following recommendations:

*Recommendation 1: The government should develop a long-term national strategy to tackle negative attitudes towards maths and the normalisation of ‘maths avoidance’.*

*Recommendation 2: Statistical concepts relevant to AI should be embedded across disciplines, to ensure that all young people are equipped to use AI effectively and interpret AI outputs critically.*

*Recommendation 3: The pre-16 maths curriculum should be rebalanced to give greater emphasis to statistics, probability and data from a young age, in order to better reflect the skills required by the digital citizens of the future.*

*Recommendation 4: The government should expand support for initiatives for training in data skills, including apprenticeships and postgraduate conversion courses.*

## **2 Attitudes to numeracy**

2.1.1 The perception that it is acceptable to be ‘unable to do maths’ is extremely damaging, and it is in part a result of students not viewing maths as fundamental to developing skills relevant and necessary to everyday life.

2.1.2 Changing negative societal perceptions of maths demands a long-term strategy, with initiatives targeting all age groups, from primary school children to older adults. We believe this must be

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<sup>1</sup> Royal Statistical Society (2026). ‘AI is Statistics: Why statistical thinking is vital for the effective, ethical and safe use of AI’, <https://rss.org.uk/RSS/media/File-library/Policy/2026/AI-is-Statistics-FINAL.pdf>



accompanied by sustained action to shift cultural norms within influential institutions such as the civil service and the media (including online and social media platforms).<sup>2</sup>

*Recommendation 1: The government should develop a long-term national strategy to tackle negative attitudes towards maths and the normalisation of ‘maths avoidance’.*

2.1.3 To improve students’ experience of maths, we believe that pre-16 maths education should include more engaging topics with clearer real-life applications. In statistics and data education, this could mean working with real data sets in an area of interest to students, and introducing basic modelling and computing skills early, reflecting how statistical skills are applied in the real world.

### 3 Numeracy skills

3.1.1 The statistical literacy skills required of citizens are evolving as technologies change and AI-use becomes more pervasive. People are increasingly confronted with vast amounts of data and must be able to interpret information and critically assess claims across areas including health, climate and politics.

3.1.2 Mathematical, statistical and data literacy have direct relevance to everyday life. For example, for managing personal finances it is important to be able to calculate your average spending, understand interest rates, and evaluate risk when selecting mortgage or insurance products.

3.1.3 Data literacy also empowers people to understand information in the news, where headlines often rely on polls, percentages and averages, by helping people question things like sample size or bias. This is increasingly important as more people in the UK now consume news online than through TV, radio or newspapers, where the presentation of news is subject to clearer standards.<sup>3</sup>

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<sup>2</sup> Royal Statistical Society (2023). ‘Statistics and data in the maths to 18 proposals’, <https://rss.org.uk/RSS/media/File-library/Policy/2023/RSS-Maths-to-18-proposals-final.pdf>

<sup>3</sup> <https://www.ofcom.org.uk/media-use-and-attitudes/attitudes-to-news/top-trends-from-our-latest-look-at-the-uks-news-habits>



3.1.4 As AI use becomes more prevalent across society, statistical skills are essential for ensuring people understand how to use AI effectively and ethically. Statistical thinking helps people to question data quality, understand underlying assumptions, interpret uncertainty and assess limitations. We believe that key statistical concepts such as sampling error, bias, robustness and explainability are now practical skills which all citizens need to understand AI, and use it responsibly and effectively.

*Recommendation 2: Statistical concepts relevant to AI should be embedded across disciplines, to ensure that all young people are equipped to use AI effectively and interpret AI outputs critically.*

3.1.5 Low numeracy has significant consequences for individuals, the economy, and society, as highlighted during the Covid-19 pandemic. Many people were required to interpret information such as infection rates, vaccine effectiveness, and risks of side effects, yet limited statistical skills made it difficult to understand probabilities and trade-offs. This increased vulnerability to misinformation and contributed to vaccine scepticism, with some individuals misjudging risks or misunderstanding statistical uncertainty.<sup>4</sup>

3.1.6 At a national level, individuals' judgements about vaccine risks have implications for broader public health. Since the rollout of Covid-19 vaccines, vaccine scepticism has risen sharply.<sup>5</sup> This risks causing an increase in preventable illnesses and deaths, particularly among vulnerable groups. We believe that improvements to statistical and data literacy are vital to mitigate these harms.

## 4 Numeracy education

4.1.1 There are a number of challenges in the current system of maths education including: students leaving school without the skills needed to navigate daily life, students not enjoying maths

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<sup>4</sup> <https://www.imperial.ac.uk/news/articles/2026/insights-into-covid-19-vaccine-hesitancy-could-help-future-vaccine-rollouts/>

<sup>5</sup> <https://www.bbc.co.uk/news/articles/c1jgrlxx37do>



education, maths having a negative reputation, ongoing issues with teacher recruitment and retention, and assessments which lack authenticity.<sup>6</sup>

4.1.2 A survey of 580 Year 7 Mathematics lessons in early 2025 by the Observatory for Mathematical Education showed that just 5% were teaching statistics or probability, compared to 24% teaching on algebra and 17% on geometry.<sup>7</sup> The relative emphasis on geometry is the legacy of a curriculum aimed at preparing students for jobs in an engineering-based economy. Today, we believe that the lack of statistics education fails to prepare young people for a modern digital- and service-based economy, for handling data in the workplace, and for interpreting statistics and data in everyday life.

*Recommendation 3: The pre-16 maths curriculum should be rebalanced to give greater emphasis to statistics, probability and data from a young age, in order to better reflect the skills required by the digital citizens of the future.*

## 5 Numeracy for adults

5.1.1 The UK's shortage of data analysts suggests that we are not providing sufficient training opportunities to meet demand in the job market.<sup>8</sup> While there are government initiatives, such as TechLocal, aimed at boosting digital skills and jobs, data and statistics skills are not explicitly supported.<sup>9</sup> We believe that a similar scheme supporting the wider data and analytics sector might be beneficial for supporting skills development.

5.1.2 Postgraduate conversion courses in AI and data science are a valuable way of reskilling adults, particularly those without a background in STEM. We believe that government funding for scholarships is critical to ensuring a diverse supply of talent in the sector, however we are concerned that since March 2025, DSIT has no longer provided funding for scholarships for AI

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<sup>6</sup> Royal Statistical Society (2023). 'Statistics and data in the maths to 18 proposals',

<https://rss.org.uk/RSS/media/File-library/Policy/2023/RSS-Maths-to-18-proposals-final.pdf>

<sup>7</sup> Observatory for Mathematical Education (2025). 'Review of Mathematical Education 2025', <https://www.nottingham.ac.uk/observatory/documents/reports/rome-2025.pdf>, p. 74.

<sup>8</sup> <https://www.gov.uk/government/publications/skilled-worker-visa-temporary-shortage-list/skilled-worker-visa-temporary-shortage-list>

<sup>9</sup> <https://www.gov.uk/government/publications/techlocal>



and data science conversion courses. We would like to see the government reinstate this funding.

- 5.1.3 Apprenticeships offer a clear route for developing data skills beyond school. While Level 4-6 apprenticeships already exist for data analysts, data engineers and data scientists, there is a strong case for expanding provision at Level 3, to support those with lower levels of mathematical attainment at school.

*Recommendation 4: The government should expand support for initiatives for training in data skills, including apprenticeships and postgraduate conversion courses.*

## 6 Conclusion

- 6.1.1 Numeracy for life must go beyond basic competence with numbers to include statistical and data literacy, equipping people to interpret information in context, think critically about data, and engage confidently with the evidence which shapes decision-making in public life.
- 6.1.2 As data and AI increasingly shape everyday life, statistical skills are essential, practical skills needed by all to ensure resilience against misinformation, responsible and effective use of AI, and to empower people to be informed citizens.