A new approach to mathematical and data education

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Core questions

- What mathematical competencies will be needed for citizens and society to thrive in the future?
- How should education systems develop these mathematical competencies?
- What changes can be put in place to move towards that future?

Why is change needed?

- **Because the world has changed**

- Because our present system isn’t fit for purpose.

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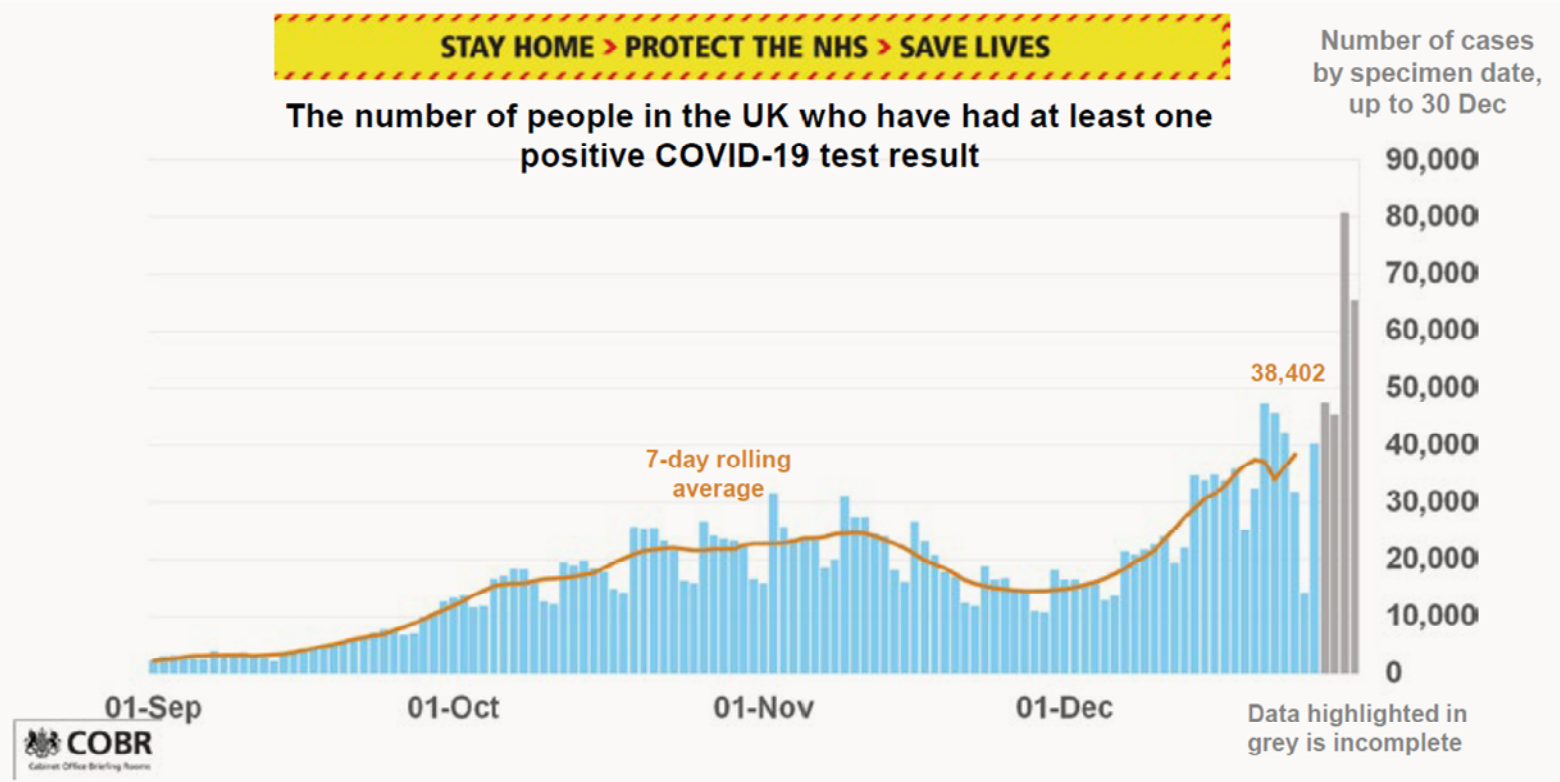
Covid

Slide shown at then Prime Minister Boris Johnson's address to the nation on 4 January 2021[41]



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A new approach – Mathematical and Data education (MDE).

"The nature of the mathematical education that is needed is changing from 'mathematics' to a fusion of mathematics, statistics, data science and computer science: - Mathematical and Data Education"

Three connected strands:

- Foundational and Advanced Mathematics
- General Quantitative Literacy
- Domain Specific Competences.

Foundational and advanced mathematics

- Foundational mathematics establishes the essentials for life and further learning.

- Advanced mathematics builds capacity for more demanding focused study and the application of mathematics and data science in subsequent learning.

General Quantitative Literacy

- The ability to use and apply mathematical concepts and use digital tools to solve real-world quantitative problems.

- Confidence and fluency in general arithmetic and proportional reasoning are its foundations, together with an appreciation of presenting and interpreting data.

Domain-specific competencies (DSCs)

- Mathematical and data skills are increasingly necessary outside the mathematics classroom, incorporated in to HE learning, and the workplace, ie in domain-specific contexts.

- Learners use and apply mathematical and data skills in a range of other subjects and disciplines.

Implementation

"The reforms we seek cannot be developed by limited short-term measures; they would take 10 – 15 years to implement fully. They would need investment, careful planning, design, implementation, and evaluation. They would require collaboration between the stakeholders involved, cross-party support and determination to stay the course."

MFP Consultation document August 2023

Thank you!

Link to the final report:

https://royalsociety.org/topics-policy/projects/mathematical-futures/

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