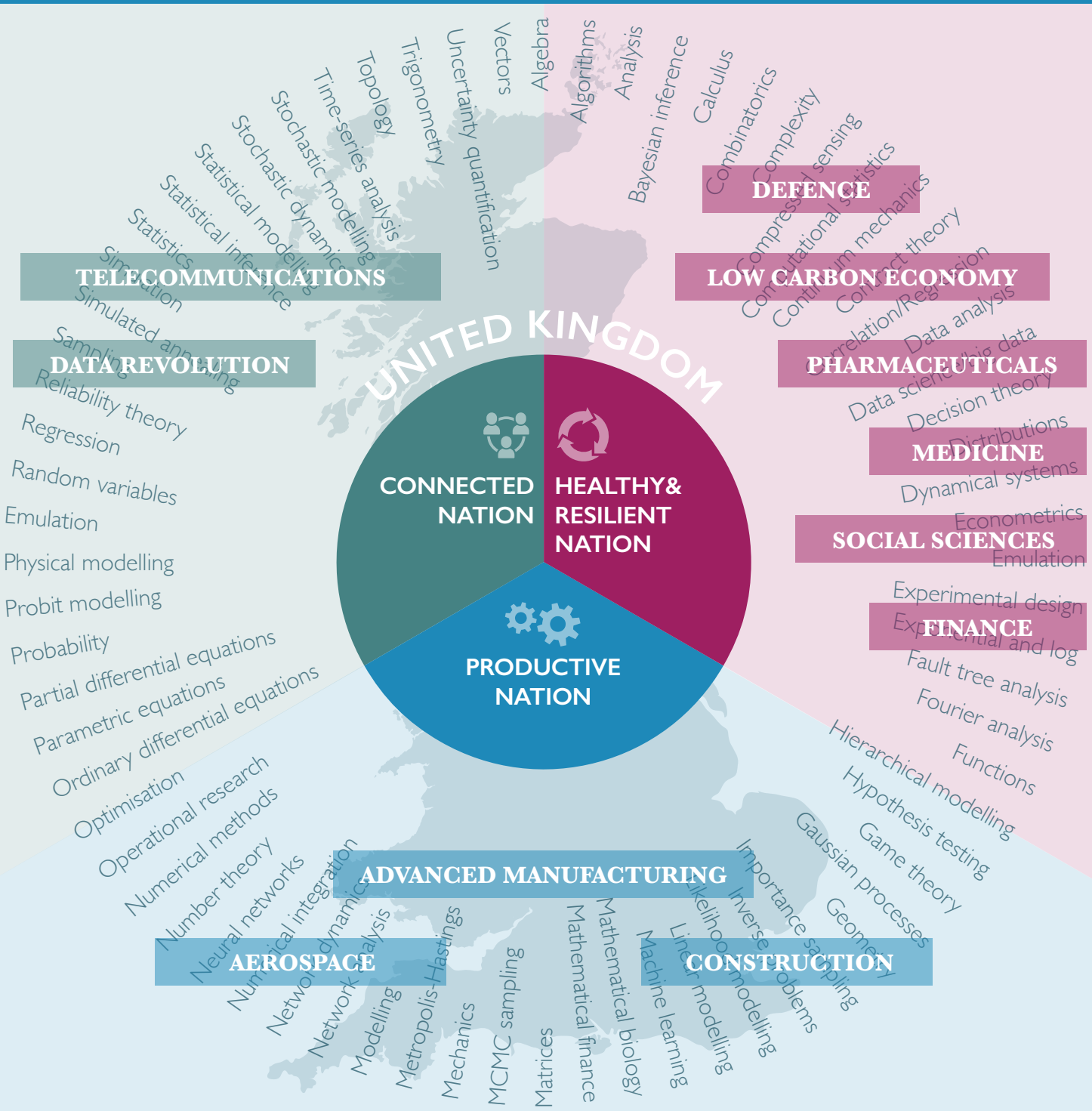
LONDON MATHEMATICAL SOCIETY
EST. 1865

MATHEMATICAL SCIENCES:

THE ROUTE TO ECONOMIC PROSPERITY

Mathematical Sciences are essential to economic growth across the UK



A significant proportion of employers across all sectors struggle to recruit a sufficient number of mathematically skilled and trained employees.

For the UK to assure its place as a world-leader in these sectors, government and industry need to place the Mathematical Sciences at the forefront of their investment to ensure that the required workforce is sufficiently trained and knowledgeable to support economic development and growth.

The Mathematical Sciences are essential for almost the whole of modern science, engineering, social science, industry, commerce and education. In particular it has significant impact on a number of exciting and diverse 'growth sectors' in the UK economy such as the low carbon economy, the data revolution and advanced manufacturing.

> *"A large slice of Google's present net worth is based on a clever piece of higher mathematics that drives its search function, namely the estimation of the leading eigenvalue of a huge matrix representation of all links in the world wide web. Appreciating this kind of mathematical terminology and reasoning is becoming vital for many current and future careers."*
>
> Professor Alan Champneys, *In defence of maths, theconversation.com*

Some of the most profitable, productive and important sectors of the UK economy such as IT, finance, aerospace, telecoms, pharmaceuticals and defence are dominated by mathematical thinking. At this time of economic and political uncertainty it is essential for the UK to be a leading force in the world economy.

> *"Maths, statistics and computational biology skills are lacking particularly at the postgraduate and postdoctoral levels, with many respondents reporting difficulties in recruiting adequately skilled researchers at these levels; shortages are not just restricted to the UK."*
>
> BBSRC and MRC, *Vulnerable Skills and Capabilities*

> *"Data-active companies are recruiting more analysts, and combining more disciplines to build a data science capability. This isn't proving easy: For example, two thirds of Datavores struggled to fill at least one vacancy."*
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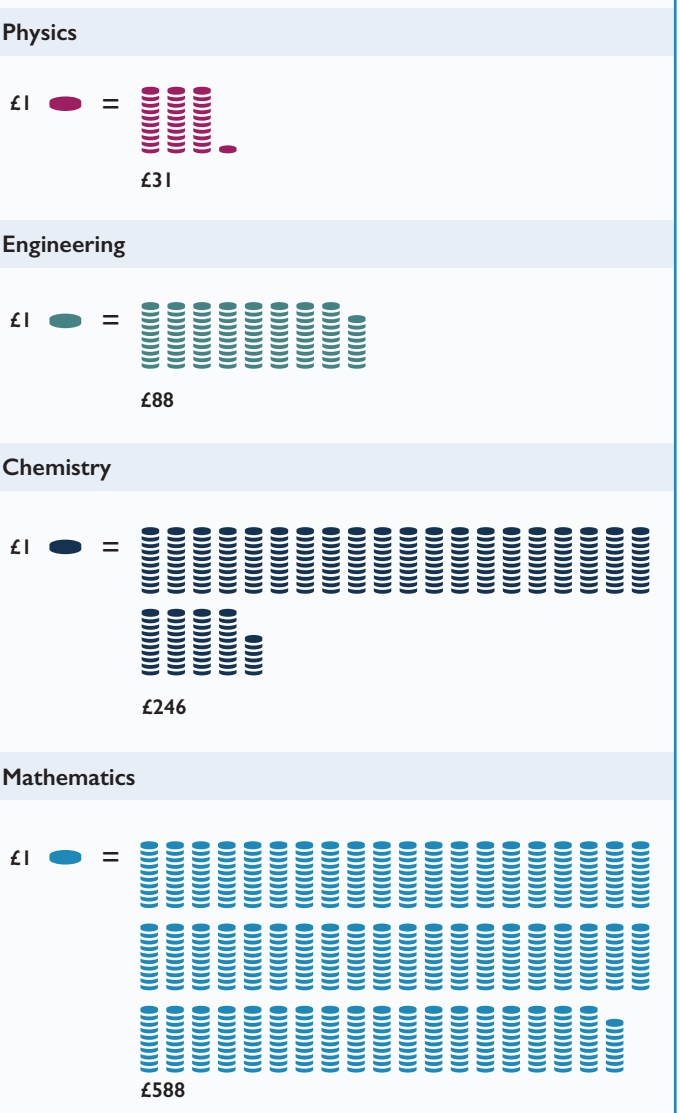
> Nesta, *Skills of the Datavores*

Return on investment in the Mathematical Sciences compared with other science disciplines

The current level of investment in the Mathematical Sciences provides an exponential return for every £1 invested compared to other science disciplines.



The above table illustrates the comparative return on investment in the various disciplines. Given the current critical importance and dependence on the Mathematical Sciences across all sectors the message is clear that substantially more investment is needed in this rapidly expanding area.