

There must be a structure in place to enable **QUANTITATIVE SKILLS** to flourish at **ALL LEVELS**

The case to raise the UK's game is urgent. There are many benefits to building quantitative skills in our population:

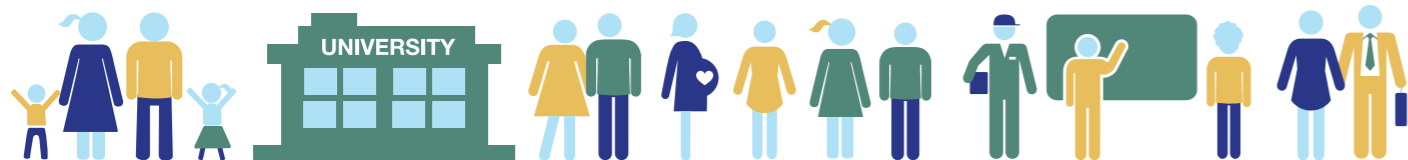
- Helping **citizens** to participate more fully in the democratic process
- Enhancing **research and innovation** in universities and in the workplace
- Supporting the **economy**, taking advantage of the 'big data' revolution and enhancing workforce capabilities more generally.

Our ability to handle data and reason using numbers will not be transformed overnight. But we need to put in place the structures that will begin to effect that change.

Governments across the UK should set out a long-term strategy for a transformation in the quantitative skills of the population.

The strategy should include:

- Improving the quality of quantitative skills teaching in schools and colleges across all disciplines.
- Building quantitative expertise in undergraduate students and in the research community.
- Encouraging employers to use the apprenticeship route and other training to improve the quantitative skills of their employees.
- Government, industry and academia working together to promote, oversee and monitor the improvement of quantitative skills across the workforce, universities and schools.



Across the economies of the European Union, the advent of

**BIG AND OPEN DATA**

has been predicted to contribute an extra **£147BN** per annum to GDP



The direct value of public sector data alone to the UK economy has been assessed at **£1.8BN** per annum

#### Schools and colleges



Our schools and colleges need to be giving children and young adults a strong, confident grasp of data from an early age. The UK's performance in mathematics generally makes it only middle-ranking among developed nations. The UK desperately needs to move to a situation where it is normal for science, social science and humanities students to have developed quantitative skills in schools.

#### Universities

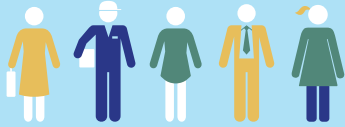


Our universities are suffering from a poverty of aspiration in relation to their students' quantitative skills. In order to raise our game, universities need to signal with more clarity the level of quantitative skills required for each course. They should review and redesign the content of existing courses.

**“Whichever way we look at it – the sheer potential for our economy and society on the one hand, and the nascent risks of not acting on the other – this is an agenda that demands the interests of decision makers at the highest level”**

Professor Sir Ian Diamond, Lead Fellow and Chair of High Level Strategy Group, British Academy Quantitative Skills Programme

## The workplace



Our evidence shows that there is a rising demand for quantitative skills in the UK economy: the proportion of employees saying advanced mathematics or statistics are important in their jobs rose from 29 per cent in 1997 to 38 per cent in 2012.

Seven in 10 employees say that some form of quantitative skills are essential or important in their jobs. Other studies suggest major eco-

nommic rewards for companies which take advantage of the data revolution. These skills are required at all levels of the workforce, from basic numeracy to complex data analysis.

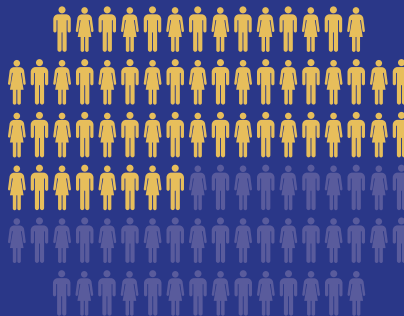
### **Seven in 10 employees say that some form of quantitative skills are essential or important in their jobs**

A government survey conducted in 2011, which found that three quarters of 16- to 65-year-olds in employment in England had a level of numeracy which might not be sufficient “to compare products and services for the best buy or to work out a household budget”, illustrates the urgency of this challenge.

**It has been estimated that as many as**

**58%**


**of people in “higher managerial and professional occupations” do not have numeracy skills at GCSE A\*-C and above**



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