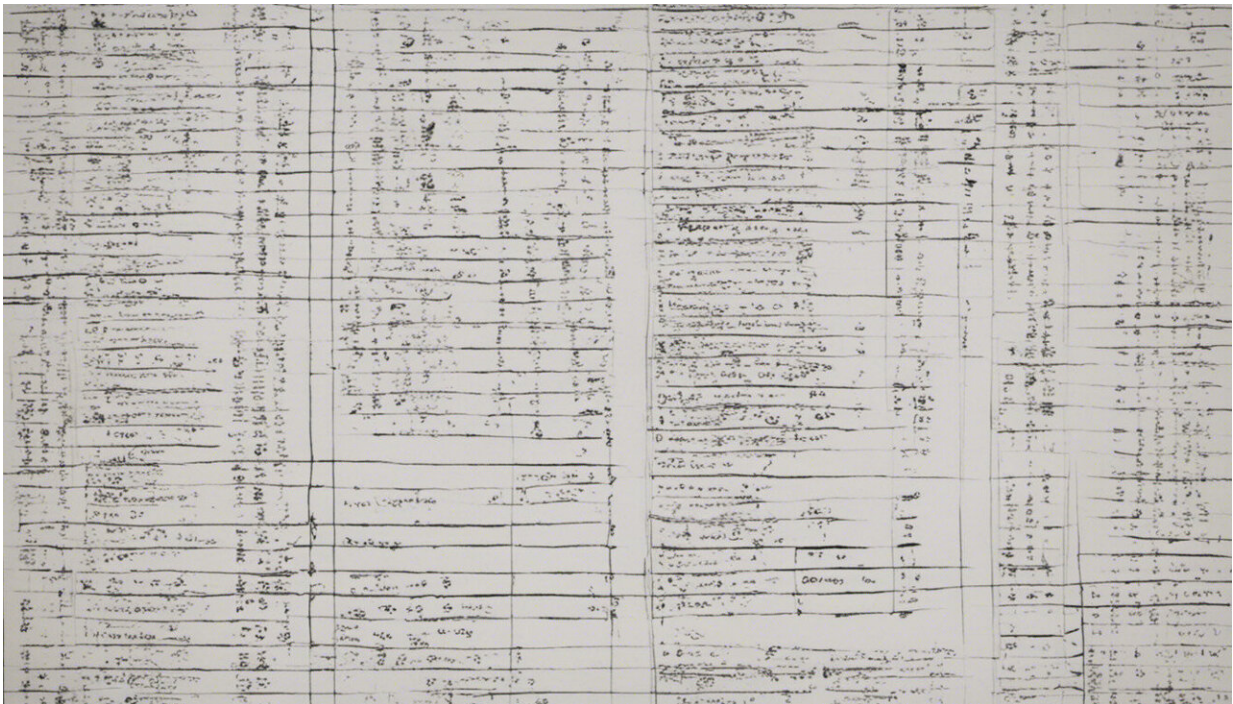


# More math testing could be good for primary schoolchildren, if done in the right way

May 17 2022, by Kinga Morsanyi

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Credit: AI-generated image ([disclaimer](#))

Recently published [U.K. government plans](#) proposed that by 2030, 90% of children leaving primary school in England should reach the expected standards in reading, writing and math, compared with 65% in 2019.

As part of efforts to achieve this, the government is introducing more

testing. In June 2022, year four pupils (aged eight to nine) must take a [multiplication tables check](#). This means that, for mathematics, [children](#) will be tested four times during primary school.

The multiplication tables check joins a [baseline assessment](#) in numeracy as well as literacy, communication and language, introduced in 2021 for children aged four joining reception class. Children also take standardized Sats tests in year two (aged six to seven) and year six (aged 10 to 11).

Although test results can be informative, more testing will not necessarily help children who struggle. In fact, test situations induce anxiety, and preparing for high-stakes tests can turn classrooms into [test-preparation factories](#). By the end of primary school, many children have sat through countless [math](#) classes feeling anxious and having no clue what is going on. This is the problem that really needs to be addressed.

## **Struggles with math**

Research suggests that, in general, there are two main culprits when it comes to failure in math. One is developmental [dyscalculia](#)—a specific learning disorder, which affects about [one in 20 children](#). The other is [math anxiety](#), which is an even more common problem. According to a [large-scale international study](#), about one in three adolescents get very nervous when they have to do math.

[Dyscalculia](#) is a developmental disability that involves persistent, severe difficulties with learning and doing mathematics, which are present from a young age. These difficulties [significantly interfere](#) with academic or occupational performance, and even with daily activities. For example, a person with dyscalculia may struggle to read a clock, have problems estimating the time needed for different activities, or find measuring ingredients for cooking difficult.

3 March is [#DyscalculiaAwarenessDay](#).

What is dyscalculia you may ask?

Fundamentally, people with Dyscalculia find it very difficult to form relationships between numbers and their values and therefore have little "number sense". Read more:

<https://t.co/DcFEfZqAe8> [pic.twitter.com/hOxj6J2Nar](https://pic.twitter.com/hOxj6J2Nar)

— British Dyslexia Association (@BDAdyslexia) [March 3, 2022](#)

On the other hand, [math anxiety](#) is a feeling of tension and fear that many people experience when they are faced with math problems or when they have to deal with numbers in their everyday life.

It can lead to behavioral problems in class in the case of pupils, as well as to a variety of unpleasant physiological symptoms, such as a [racing heart or butterflies in the stomach](#). [A study](#) even found that doing arithmetic while being evaluated by an observer led to changes in people's posture. They adopted positions which resembled reactions to the fear of falling when standing on an elevated surface.

Although the same person may be affected by both math anxiety and dyscalculia, this is not necessarily the case. [Research](#) suggests that about 80% of children with high math anxiety show average or above average math performance.

The effects of dyscalculia and math anxiety are present from the first school grades, which means that they could be identified and helped from very early on. However, while the reception year baseline check offers an early measurement point where children with difficulties could be identified, this is not how the results of this test are used.

First of all, these results are not shared with schools. Instead, they are recorded in the national pupil database and used to create a cohort-level

progress measure for schools at the end of [key stage two](#). There are also no standards to which children's scores are compared. In fact, individual children are not presented with the same questions, so their scores are not directly comparable.

## Early intervention

Any effective educational policy that aims to improve math achievement needs to tackle both dyscalculia and math anxiety, and these interventions should start very early. Early testing, if it was used to identify children who need help, could be very beneficial.

Early identification of math anxiety could be easily done with [self-report questionnaires](#), which ask children to report on how they feel in different situations related to math learning. These questionnaires can detect math anxiety in children as young as [six years of age](#).

Our [research group](#) is also currently developing a dyscalculia screening tool for primary school-age children. If pupils with these problems are identified early, there is a much higher chance of positive outcomes.

MP Matt Hancock has recently proposed the introduction of [universal dyslexia screening](#) for [primary school](#) pupils. If the aim of the government is to improve both literacy and numeracy standards, a similar approach should be taken in relation to dyscalculia as well.

For now, a child with dyslexia is [about a hundred times more likely](#) to be diagnosed and to receive [educational support](#) than a child with dyscalculia. Currently, support for dyscalculic pupils mostly comes from charities and organizations without significant government funding, such as the [Dyscalculia Network](#).

While dyscalculia can lead to permanently very low performance in

affected pupils, mathematics anxiety may be most debilitating for students with [average or high mathematics potential](#). These students underperform in [important test situations](#) and lack the confidence to make the most of their skills. Of course, math [anxiety](#) may affect children of all abilities.

Although the tools to tackle the sources of failure in math do exist, there is a long way to go before these will become available for every child in every classroom. Testing done right could be a first step to prevent the development of math difficulties, without increasing levels of stress among younger children. In time, it could also raise national standards in math to somewhere near the government's new target.

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