

Finding joy in numbers

By Vidya Iyengar, Bangalore Mirror Bureau | Sep 1, 2015, 10.27 PM IST



A campaign is deconstructing and making math fun for three lakh children across the state

Brightly coloured counters, beads, dice, clocks, plastic currency, a miniature weighing scale, videos - all of these are giving math learning a new dimension. These are some of the methods that Bengaluru-based Akshara Foundation is working with to simplify math learning in the state. The Ganitha Kalika Andolana (GKA), an initiative by the Foundation, is a programme to improve numeracy skills and facilitate classroom teaching of math among students in government primary schools. Currently they are working with schools from Karnataka and Hyderabad, in the first phase.

What got them started was the All India Annual Status of Education Report which reveals that figures for basic arithmetic have remained virtually unchanged over the last few years. In 2012, only 26.3 per cent of Std III children could do a two digit subtraction. The number fell to 25.3 per cent in 2014. In

the case of class 5 children, the ability to do division has increased marginally from 24.8 per cent in 2012 to 26.1 per cent in 2014.

There are other worrying trends. For example, the percentage of children in Std II who still cannot recognise numbers up to 9 has increased over time, from 11.3 per cent in 2009 to 19.5 per cent in 2014. In Karnataka alone, only 20.1 per cent of grade 5 students in government schools can do simple division.

Seeing the dismal report, Ashok Kamath, who chairs the Akshara Foundation, took on the project of getting students up until class 5 to a level equal to the students in urban schools. The reason skills are lacking, he feels, is because maths is taught only through the chalk and talk method. "Children in class five are not able to do what is expected in class two. Many of them drop out, because they can't cope with the syllabus," he says.

"Students can't even fathom what a dot below and a dot above a little horizontal line meant, even though they would intelligently divide up their entire class to make up two competing cricket teams," he adds. The fear can be largely attributed to the way Math is taught - in a "poor robotic way", the practice over the years. "Traditionally, math has not been associated with fun. We feel math learning should involve an activity-based learning model."

The kit, which is prepared by the foundation and provided to the school, contains a cube which can be put on a weighing scale to understand the concept of base-10 numbering, a clock to help the children to learn the difference between hours and minutes and math concept cards to relate math vocabulary with concepts and enhance reading ability. It is designed to engage 30 children. For instance, children are given play money to teach addition and subtraction.

"If you ask a child to buy sweets for Diwali, and the bill is Rs 63, chances are that he will get the right change back for Rs 100. However, if you just ask him to subtract those numbers, it is unlikely that he will get the right answer," Kamath says.

So far, they have worked with over 7,000 schools in Bellary, Bidar, Gulbarga, Koppal, Raichur and Yadgir. The math movement is backed by teaching and learning material (TLM), math videos, pop-culture posters and teacher manuals in Kannada, Urdu and English. Towards the project, Akshara Foundation works closely with the state education department across the six districts, which funds the project. (Each kit costs Rs 4,500). They provide training to 1,400 resource persons from the government school system, assessment and monitoring and provision of teaching and learning material.

Class 4 and 5 math teacher Shyam Shankar of GLPS School at Hoskote recounts how explaining concepts such as fractions was a mammoth task. "We'd explain it on the board, but they just wouldn't get it," Shankar says. Now they use the Fraction shapes, (a set of circles and squares and their fractional parts) to introduce parts of a whole and basic fraction and Fraction strips (which represent 1, 1/2, 1/3, 1/4 and so on) to understand fraction relationships. "Previously, when it was math hour, the students would get bored. Now we notice that they want the class to be longer," he says.

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