

# The National Day of Mathematics

## *Planning meaningful celebrations in schools*

**Padmapriya Shirali**

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In my school days we used to participate occasionally in science and mathematics exhibitions. While there was a fun element to the whole experience, we did not experience the richness of a well-organised exhibition. Since we were assigned stalls to man, we often spent the whole day there and did not make use of the opportunity to view other stalls, engage with others and reflect on the exhibits. My experiences as a student and later as a teacher made me realise that designing a well-structured mathematics exhibition or celebrating a mathematics day calls for careful planning.

During my teaching career at Rishi Valley, I got introduced to the idea of a Mathematics Exposition (Math Expo) under the guidance of Mr. P.K.Srinivasan. I continued this practice for many years, working along with other members of the mathematics faculty.

My mentor's vision of a Math Expo involved a 'walk through the curriculum'. The topics selected were based on concepts of school mathematics and presentations were made by using materials, cards, posters, math games, puzzles, etc. The expo had a dual purpose. For every student, as they visited each stall, the presentation either served as a review of concepts learnt in lower grades or as a window into the concepts that they would come across in the higher grades. As the concepts were revisited in the form of games or with physical aids, they held the interest of the visitors. Of course, it stimulated interest in the subject in general and gave the students an opportunity to talk about mathematics, subtly boosting their confidence and interest in the subject.

In India, National Mathematics Day is celebrated on December 22, to commemorate the birth anniversary of the renowned mathematician Srinivasa Ramanujan. The International Day of Mathematics is celebrated on March 14<sup>th</sup>, because it represents the first three digits of Pi (3.14) when written in MM/DD format.

Many schools celebrate a mathematics day and have multiple engaging activities and stimulating presentations that are normally not taken up during teaching sessions due to constraints of time.

I will briefly dwell on the organisational aspects of such a day. The pullout of this (November 2025) issue carries some ideas for activities for such a day. It is always good to have various strands represented in the activities - Arithmetic, Geometry, Statistics, Logic, etc. It is also necessary to remember that a good proportion of activities need to be accessible to a layman so that parents and visitors are motivated to take part in it. We work on the principle, 'Math for All!'

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*Keywords: Mathematics exposition, festival, logistics, arrangements, preparation*

As the visitors to the stalls will be from diverse backgrounds, the presentation should be adaptable to the varied levels to the extent possible. The activities should also lend themselves to a limited time interval (5 to 10 minutes) per stall to accommodate all the visitors.

## Organisation of the student groups

A group of 4 students can explore the theme to be presented at the stall. Groups can be formed class-wise so that every student from the school is part of some group. Two students from each group would, at a time, get involved in demonstrating the topic they had chosen. During that time, the other two get the opportunity to walk around the other stalls till it is time for them to man their stall. This will give everyone a chance to observe all the stalls.

What is the preparation required by the students for such an event?

Students need to work on the problem they are going to present and arrive at one or multiple solutions. They should anticipate how the audience might respond and be prepared to address a variety of responses. They should be able to explain the solution if needed. This will

need some practice beforehand. Possible criteria for the selection of problems, which can be done by the teacher or by the students themselves, are: can be solved in 5-10 minutes, can have multi-levels so that it can be attempted by an audience with a spectrum of ability and knowledge of mathematics, can be an extension of what is done in class, and so on.

## Layout of the stalls

It is good to use a large area such as the school playground (outdoor venue) or the assembly hall (indoor venue). A group of 4 or 5 stalls can be clustered together, separated from another cluster by some distance. This will help in containing the noise generated by the chatter and excitement. Within each group of stalls, I prefer to have separate stalls for number-based, geometry, estimation and mathematics through visuals/patterns activities. Clubbing all stalls related to a particular strand together, can tend to be repetitive and may lead to overcrowding in some areas.

A few games can be interspersed between the different clusters to serve as buffer spaces if a group of visitors needs to wait for some time before they are able to move on to the next area.

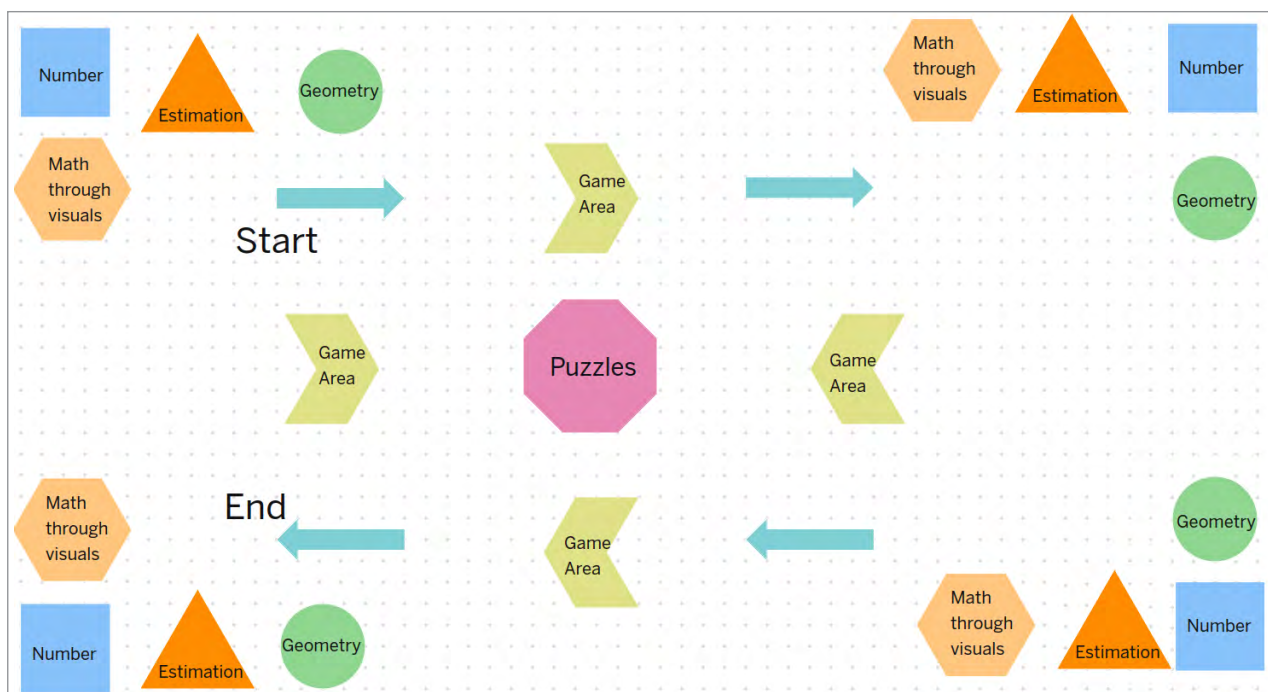


Figure 1: A suggested configuration for the stalls at a Math Expo.

The organisational aspects of such an event in itself involves mathematical planning – estimating the number of visitors, qualitative time required to engage with all the stalls and the sequence of movements. It will be a nice exercise for the senior students to come up with a good route plan for groups of individuals to move from one area to another so that overcrowding does not occur in some areas. Safety precautions such as a quick evacuation plan in case of an emergency should also be factored in by them.

### Organisation of the day's schedule

Schools start the day with an assembly time when all the students and staff come together to share music, news and other information. The assembly at the celebration of a Mathematics day can focus on interesting facts about that date, or the work of a particular mathematician. Students present the dramatisation of short skits based on interesting anecdotes from the life of a mathematician, or on math themed stories at the assembly. Researching and writing such scripts

and stories will develop key inter-disciplinary skills. Students can also talk about recent discoveries or unsolved problems in mathematics. They can share fast calculation tricks that they have learnt or talk about how they feel about the subject, what interests them and why they would like to pursue their study of it. Video clips that show symmetry, animation of 3D shapes, patterns, illusions, etc., can be shown.

Students who don the role of presenter or facilitator at a mathematics event often carry the glow of being in charge into the classroom. It is hoped that they will realise that they are active participants in the process of learning mathematics.

**Note from the Editor:** These suggestions give an outline plan for a meaningful and orderly celebration of a Mathematics Day which has the potential to draw in even the most reluctant student of the subject. Details of possible activities, filler space games and cultural events are given in the Pullout.



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### Proposed solution for the Art in Numerals puzzle in At Right Angles July 2025 (page 8)

Solutions to the Art in Numerals Puzzle published on page 8 of At Right Angles, July 2025 provided by **Karthikeyan SS**, working as Resource Person at Azim Premji Foundation Puducherry District Institute.

**Q1: Can you find a pattern connecting these numbers?**

$3 \times 2$	$3 \times 3$	$3 \times 4$
$3 \times 9$	$3 \times 10$	$3 \times 11$
$3 \times 16$	$3 \times 17$	$3 \times 18$
$3 \times 23$	$3 \times 24$	$3 \times 25$

**General Observation:**

Basically, this is the multiplication table of 3 arranged in a grid

**Q2: Can you find such a pattern in a different set of numbers?**

$2n$	$3n$	$4n$
$9n$	$10n$	$11n$
$16n$	$17n$	$18n$
$23n$	$24n$	$25n$

where  $n$  is a natural number.

**Example:**

$$\frac{(3n + 9n + 11n + 17n)}{4} = 10n$$

Both the diamond pattern and the rectangle pattern work in this grid.