

**SOME EXPERIENCES
FROM SAHYADRI
SCHOOL KFI**

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**ITEMS WHICH ARE
ROUTINELY PART OF THE
CURRICULUM**

**Maths Club – number theory,
congruences, using patterns to
provoke thinking and exploration,
playing with squares and triangular
numbers, with Fibonacci numbers,
episodes from math history**



Problem Corner – fortnightly problem set, challenges

Bulletin Boards – problems, portraits, jokes, cartoons with a mathematical flavour, fallacies, paradoxes

**Assembly talks, Expository lectures –
binary numbers, codes based on binary
numbers (Morse, jpeg, braille), Fibonacci
numbers (Hemachandra numbers), frieze
patterns, cycles, pi day, Nash's work,
Ramanujan day, celebrating significant
days or years (Turing, Boole), Origami
and Mathematics**

Tinker Shed: “Design, Tinker, Make, Innovate, Reflect” – a five-point program for students to work collaboratively to problem-solve and create solutions for challenges (2D and 3D design; balancing toys; mobiles; stables; rubber band racers; rockets; marble run; geodesic dome; harmonograph; ...)



Design Thinking is a structured approach for generating, developing, and implementing ideas. It has been introduced to all levels – from classes 4 to 12.

A 'Tinker Shed' equipped with work tables, simple tools and low-cost materials is used to run the program.

Through five phases – definition, ideation, prototyping, testing and iteration – students use a hands-on approach that involves creativity, thinking, analytical skill and teamwork to address challenges.

The beauty of design thinking is that it is not only relevant and empowering, but is also applicable in any setting, in fields ranging from engineering to visual art.

Origami room – understanding the geometry of paper folding; understanding colour symmetry; visualisation challenges; folding regular and semiregular solids; using paper folding to prove some elementary theorems of triangle and circle geometry



**Math Lab – rangometry (Jodo Gyan kit),
making straw models of Platonic solids,
getting students to design and make their
own tessellations, GeoGebra**

**Investigations as a regular part of the
maths curriculum – counting, divisibility
tests, number patterns, guessing algebraic
identities**

**Class 4 EVS – Record weather for a month.
Learn how to read instruments and
interpret data.**

**Water audit: How much water does an
individual use? How much water gets
wasted due to leakage? Study different
water bodies on campus to observe life
forms and changes during monsoon. Visit
different links of water supply system to
understand how the water reaches us.**

**SPECIAL OCCASIONS OR
EVENTS**

Bhasha Fest – Cryptography

Math Fest – Sierpinski triangle, Platonic solids, frieze patterns, studies of symmetry, number puzzles, computational tricks, measurements of people, estimation of things, Escher and his art, iterations.



A Math Fest is a festive, school-wide event involving children from all classes, pre-school to class XII. They are all engaged in hands-on interactive problem solving, of some kind or the other. The idea is to provide mathematical challenges to children and present an exposition of mathematical concepts in a visual form to make them accessible to a diverse audience.



There are numerous activity stations, each focusing on a key math concept presented in the form of a problem, pattern, exploration, game or puzzle.



During the preparatory build-up, children work collaboratively to make presentations to visitors.

Solving these problems requires basic mathematical skills as well as higher order thinking skills.



The activities are hands-on and interactive.

Many of the tasks can be attempted at different levels, thus meeting the needs of younger students as well as holding out a challenge for the older ones.

The background features a white triangular area in the top-left corner, a large red triangular area in the bottom-right, and two overlapping orange triangular areas in the bottom-left. The text 'FILMS AND PLAYS' is centered within the white triangle, rotated 45 degrees counter-clockwise.

FILMS AND PLAYS

Films – *Flatland, Romance of a Dot and a Line, The Imitation Game, A Beautiful Mind, Eddington and Einstein*

Plays – *The Phantom Tollbooth*

CHALLENGES

Problems caused by high-stakes testing and summative assessment; the ‘tyranny of testing’.

There is a huge scope and need for research and development in this area, and it needs to be done in a centralized manner.

Widespread lack of resolve at national level to do much about teacher education.

**Consider what Manjul Bhargava said,
*Math teaching in India is robotic.***

What has been our response to this statement?

There is a crying need for development of meaningful B Ed programs and good teacher education colleges which can deliver these programs, in which teachers learn the art of asking questions, the art of guided inquiry, and the art of creating a learning space and not talking too much in the classroom.

Despite the resolve made in 2012 for the popularisation of mathematics, very little has been done in that area.

Very few people in the country make any attempt to talk or write about mathematics for students or the public.

**SOME IMAGES FROM
AROUND THE SCHOOL**







