



# Thousand Flowers Pre-Olympiad

Cheenta

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## The Philosophy

Mathematics and science olympiads require dense problem solving skills and analytical ability. How do we guide a child into this adventure of mind? How do we share our joy and thrill for the subject?

One way is to create a problem driven curriculum that draws from multiple walks of mathematical science. This, on one hand, provides a holistic exposure to the craft of problem solving. On the other hand, it encourages a multidimensional approach any subject.

The pre-olympiad program is weaved out of such strands of ideas which we call themes. They cumulatively prepare the child for the road ahead to olympiads and research oriented mathematical science

## The Themes

The themes in Thousand Flower programs depend on the faculty conducting the program. Here are some examples:

- **Angle, Motion, and Points**
  - Introduction to motions in plane (isometries);
  - Applying the motions to solve geometry problems and mechanics problems;
  - Elementary tools for measuring rotation (angle),
  - Relating angles with arc lengths and chord lengths

- **Primes and Algorithm**
  - Understanding primes and composites
  - Adventures of Fermat and Euler
  - Counting primes using sieve of erathostenes
  - Building an algorithm to count primes (elementary python)
- **Surfaces and flows**
  - Cutting the paper into mobius strip
  - Triangulating a torus
  - Mobius Strips with twists
  - Fundamental polygons and Euler Numbers
- **Algebraic identities, Area and Irrationals**
  - Drawing algebraic identities
  - Introduction to the notion of area
  - Archimedes method of approximation
  - The rationals are not enough!