Cheenta
Math Olympiad Program

Level 2

cheenta.com

since 2010

Passion for Mathematics

This program is useful for Math Kangaroo, Australian Math Competition, MOEMS

Success Stories since 2010

Aryan Kalia

Top 1% globally in American Math Competition,

Attended Math Olympiad Program and School Research Program at cheenta

Attended Student internship program at cheenta

Going to Harvard University in 2022

Sambuddha Majumdar

Scotland Math Olympiad Awardee

Attended Math Olympiad Program at cheenta

Attended Student internship program at cheenta

University of Edinburgh

Anushka Aggarwal

Youngest Indian National Math Olympiad awardee, Europian Girls Math Olympiad awardee

Attended Math Olympiad Program at cheenta

Attended Student internship program at cheenta

Going to MIT (Massachusetts Institute of Technology) in 2022

Akshaj Kadaveru

American Math Competition, AIME and USAJMO awardee

Attended Math Olympiad Program at cheenta

MIT (Massachusetts Institute of Technology)

Curriculum
driven by problem solving

48 weeks program, 8 modules

Spatial Patterns I-θ
6 weeks

- Paper folding geometry - Cubes
- Computational Geometry - Geogebra
- Paper folding geometry - Tetrahedron
- Points, lines, and geometric objects in GeoGebra
- Coloring faces in platonic solids, edges, vertices
- Duality in platonic solids

Spatial Patterns I-δ
6 weeks

- Rotation in GeoGebra
- Rotation to move polygons
- Missing shapes in a pattern list
- Reflection in GeoGebra,
- Reflection to move polygons
- Building shapes using blocks on Pegboards

Numerical Pattern I - θ
6 weeks

- Number sequences
- Triangles joining midpoints of sides, dot triangle computation
- Missing numbers in magic squares
- Tower of Hanoi - gamified as a math circle
- Kendoku - long term activity
- Masyu - long term activity

Numerical Pattern I - δ
6 weeks

- Fold papers to mark 1/2, marking fractions in Geogebra
- Unitary reasoning
- Addition and multiplication principle of counting
- Choosing 1, 2, 3 objects from 3 distinct objects. Tree Diagrams
- Paths on a grid
- Seeds of bijection principle

Curriculum **continues**

Mathematical Imagination I - θ

6 weeks

- Locus of a moving point, string and pencil construction of circle
- Locus of a circle implementation in GeoGebra, concept of rotation
- Surface of revolution with intuition from GeoGebra illustration (not implementation)
- Stop motion diagram to find locus, midpoint of sliding ladder
- Gluing opposite sides of a square to make cylinder, construct torus by gluing other two ends
- Triangulating a sphere and a torus, counting the number of distinct triangles needed

Mathematical Imagination I - δ

6 weeks

- Projection diagrams of cube
- Projection diagrams of Tetrahedron
- Shortest paths on platonic solids - Week 1
- Shortest paths on platonic solids - Week 2
- Introductory astronomy for long term project
- Introductory algorithms via Scratch

Arithmetry I - θ

6 weeks

- Cryptarithmetic; Caesar Cipher
- Addition and Subtraction using geometry
- Multiplication using tree diagram,
- Division in tree diagram, division as an inverse of multiplication
- Fractions as a part of whole,
- Fractions as ratio of two parts,

Arithmetry I - δ

6 weeks

- Cryptarithmetic; Polybius square
- Relation between fraction and ratio
- Two ways of understanding fractions: division and comparison
- Coloring 2/3, 2/4, 3/4, geometric adding of fractions
- Concept of odd, even numbers
- Problems on parity

Taught by Olympians **and Researchers from leading universities**

Since 2010 Cheenta has evolved into a Gurukul. Our students have attended leading universities in India such as Indian Statistical Institute, Chennai Mathematical Institute, TIFR, IITs and universities abroad such as Harvard, MIT, Oxford, Edinburgh to name a few. Some of them returned as teachers for the next generation of learners. And the pursuit of excellence continues.

Cheenta Team has 40+ members. Here are some of the leaders.

Srijit Mukherjee
BStat and MStat from Indian Statistical Institute (India)
Director at Cheenta

Dr. Ashani Dasgupta
PhD from University of Wisconsin-Milwaukee (USA)
Founder - Director at Cheenta

Dr. Sankhadip Chakraborty
PhD from IMPA, BSc. Math from Chennai Mathematical Institute (India),
Director at Cheenta

Dr. Anirban Majumdar
PhD from ENS Paris-Saclay, France on Theoretical Computer Science, B.Sc.-M.Sc. from Chennai Mathematical Institute

Swarnabja Bhowmick
B.Tech from Calcutta University on Computer Science with multiple IEEE publications on Artificial Intelligence and Machine Learning

Namrata Dutta
BSc. in Physics and MSc in Electronics from University of Calcutta.

Contest Calendar
for beautiful problem solving

Cheenta students think of Math Olympiads as **milestones**. The end goal of the program is to fall in love with mathematics and develop great problem solving skills. Milestones help us to stay in track.

Not all math contests are equal. Here is a list of contests that are suitable and most effective at this level of learning.

Our success centre will keep you updated about registration deadlines of these contests and other opportunities

Math Kangaroo

Australian Math Competition

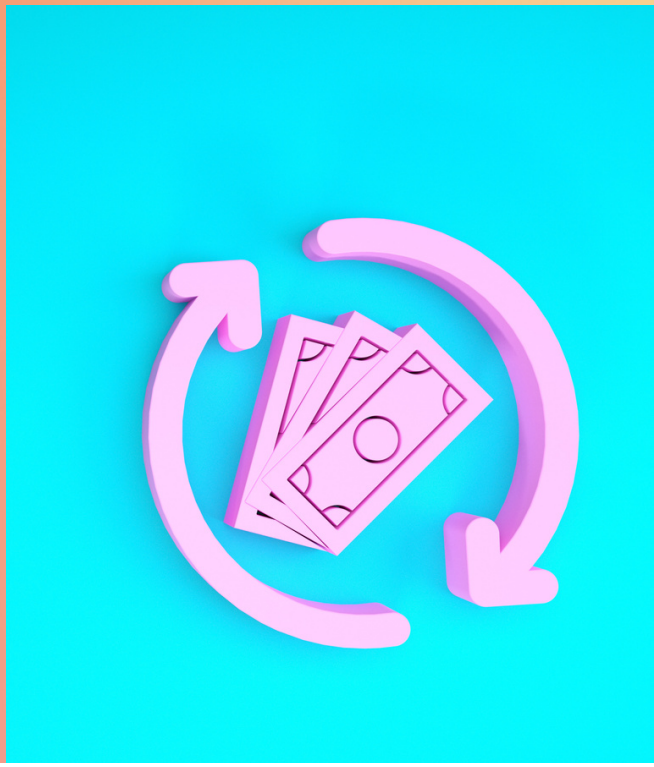
MOEMS

Refund policy

since trust is the cornerstoner of education

Within 1 week of admission, if you wish to withdraw from the course due to dissatisfaction with our offerings, we will start your **[full refund - service fee of ₹1000 (India) or US$20 (Rest of the World) - Transaction fee if any]** process provided **all four of these activities** are done on your part:

a. Attended live full length lecture session for full time (not video recording)
b. Attempted the assignments during that period
c. Attended at least one 1-on-1 session
d. Used the Cheenta Support forum for doubts
e. The Refund reason should be associated with the coursework, any personal reason won't be counted & hence the refund request will be nullified.



The refund process is usually completed within 8 weeks of the refund request. We will refund the [full refund - service fee of ₹1000 (India) or US$20 (Rest of the World) - Transaction fee if any], if you begin the refund process within 1 week (see the first point).

If a refund request is not placed within the first week, or if such a request is placed without completing steps a, b, c d, or e or if the refund request is made due to personal reasons, then we won't be able to process any refund.

Thank You

Passion for Mathematical Science

Let us know if you need more information.

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