



[www.venturecenter.co.in](http://www.venturecenter.co.in)

<http://tinkeringlab.co.in/>

Tinkering lab: Tinkering Lab Technical Workshops Series – 2017

## Summer Activity Club

# Math Gaming Club (Wave 2)

- Organized by Venture Center

<b>Learn</b>	<ul style="list-style-type: none"><li>• Improve logical, analytical and strategic thinking in children through games</li><li>• Learning while having fun playing games that use mathematical principles and strategies</li><li>• Bring together a peer group of young people with interest in math-based games</li></ul>
<b>Organized by</b>	Tinkering lab, Venture Center
<b>For whom</b>	Age group 10-18 yrs old (Familiarity with English required)
<b>When</b>	<b>10 May 2017 -23 May 2017   Time: 2.15 PM to 5.15 PM</b>
<b>Where</b>	Lecture Theatre, 900 NCL Innovation Park, Dr. Homi Bhabha (Pashan) Road, Pune-411008
<b>Course Director</b>	Mr. Vinayak Lele, Director and CTO at Prescient Technologies Pvt Ltd
<b>Contact</b>	Ms Sayali - 0202586-5875/77; 9172232214 <a href="mailto:sayali@web.venturecenter.co.in">sayali@web.venturecenter.co.in</a>
<b>Cost</b>	<p><b><i>Rs 5000/- for 12 sessions</i></b></p> <p>Maximum <b>20 seats</b>; First-come-first-serve.</p> <p><b>Application form available at-</b> <a href="http://bit.ly/2oGpZ3U">http://bit.ly/2oGpZ3U</a> <b>More info on:</b> <a href="http://tinkeringlab.co.in/events-2/">http://tinkeringlab.co.in/events-2/</a> <b>Last date for receipt of payments-</b> 5 May 2017</p> <p>Note:-</p> <ul style="list-style-type: none"><li>• Attendance only after confirmation of registration by organizers.</li><li>• Organizers reserve the right to accept or refuse or delay registrations so to optimize the composition of the group and hence maximize learning for all participants.</li><li>• Fees paid is not refundable and non transferable under any circumstances.</li></ul>



[www.venturecenter.co.in](http://www.venturecenter.co.in)



<http://tinkeringlab.co.in/>

## Introduction

Math is an abstraction of logical thinking. By putting structure to thinking and developing methods to deal with complexity, math enables the human mind to stretch its limits. But most children learn Math as a series of boring procedures without any context and fun. At the same time, most kids love games – physical or virtual. Can math gaming bring together both fun and learning.

This club intends to bring together children and encourage them to “learn” math and logical/analytical thinking through fun activities and games. A series of group interactions is planned where children can compete and collaborate around these activities/ games while also analyzing and thinking through the strategy behind the games.

## Course Outline

A typical session will have:

- Review of take-home game
- Grouping the participants (5 groups of 4 each)
- Introduction to a competitive/ collaborative activity or board game. Learning the rules.
- Participants will be allowed to play the game as per the rules.
- Analysis of the game with focus on basic elements of the game and strategies
- Listen to selected examples of how math was used to solve important and not-so-important real-world problems.
- Puzzles/games to play at home.

## Course includes

- Workshop includes refreshment break with snacks
- Membership in mailing list of all participants
- Board games used shall be provided by Venture Center and retained by Venture Center after the session.
- Tour of the Tinkering Lab and Venture Center’s labs
- Participation Certificate (for more than 80% attendance)

## Course does not provide

- No ranking or scoring shall be provided. Idea is to enjoy math via games and encourage analytical/ strategic thinking.
- Lunch is not planned under this workshop



[www.venturecenter.co.in](http://www.venturecenter.co.in)

<http://tinkeringlab.co.in/>

**\*Please note, the participants will have to arrange for their own travel/local transport and accommodation and dinners.**

- For accommodation (standard and budgeted hotels) please visit: [www.venturecenter.co.in/puneguide/standard.php](http://www.venturecenter.co.in/puneguide/standard.php)
- For accommodation (deluxe and luxury hotels) please visit: [www.venturecenter.co.in/puneguide/deluxe.php](http://www.venturecenter.co.in/puneguide/deluxe.php)
- For local transport details visit: [www.venturecenter.co.in/puneguide/taxi.php](http://www.venturecenter.co.in/puneguide/taxi.php)

### Dates for Club Sessions

Dates	Sessions
10 May 2017	Pigeon Hole Principle. Combinatorial methods Two player games. (Ex) Othello
11 May 2017	Dealing with invariance Puzzles. (Ex) Chessboard/cards based.
12 May 2017	Graph Theory Two player games. (Ex) Tic Tac Toe
13 May 2017	Nim. Probability. Game theory Tangram and geometry.
15 May 2017	Deterministic vs probabilistic methods. Two player games. (Ex) Battleship. Rules of elimination.
16 May 2017	Minimization / maximization, shortest distance finding
17 May 2017	Probability & Multi-player games. (Ex) Risk.
18 May 2017	Cryptography- the art of writing or solving codes.
19 May 2017	Map colouring / tiling
20 May 2017	Multi-player games. (Ex) Monopoly and calculated financial risk taking
22 May 2017	Rubik cubes. Topology Single player games. (Ex) Sudoku. Tree expansion
23 May 2017	All Two player games & Multi-player games.



[www.venturecenter.co.in](http://www.venturecenter.co.in)

<http://tinkeringlab.co.in/>

## Faculty



**Girish Arabale**

Girish is Founder, Molqbits Sensors & Data Pvt Ltd, Pune and incubated at Venture Center. He obtained his PhD [Carbon Nanostructures] from National Chemical Laboratory, Pune. His research Interests include Raman Spectroscopy, Nanoscale Carbon, Energy Storage Technologies, Open-Source Hardware, Data Visualizations, Biohacking.



**Vinayak Lele**

Vinayak is Director and CTO at Prescient Technologies Pvt Ltd. He obtained his masters degree in engineering from IISc Bangalore. His field of work is computational geometry. His interests include aviation, theatre.



**Anant Patki**

Prof. Anant Patki is a Scientist from ISRO and had worked on India's first Satellite Aryabhata and the Launch Vehicles like SLV and PSLV. He specializes in Aerospace Engineering. During his service he had interactions with NASA, ESA and GlavCosmos. He also worked as Visiting Professor at Dept of Aerospace Engg of IIT/Bombay and at Dept of Aerospace Engg of IISc, Bangalore. He has been conferred fellowships by many professional bodies and has won many awards during his tenure.

## About the organizers



The Tinkering Lab is a facility developed and managed by Venture Center, NCL Innovation Park, Pune, India. The main aim of the Tinkering Lab is to help inventors and entrepreneurs to build prototypes of their ideas and generally "tinker" around exploring new ideas. The focus is on electronics, instrumentation and optics besides related prototyping and design.

For more information about Tinkering Lab: <http://tinkeringlab.co.in/>



Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 60 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology's National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit <http://www.venturecenter.co.in/>