



# MATRIX



20  
23

Math is the language of the world, a consistent entity that can be relied on no matter what. Some days, it slips our mind that the arc of a winning goal, the shape of a perfect dance formation, and the magic of a secret code, are all Math at its best.

NPS Indiranagar has been hosting Mathtrix since 1990, every 3 years. From hosting just one quiz to organising 20 events , We have come a long way.

Mathtrix is an event traditionally involving just the 11th and 12th grades. This year we invite, not only the 11th and 12th but also the 9th and 10th grades to join us for this notable event.

So, clear your calendars and brace yourselves for Mathtrix 2023!

DATE - 28 July 2023 , Friday

REPORTING TIME - 8 a.m.

VENUE - National Public School Indiranagar

12 A Main, HAL 2nd Stage, Indiranagar, Bengaluru - 560038

<https://goo.gl/maps/fHEGAJbz3YDRQS7i6>

CONTACT DETAILS - [mathtrix@npsinr.com](mailto:mathtrix@npsinr.com)

Please contact the given email ID for any queries regarding the events.

MATHTRIX WEBSITE : <https://mathtrix.co.in/>

#### GENERAL INSTRUCTIONS -

- Each School is only permitted to send one team for each event.
- Participants must carry their school ID cards to the event.

# PROGRAMME

- Registration : 8:00 am to 8:45 am
- Inauguration : 8:45 am to 9:15 am
- Prelims : 9:30 am to 11:00 am
- Finals : 11:00 am to 1:30 pm
- Lunch : 1:30 pm to 2:00 pm
- Valediction : 2:30 pm to 3:00 pm



EVENTS FOR  
GRADES

II & I2

# Nemesis



People may lie but the evidence doesn't...8 Suspects 1  
Killer...Can you uncover the true Nemesis?"

## GRADES 11 & 12

### Number of Participants per team - 3

Step into a thrilling murder mystery event like no other! With two rounds of intense investigation, teams are immersed in a suspenseful challenge.

The mathematics in this event encompasses topics like trigonometry, calculus and other related branches rather than focusing on commerce applied math.

### ROUND 1 -

The teams are given general information about the murder and the victim. Each team begins with a redacted police report, unveiling secrets locked behind math questions to qualify to the next round.

### ROUND 2 -

Teams armed with their analytical skills must solve a series of math questions with each correct answer rewarding them with pieces of the crime scene report. With alibis in hand and the newly acquired crime scene report, teams must employ their deduction skills to piece together the puzzle and expose the identity of the killer.

Step into a world of intrigue and deception as you embark on a thrilling journey into the heart of a twisted mystery. "Nemesis" invites you to immerse yourself in a thrilling experience, where secrets are concealed, and every clue leads you closer to the truth.

**IMPORTANT** - Please note that the math questions will require a scientific aptitude to be solved.

### Event heads :

Rhea Parthiban

Janvi Jagan M

# Mercatus

Unleash Your Skills, Ignite Your Future! Rise Above  
the Rest at the Ultimate Talent Quest



## GRADES 11 & 12

### Number of participants per team - 3

Unleash Your IT Factor at MERCATUS LTD's Talent Hunt! Do you have what it takes to seize the opportunity? Engage in an exhilarating stock market challenge and race against time to ace your job interview. It's your chance to shine and prove to the world that you're the ultimate champion!

### ROUND 1 -

Stock market round- Participants will analyze stocks and race against time while competing with other teams

**IMPORTANT REQUIREMENT:** Pre requisite knowledge of calculation of profitability and debt financial ratios is extremely important.

### ROUND 2-

Interview round- Participants will give a mock job interview testing their business aptitude as well as math-based analytical skills.

**IMPORTANT NOTE - Event Capacity is 8 Teams.**

Each team must bring their own stationary.

No electronic gadgets will be permitted

### Event heads :

Gayathri Balasubrahmanyam

Meghana Kataria

# Apollo

"There is geometry in the humming of the strings,  
there is music in the spacing of the spheres."

- Pythagoras

## GRADES 11 & 12

Apollo is a spin off on the good old traditional Battle of the Bands by combining math and music elements. Will you and your band be able to rise to the challenge? Only one way to find out!



## ROUND 1

- 1) The event heads will provide all the registered bands with two time signatures two weeks before the event.
- 2) Each band has to play at least two songs of these time signatures interchangeably; a 3/4 song has to be played in 4/4 and vice versa.
- 3) Each band will also have to incorporate different challenges into their performance such as polyrhythms, etc.
- 4) Time limit - 3 to 5 minutes

## ROUND 2

- 1) Only the top three teams will make it to the final round
- 2) Participants will be given a certain amount of time to solve a series of mathematical riddles and questions
- 3) The band which solves all their questions correctly first will be allowed to choose one of the three genres - rock, indie and pop - and the band that finished solving their questions second will have to pick between two of the remaining genres.
- 4) Time limit - 5 minutes

## GENERAL INSTRUCTIONS

- 1) Drum-kit, keyboard, cables, amps, and mics will be provided for. However, bands will have to bring their own guitars.
- 2) Bands will be given set up time of 2 minutes for round 1, and a set up time of three minutes for round 2
- 3) The minimum number of members in a band is 4, and the maximum is 6.
- 4) Only the first fifteen teams to register will be allowed to participate

## Event heads :

Mallika Gupta  
Avi Gupta  
Disha Lahon

# Mask A Raid



Solve fast, move faster!

## GRADES 11 & 12

### Number of participants per team - 5

Combine wit and scientific skill to solve the puzzles that head your way! You and your team members must work together to solve a triangular math puzzle and a treasure hunt with one of your team members locked up, to qualify for the ultimate action-packed round which has given rise to the name of our event - "Mask-A-Raid!".

The first round consists of a triangular puzzle. Once the puzzle is completed, you unlock a clue from which a treasure hunt will ensue. Complete riddles to find the “mask” which is crucial for the final round. First four teams to obtain the mask qualify to the finals.

The teams that qualify will go against their opponents while simultaneously trying to solve problems before the other teams.

Solve fast, but move faster to win!

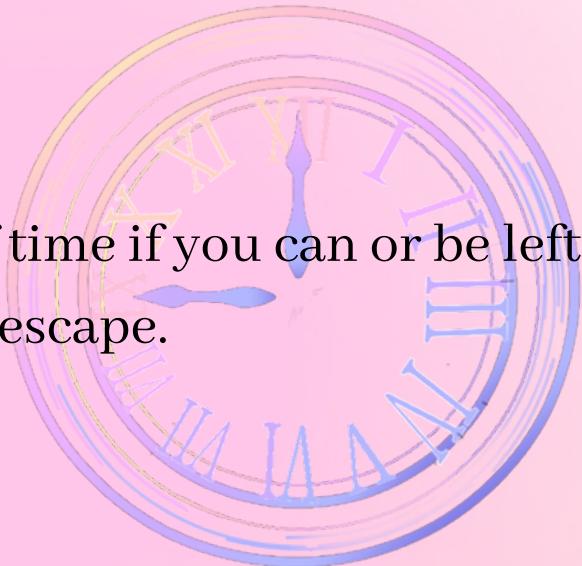
### Event heads :

Radhika Soni

Harita Venkatesan

# Saturn

Climb out of the vortex of time if you can or be left with no escape.



GRADES 11 & 12

Number of participants per team - 3

Put your critical thinking and arithmetic mettle to the test in the first ever math history event . A time themed escape room where a secret code must be discovered by solving puzzles from the history section. Once the code has been put together you can escape the room. All clues will be based on the thematic time period of each section and a certain time will be allotted to each team to race to the end. The members of the team can choose to tackle each section together or split up and take on each section individually. Winning team is determined by the team with the lowest time to escape.

Event heads :

Sidhant Malik

Riya Aggarwal

# Agon



It's zero hour and you're running  
against the clock, but will your mathematical genius meet your  
physical prowess?

## GRADES 11 & 12

Number of participants per team - 2

### PRELIMS-

Play against your competition in a fast paced puzzle round from which the first five advance to Round 1.

### ROUND 1 -

Participants take part in an exciting life sized board game in separate islands to advance to the next round. The teams race against time to complete math questions and some enticing challenges.

### ROUND 2 -

The final round is a battle among the best. The last three contestants sweat it out and show off their math skills. This round is filled with engaging games, mathematical triumphs and exciting twists. It's time to win it or lose it all and show off your decision making skills.

Important information : Each round is heavily time based.

### Event heads :

Tia Maria Manu

Sera Biju John

# Sum It Up

Join us for a thrilling clash of numerical knowledge, where students go head-to-head in a math showdown that would make even the boldest game show hosts jealous!



## GRADES 11 & 12

Number of participants per team - 4

### PHASE 1 -

1) Prelims round - top 4 school will be chosen out of the lot , teams will be marked based on their speed and their accuracy.

### PHASE 2 -

1)Round 1 (BBC) -

Simple round based on the game show 'Who Wants to be a Millionaire'

2)Round 2 (AF) -

Round based on the game show 'Family Feud'

1 team will have to clash with another in this section.

### PHASE 3 -

1)Round1(QuickFire)-

Revolving around the concept of "fastest fingers first" the fastest and the most accurate achieves crucial points.

2)Round2(FaceOff!)-

The two teams are given a final question where they battle it out simultaneously.

### Event heads :

Krishna Rushik Nunna

Enan Ramachandran

Akshay Sujesh

# Enigmata



An Unbeatable Equation

Do what others can't

Go head to head in a race against the brightest in a series of difficult maths and computer science questions to emerge victorious. By coding and logic, win against all odds, with a twist...

GRADES 11 & 12

Number of participants per team - 2

ROUND 1:

In this round you and your teammate solve python puzzles in a race against teams from many other schools. Only the most accurate, fastest make it to the next round.

ROUND 2:

Only the finest make it to this point. You will be given a single question and one hour to solve the question faster than the other teams. Will you be the one to take home the final trophy?

Event head :

Siddharth S

# Auctus



Where the thrill of the game meets the thrill of business

GRADES 11 & 12

Number of participants per team - 2

Auctus is an IPL Auction event that will test your knowledge about maths, money management and cricket. Spread over two rounds, this event will test your knowledge related to cricket statistics, IPL history and knowledge of the great game.

## ROUND 1:

The first round is the quiz round, that will test your knowledge on calculation of cricket statistics, identification of data, and IPL trivia. Each question has allotted time, and the teams with the most points will qualify for the auction round.

## ROUND 2:

The second round is the auction round, where the bidding for players will take place.

## Event heads :

Arjun Urs

Vedant Joshi

Vaideek Joshi

# Sonneto

"Not all treasure is silver and gold"

- Jack Sparrow



GRADES 11 & 12

Number of participants per team - 3

Get ready to embark on an extraordinary adventure that will test your wits and bravery. Gather your wittiest members and sharpen those minds because what lies before you is a tale as old as time. Solve the puzzles and riddles and begin your journey of the word to win the final prize.

The event consists of two rounds

ROUND 1 -

A treasure hunt based on multiple clues

ROUND 2 -

A poetry round, details of which will be given on the day of the event

**IMPORTANT NOTE - The event capacity is 10 teams.**

Event heads :

Priyanshi Jain

Shruti Chalapathy



EVENTS FOR  
GRADES  
9 & 10

# Mathopoly

Plot. Plan. Pitch.



GRADES 10 & 9

Number of participants per team - 2 (must have at least one 10th Grader)

ROUND 1: No risk, No reward

With the money you have, take part in a grand auction! Solve the maximum number of maths problems to win the most points. But beware, time is running out and so is your money.

ROUND 2: Sell it quick!

Winning teams have to face a challenging case study and launch their businesses from scratch. Pitch it to the judges, market it and achieve targets. Show us your entrepreneur skills and win the event!

Event heads :

Aritri Dutta

Meenakshi Hariharan

Saanika Jain

Maya Rajesh

# Mathletics

Calculating Champions on the Field!

GRADES 10 & 9

Number of participants per team - 5



Mathletics is an exciting event that combines athletics and mathematics. The event features three rounds conducted by different coordinators. Teams of five participants compete in a series of challenges that integrate the physical and mathematical worlds. The first round is a timed test of speed, accuracy, and stamina, where teams must navigate through five stations while solving math problems. The teams that perform well advance to the semi-finals. In the semi-finals, participants are tested on their understanding mathematical concepts, as well as their accuracy in shooting basketballs through the correct hoops. The finals involve shooting at a goal in football, penalty style, in order to be able to solve math problems, with the winners determined by their accurate solutions and points. Mathletics emphasizes the importance of both math skills and physical health in today's fast-paced world.

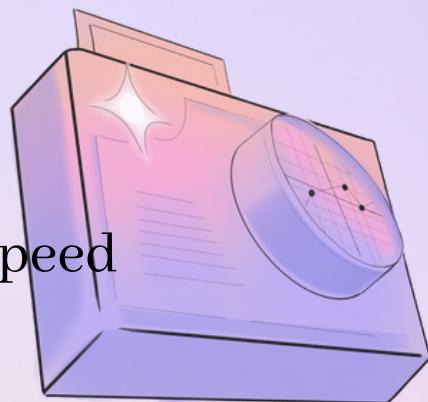
Event heads :

Aarav Dalal

Abhijay Sarmah

# Picstraction

Think faster than your Shutter speed



GRADES 10 & 9

Number of participants per team - 2

Picstraction is an event that pushes you to combine your maths skills with photography. From framing your portrait perfectly to unlocking the description of your picture subject, we have incorporated maths into certain essential elements of good photography. Skill in the subjects of maths, art and photography will guide you to victory in our exciting event!

In the first round, students will have to use their knowledge of coordinate geometry to capture the perfect photograph on school campus.

On moving on to round 2, they will solve yet another question that is sure to bring all those mathematical functions to the forefront of their minds. Then, using basic colour theory students will have to deduce a unique colour based on which they will capture and edit yet some more photos.

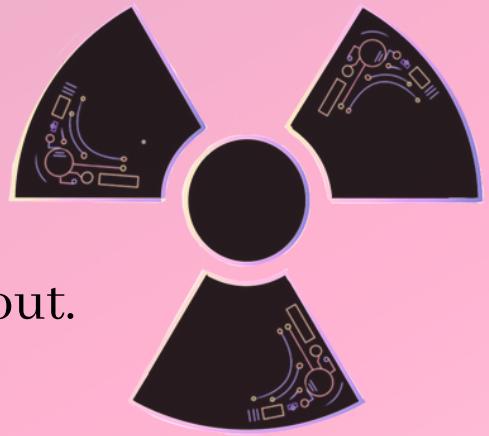
**NOTE -** Participants must bring their own camera for the event. They must also bring their own laptops and chargers for editing.

Event heads :

Avni kulkarni

Suparna Nanda

# Hacksquads



Decrypt the code. Prevent the Fallout.

Save the world.

GRADES 10 & 9

Number of participants per team - 1 (solo event)

Embark on a thrilling adventure at HackSquads, where your mathematical prowess and logical reasoning will be put to the ultimate test! You are entrusted with the fate of the world, as you step into a labyrinth with the daunting task of averting a catastrophic nuclear war. But hold on tight, because this challenge won't be a walk in the park. You'll need to unleash your coding skills, employing blocks, conditions, and loops to crack the maze's enigmatic code while encountering scary and mind-bending obstacles.

Your success will be judged on the efficiency of your solution, the shortest distance covered by your character, and the speed at which you conquer the maze.

Yet, beware! Failure means becoming forever entangled within the labyrinth's clutches, witnessing the horrifying collapse of civilization right before your eyes. The choice is yours to make. Will you rise to the challenge, save the world and claim the coveted title of The Hacker X, or succumb to the labyrinth's treacherous grip? Join our event and let your destiny unfold!

Event heads :

Divyansh Dwivedi

Neel Vinchhi

# Breaking Barriers

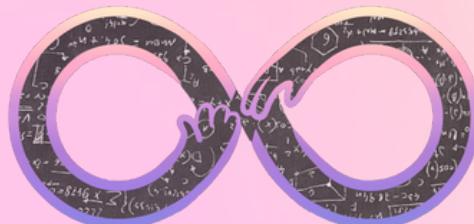
Let's build foundations, not barriers..

GRADES 10 & 9

Number of participants per team - 3

Break away from the classic textbook style of teaching and generate innovative teaching ideas for neurodiverse learners.

- Each team consists of 3 members.
- On receiving a math concept, they must come up with a way to teach this concept to a neurodiverse child. They are free to create visual representations, come up with a role play, use a whiteboard or anything else that can help break down the concept such that it's easy to absorb and retain.
- They would then enact their way of teaching as if they had an audience of neurodiverse children.
- Participants must bring their own stationary(whatever they deem necessary). Sheets will be provided if required.
- Winner will be determined on the basis of creativity, style of teaching, presentation and interactivity.



Event head :

Sachi Kaur

# Mystifiezzera



Four brains fusion, One solution

## GRADES 10 & 9

Number of participants per team - 4 for Round 1 and same of 2 participants for round 2

### ROUND 1 - Decipheroku

Decipheroku is a fun sudoku cum math contention where a team of four solve a bunch of questions to get the sudoku grid right. Get your math right, get the grid right and get going to the next round!

### ROUND 2 - Cryptology

The Caesar Cipher, also known as a shift cipher, is one of the oldest and simplest

forms of encrypting a message. To which there would be only one solution.

Compete with teams and break a safe as soon as possible. Break the code and get your prize.

### Event heads :

Spurthi.k

Srushti k Omprakash

Pragna M

# Rhythmatics



Count the beats, Feel the sums, Embrace the rhythm.

GRADES 10 & 9

Number of participants per team - 4

ROUND 1 -

Participants have to play the beat patterns given to them using a shaker (will be provided) or on an instrument\*

ROUND 2 -

The participants will play the notes that they derive from the questions given. The other team members will attempt to guess the song.

FINALS -

Creation of 4 mini Raps with mathematical terms.

*\*instrument of their choice (the instrument should be specified prior the beginning of the event)*

Event heads :

Rayshmigha

Raghav K

Anghiras M

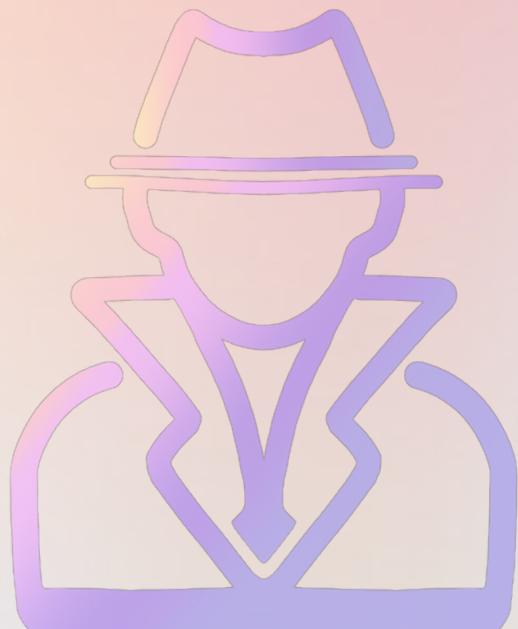
# Operation Breakout

Find Mr.X

GRADES 10 & 9

Number of participants per team - 4

Mr X, a world wide feared terrorist is on the loose. You and your unit from the C.I.A, the only ones willing to partake in a classified mission to find his base. However, participants will be gagged, blindfolded or both in an attempt to find and solve math based clues. If you can successfully make it to his hideout, complete your mission and you might just be able to break out before his mind BLOWING plot takes over you. What is he hiding? Will he get away with it? Register to find out!



Event heads :

Anuj Bajaj

Rushil Srinivas

# Cognitoria

Your childhood board games with a twist!

GRADES 10 & 9

Number of participants per team - 2

## ROUND 1 : Taboo

In Taboo, participants will have to explain a term without using certain words, called taboo words. The points are awarded to the teams based on the correctly explained and answered word.

## ROUND 2 : Enigmath

Math with Housie, Enigmath, helps students utilize their logical thinking and aptitude skills, along with a basic knowledge in mathematics, to solve a variety of questions.

## ROUND 3 : Jeopardy

In Jeopardy, players take turns selecting clues from different maths topics and point values. The host reads the question contestants must respond with the corresponding question. Each correct response earns them the assigned points. The player with the highest score at the end of the game emerges as the winner

Other requirements : Participants must bring their own pencil and notebook

## Event heads :

Rachit Jain

Neev Raj Singh

Aira Seedher

Neha Nirmal

Anoushka Chaturvedi



# Forum Infinitum

You are not a bundle of thoughts, you are infinity personified

GRADES 10 & 9

Number of participants per team - 3

Forum infinitum wishes to connect to ancient roots and solve paradoxes the way our ancestors did it.



ROUND 1- Pursuit of dispute

The participants will arrive in teams of 3 members. The opponents of each debate will be selected at random from a pool. The participants must then present their given mathematician in a given time and persuade the other team and the judging panel that their viewpoint is correct. Once both teams are done speaking, they will be asked questions based on their speeches and will be given bonus points for the same.

ROUND 2- ÷ and Conquer

Half the number of teams participating in round 1 will qualify (winner of each debate). Teams will be given a set of 6 hard subjective questions to solve. Furthermore, each team will have to create 1 or 2 question(s) that they will pose to other teams. These questions will be formed by the team itself (on a specific topic) along with the solutions (without access to any resource) before starting the final round. This thus tests their problem-creating ability and their depth of knowledge. (This is like math duels our ancestors had)

Other Requirements - Participants are allowed to bring device on which they can have their speeches etc. but are not allowed internet access. They will be given internet access 45 mins prior to the start of the debate.

Event heads :

Debayan Mitra

Koushik D Sadashivan