Bal Bharati PUBLIC SCHOOL DWARKA

MATHOMANIA

May, 2023

FROM THE PRINCIPAL'S DESK

"Mathematics is the most beautiful and powerful creation of the human spirit." ~ Stefan Banach

The reign of Mathematics, as a field, stretches much beyond the realm of just numbers. The study of this diverse field is essential to gauge the myriad range of life experiences.

It has also further enabled us to unravel the many mysteries of universe from the shape of the planet to the properties of atom. It has also been utilized by engineers to build infrastructural marvels, by doctors to advise the right dose of medicine, by researchers to prove a hypothesis, by pilots to navigate, by politicians to assess the voter demographics and by players to track their score card.. Mathematics is indeed the key to problem solving and logical thinking and can be integrated in every stage of our life.

The school has been earnestly and diligently providing the avenues for implementing the provisions of NEP 2020. We have introduced multitude of programs to enhance student proficiency in analytical and numerical ability through Olympiads, Quizzes, Experiential Learning Modules and School Enterprise activities.

Suruchi Gandhi
(Principal)

GUIDANCE

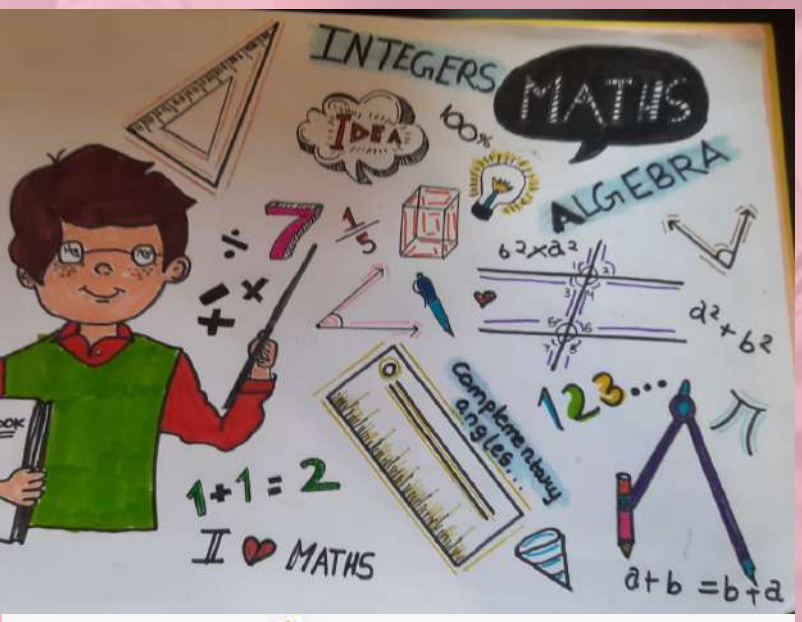
SURUCHI GANDHI (Principal)

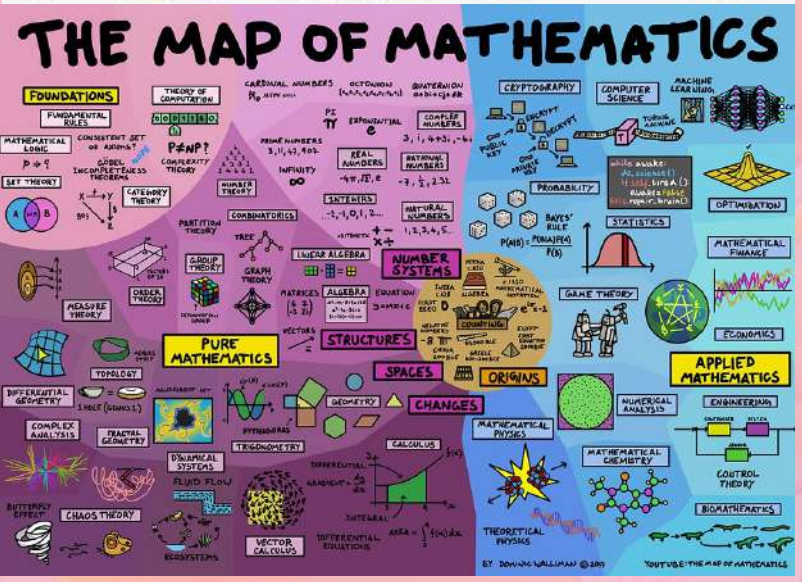
EDITORIAL TEAM

SANDHYA KAKKAR (Vice Principal)

VINITA DHAWAN, KOMAL SHARMA, TANVI GUPTA, SHAVETA MANCHANDA, POOJA BHATIA, SHIWALI BISHT, NIMISHA RAWAT, DIPTI JAIN

STUDENTS- PRAGATI XI A, MANNAT VIII C, SUKRITI VIII C, BHARGAVI VIII C, SAANVI XI A , HARSHIT VERMA XI B





MATH, MY DEAR

O math, my dear
I find you everywhere
When I go to market, to buy grocery
Fractions and decimals ,make mockery.
When Mom makes Suji ka halwa
Ratio of Suji and water shows all jalwa.
When I watch IPL matches,
I get to see a tally of catches.
Relation of my age with father and grandfather,
Change the equation every year
But thanks to Aryabhatta,
I am able to move the gear.
When I see health chart,
Quantity of food , Whether it is litres of water
or grams of fruits, make the cart.
Whether it is rectangular wall or spherical ball
Triangular chips or cuboidal hall,
You come in front on my call.
You lie in my heart and soul
And will help me to achieve my goal.

SHIWALI BISHT
TGT MATHS

GAMIFY the MATH CLASSROOM

Gamification of mathematics is the use of game design elements and game mechanics in the context of mathematics education to further engage and motivate students. The goal is to make learning more fun and engaging for students, while also enhancing their problem-solving and critical thinking skills.
Some examples of gamification of mathematics include:

Mathematical puzzles:

These can take many different forms, such as crosswords, Sudoku, and other types of logic puzzles. Mathematical puzzles are designed to challenge the mind and promote critical thinking skills.

Mathematical games:

These include board games, card games, and other types of games that involve mathematical concepts. Math games are designed for children and adults, and help to make learning maths easy and fun.

Mathematical art:

This involves using mathematical principles and concepts to create aesthetic marvels. For example, fractal art uses fractal geometry to create complex and beautiful designs.

Mathematical models:

These are physical or virtual models that represent mathematical concepts. Examples of mathematical models include Rubik's Cubes, polyhedra, and other geometric shapes.

Shiwali Bisht
TGT Maths

Experiential learning in Mathematics

Experiential learning involves active participation, observation, and reflection. It has proven to be an effective way of learning, especially in the field of mathematics.

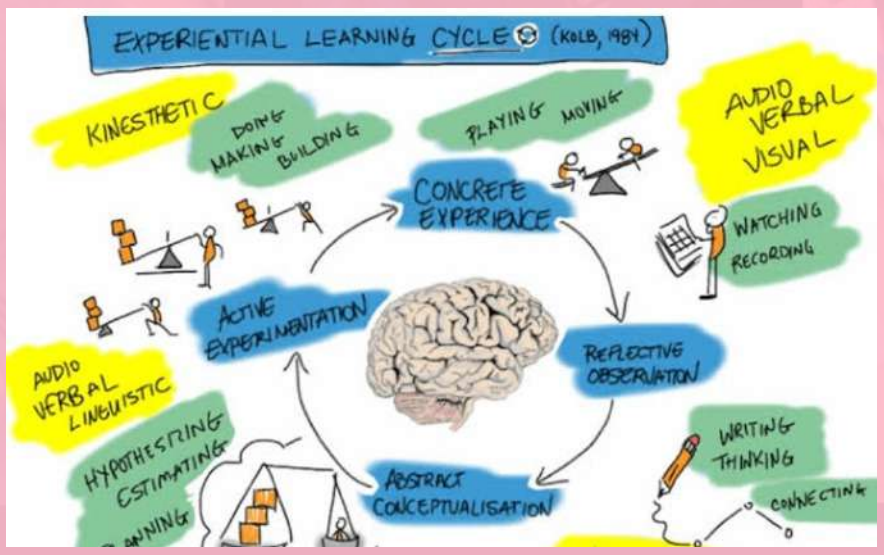
It allows students to understand abstract mathematical concepts better. It involves hands-on activities and practical applications of mathematical concepts, making it easier for students to understand better.

It also nurtures in students critical thinking and problem-solving skills besides promoting a positive attitude towards mathematics. It helps students understand the relevance of mathematics in everyday life, making it more enjoyable and less intimidating.

Experiential learning activities encourages collaboration and communication skills. Students work together in groups, sharing their ideas and strategies, which helps them learn from each other and develop their communication skills.

We at Bal Bharati, involve children in experiential learning activities such as Data Analysis, Fraction Pizza, Shopping Spree, Building Shapes etc. to reinforce mathematical concepts, develop critical thinking and problem-solving skills, and enable them to apply their skills in real-life situations.

SHAVETA MANCHANDA
AT MATHS



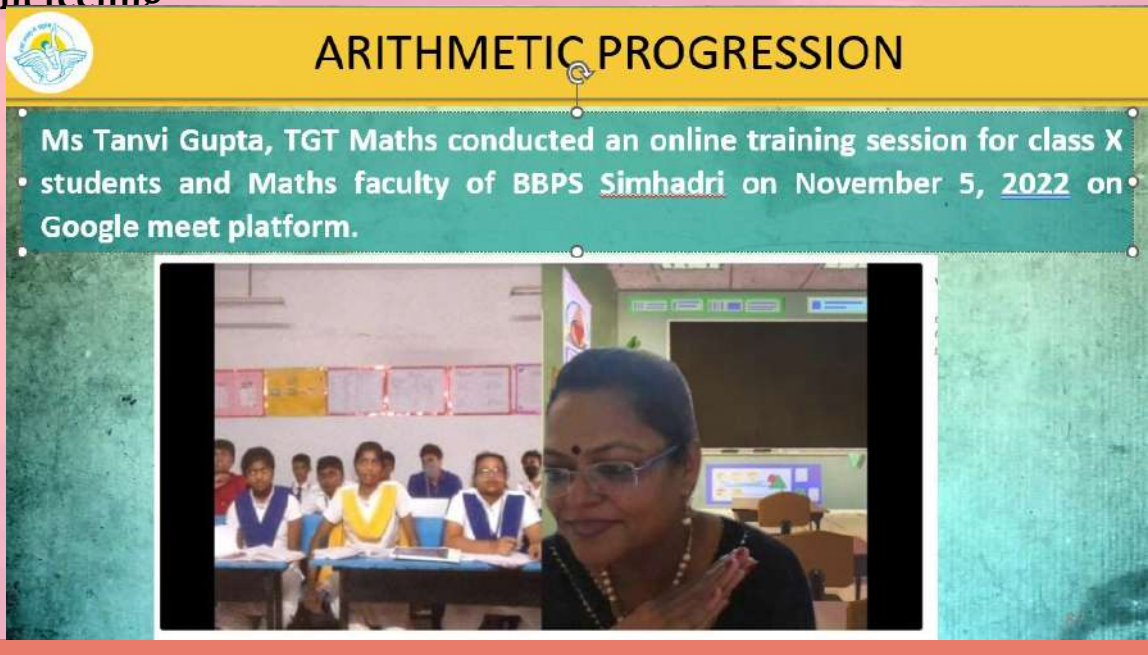
TEACHING BEYOND BORDERS

NEP 2020 focuses on competency based Experiential learning. Post Covid, we could see the sparkle in the eyes of the learners when taken out of the classes for field experience of concepts like probability, coordinate geometry, trigonometry and other geometrical concepts. Activities on arithmetic progression , square root of irrational numbers, similar triangles, area of triangle, linear and quadratic equations and other concepts made maths a fun-filled learning.

Learning beyond the borders definitely helped them in better comprehension and nurture high interest level within the classroom . I think if we are not training our brain, we are draining it. Therefore, to constantly train the brain it is imperative to acquire new skills and techniques and upgrade the pedagogy with moving times.

Also this year, my colleague Ms. Shiwali Bisht and I got the opportunity to teach the students of BBPS Simhadri and Jhanor on the virtual platform using flipped classrooms. Interacting with students sitting far off and listening to their problems, coming up with solutions using virtual class room platforms like Google Meet and MS Teams was a memorable experience. Solving their queries, quick recaps of chapters using PPTs, and practice sheets and helping students in remote areas with their studies really gave a effervescent feeling

Tanvi Gupta
TGT maths
BBPS Dwarka



MATH TIPS

Tips for Excelling in Mathematics

Mathematics is a subject that requires practice and good understanding in order to excel. It is a fundamental subject that is essential in every aspect of our lives, from simple everyday tasks like calculating change at a store to complex scientific and engineering problems.

1) Build a Strong Foundation
Mathematics is like building blocks; each new concept builds upon the previous one. It's essential to have a good foundation in basic mathematical concepts such as addition, subtraction, multiplication, and division. Students should make sure that they have a good grasp of these basic concepts before moving on to more advanced topics.

2) Practice Regularly
Mathematics is a subject that requires consistent practice. The more you practice, the better you get at. Set aside some time every day to practice math problems. Start with simple problems and gradually move on to more complex ones.

3) Understand the Concepts
Mathematics is not just about memorizing formulas and solving problems, but it's about understanding the concepts and the reasoning behind them. Try to understand the logic behind each concept, and its application to different problems.

4) Seek Help
Don't be afraid to seek help if you are struggling with a concept or a problem. Ask your teacher or classmates for help, or seek assistance from online resources or tutors.

5) Use Visual Aids
Visual aids such as graphs, charts, and diagrams can help you understand complex concepts better. Use these tools to visualize problems and understand the relationships between different variables.

6) Be Organized
Keep your notes and study materials organized. Create a study schedule and stick to it. Organizing your materials and time can help you stay focused and on track.

7) Practice Problem-Solving
Mathematics is all about problem-solving. T ry to solve problems in different ways and from different perspectives. This will help you develop critical thinking skills and improve your ability to solve problems.

8) Stay Positive
Mathematics can be challenging, but it's essential to stay positive and keep a growth mindset. Believe in yourself and your ability to learn and improve.

Thus , Mathematics is a subject that requires practice, understanding, and patience to excel. By building a strong foundation, practicing regularly, seeking help, using visual aids, being organized, practising problem-solving, and staying positive, you can develop the skills and knowledge necessary to excel in mathematics.

Pooja Bhatia
PGT Maths

TECHNOLOGY IN MATHEMATICS

Technological integration in Mathematics, has allowed students to interact with people outside the frontiers of classroom thus broadening their understanding and perspectives about what they are studying.

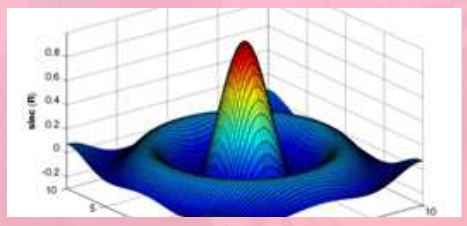
Now a days, AI is incorporating Mathematics at the foundational level. Complex mathematics formulas are being utilized to develop AI applications.

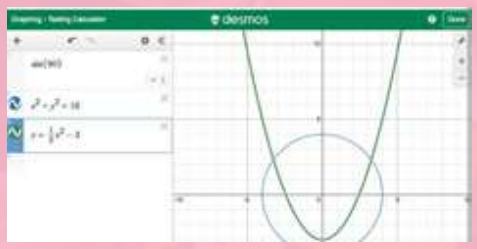
Mathematics is a subject which requires profound visualisation skills. Technology such as AI and animation can be used to help students visualise the different mathematical structures like cone, sphere, ellipse, etc...

Mathematics is either loved, or hated completely, by students. To tackle this, various ed-tech tools and applications can be used such as Kahoot! and online quiz platforms. These develop confidence in students enabling them to explore more.

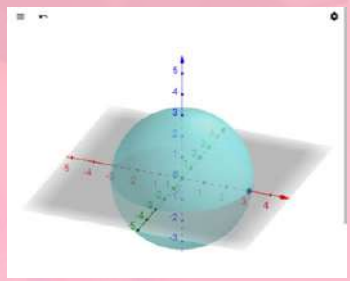
Various visualising applications which are offered by today's tech world which allows an individual to experiment more, visualise, understand the basic concepts thereby, helping them to derive and solve much more complex things by getting into depth of the problem.

Matlab- A C language oriented programming language used to visualise gradient etc.





Desmos- used to visualise graph of various equations who's visualisation is nearly impossible



Geo Gebra: A very important Graphic application which is extensively used to visualise graphs in 2 dimensions as well as 3 Dimensions

At Bal Bharati Dwarka, each classroom in itself is a laboratory, where we have the Interactive panel enabled with high speed Net Connectivity that enables using the applications and make the learning much more effective.

Nimisha Rawat
PGT maths

School Enterprise Challenge

The program aims at fostering the culture of innovation, ideation, creativity and entrepreneurship in the school. This would promote out of box thinking among the students as envisioned in NEP 2020. Various activities were conducted for the students to prepare the ground for budding business men and innovators to visualize new business models.

RESOLVING QUERIES

EXHIBITS ON DISPLAY

SHOWING BUISNESS IDEAS

Aarohan was an amazing opportunity for me to understand how businesses work and gave me an insight into running one of my own.
Harshit Verma
XI B

Aarohan helped me see math in a new light. Relating business and mathematics was really fun and interesting experience for me.
Mahikaa Salhotra
XI C

This was really fun and exciting activity to do. Thinking out of the box and using math to run a business was unexpected. Aarohan truly was one of a kind experience.
Saanvi Jha
XI A

THE TEAM

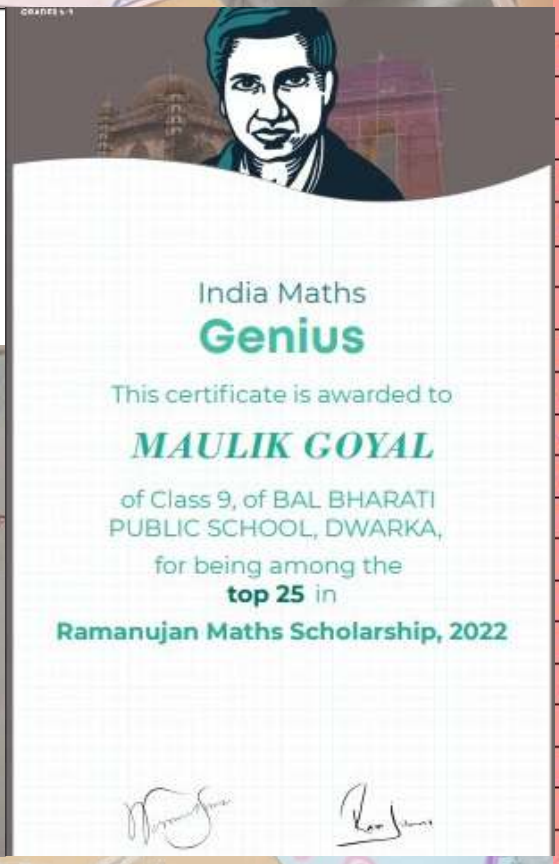
Presenting the idea of eco friendly self made decorative items gave us an opportunity to know more about the business world and understand how a business functions.

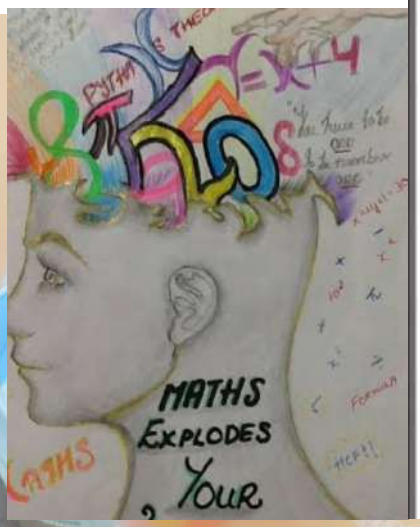
Pragati Ranjan
XI A

YOUNG ARCHIVERS

Bal Bharatians won 30 Medals of Distinction and Gold Medals of Excellence at SOF International Maths Olympiad 2022, organized by Science Olympiad Foundation.

SCIENCE OLYMPIAD FOUNDATION



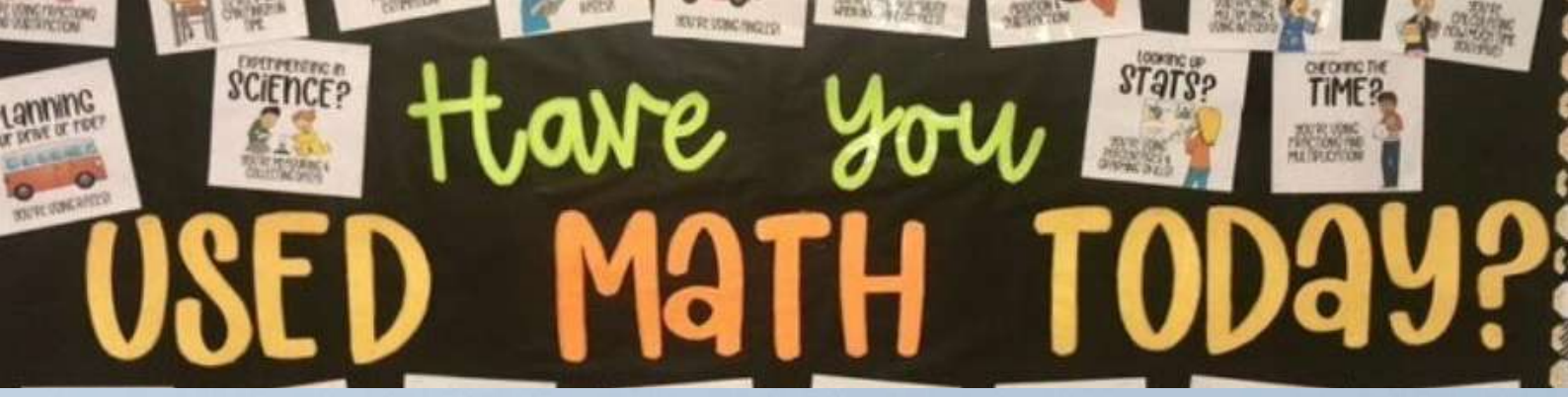


NAME OF STUDENT	CLASS /SEC
YUVAAN GUPTA	VI
MARCELLINA BARMAN	VI
RAJ NARAYAN DATTA	VI
SAANVI CHOUDHARY	VI
SHAURYAVEER	VII
NEERAJ GARKOTI	VII
ISHAAN CHATTOPADHYAY	VII
NISHTHA MISHRA	VII
AARYA GARG	VII
AHAN DAS	VII
ANANMAY GUPTA	VIII
MANAY PANDEY	VIII
PAARTH NIJHAWAN	VIII
MUKUL KATIYAR	VIII
RIDDHESH KUMAR	VII
AASHI	VIII
DEVANK SETHIA	VIII
MAULIK GOYAL	IX
ROHAN SHARMA	IX
JAYESH VIJAI	X
SAHIL JHA	X
RIDHIMA MAKOL	X
SAKSHAM	X
ARUSH CHOUDHARY	XI
ANANYAJ GUPTA	XI
RUHANSH BANSAL	XI
SAMBHAV SHARMA	XI
ISHIKA ACHARYA	XI
ADITYA RAWAT	XII
ANWESHIKA	XII

INTELLIGENT TANGENTS
CRUSADERS OF NEP 2020

With an aim to inspire young mathematicians, and to sensitise them towards SDG 1 i.e No Poverty, the school celebrated "Intelligent Tangents".

The highlights of the event were- T-shirt painting which transported logical memory to a creative pedestal; PPT making exhibited innovative ideas to meet the No poverty target by 2030 and "Thrift Saving Plan" aimed at promoting conservation of resources. Concepts of surface areas and volume led to empathy. The students designed low cost shelter homes for poor and gave new dimensions to mathematics through posters designed in Warli Art.



WORDS SPOKEN BY NUMBERS

THE QUEST

Every problem has a solution,
but the issue everytime is its execution.
The solution is always there, though its hard to find.
Yet, the journey sharpens our mind.
It is about thinking outside the box.
Have patience and carefully connect the dots.
Not understanding at first isn't rare,
Keep endeavouring, despite failures and you will get there.

Shivika Mankotia
IX A

MAGIC OF MATHS

Maths is like magic,
It is full of logic.
Maths is your friend,
The numbers will never end.
Use the formula of 'BODMAS',
To complete any of your maths tasks.
Aryabhata invented the number 'zero',
He was our Maths Hero.
Maths helps us in every subject,
Do maths every day to see the effect.
Maths helps us in AI,
It is one of the things that you cannot buy.
Maths helps us with our daily life problem,
By doing maths we will rise from the bottom.
So next time you do maths don't think of it as your foe,
It will give you many solutions that you don't know.

Anwesha Aswal
VII C

THE TECHNIQUE

Maths is so unique
There is always a technique
It is always exciting
Solving it is so delighting.
Its fun to make equations,
But sometimes it takes time in calculations.
I would give an advice
sometimes you have to do it twice or thrice.
Maths is fun learning
It's important to do brain-storming
Arithmetic is important
Rules have to be followed accordant.
So, maths is so unique
There is always a technique.

Manasvi Sharma
VII C

MYSTERIOUS MATHS

Maths, Maths, Maths
we're studying it since Nursery,
But did anybody think about,
it's spectacular history !
Why numbers are in such a crowd has always been a mystery.

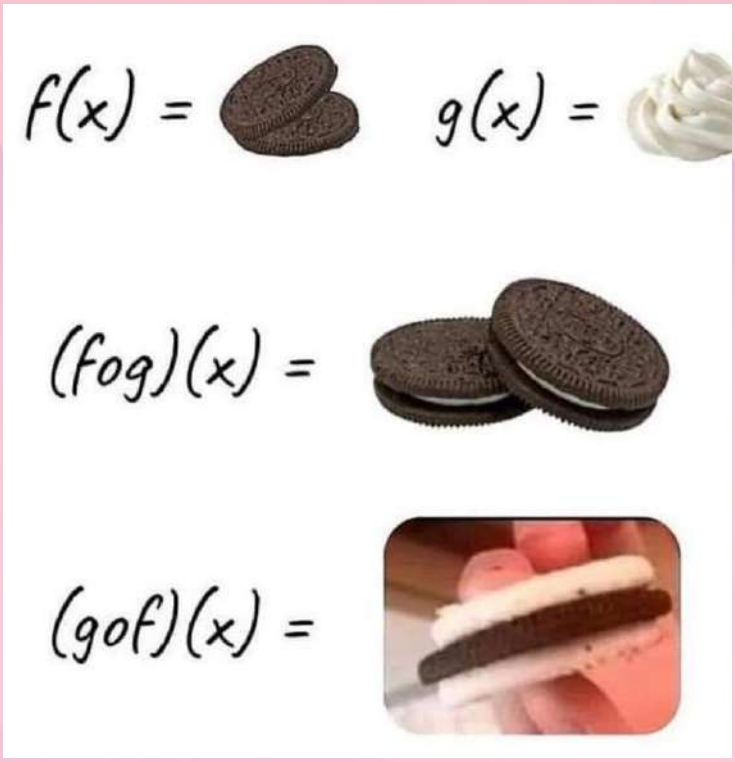
We won't be able to buy chocolates if we didn't know maths.
Calculating the price would always Feel like having collective wealth.

Math is just like a friend,
Which will never leave you alone. It will help you to vend.
And make things so easy to own.

You don't need to inherit,
Math is a subject to merit !

Aradhya Kumar
VII-A

KNOWLEDGE MANIA



PUZZLE CORNER

Get Out of Here

Make your way from START to END by following a number path that goes even, odd, even, odd, etc.

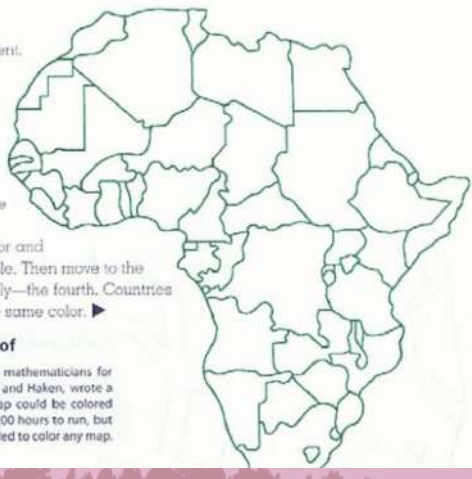
How many different paths do you think you might start before you find the correct one?

START					
2	7	4	3	12	7
3	6	3	8	11	2
6	9	4	13	4	15
3	22	5	12	11	22
12	17	2	9	20	5 END

COLOR MY WORLD

In 1893, Francis Guthrie, a student, wondered whether any map could be colored with four colors or fewer—to illustrate the borders, countries that share a border must be different colors.

Try to color the map of Africa using only four colors. This may be harder than it sounds, but it isn't impossible! **HINT:** Choose one color and fill in as many countries as possible. Then move to the second color, the third, and—finally—the fourth. Countries that share a border cannot be the same color. ▶



The Burden of Proof

This seemingly simple question perplexed mathematicians for years. In 1976, two mathematicians, Appel and Haken, wrote a computer program to determine if any map could be colored with four colors. The program took over 1,200 hours to run, but finally verified that only four colors are needed to color any map.

TAKING MATHEMATICS OUTSIDE THE FRONTIERS OF CLASSROOM

It is a learning process initiated by concrete experiences, which demand reflection, review and prospective taking. This leads to conclusion making and conceptualisation of the theorems and formulae, thereby resulting into a fun-filled learning experience.