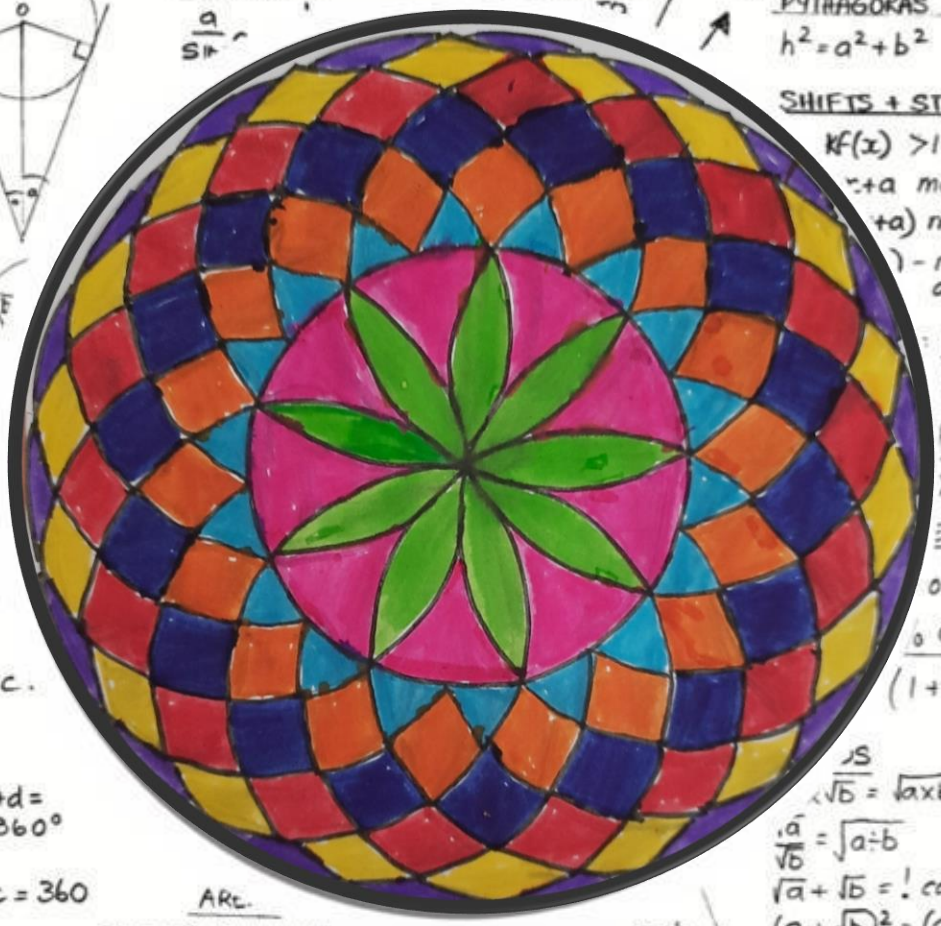
Mathoscope

BAL BHARATI PUBLIC SCHOOL, NOIDA

Volume 2.0



RADIUS

RADIUS

ISOCELES Δ

CHORD BISECTOR = DIAMETER

CHORD

a+b+c+d = 360°
a+d = 180°
b+c = 180°

a=a

b=b

a+b = 180°

COS = ADJ / HYP

TOA = OPP / ADJ

RIGHT ANGLED TRIANGLES

SINE + COSINE

ANY OTHER Δ

SINE RULE

WAY UP THEN READ OFF BOTTOM AXIS

INTERQUARTILE RANGE

DISTANCE BET 1/4 and 3/4 QUARTILES ON BOTTOM SCALE

PIE CHARTS

- ADD TOTAL OF ITEMS
- FIND MULTIPLIER TO GET TO 360°
- MULTIPLY EVERY

MEAN = TOTAL OF ITEMS / NO OF ITEMS

RANGE = HOW FAR FROM SMALLEST TO BIGGEST

BEARINGS

FROM · NORTHLINE · CLOCKWISE

FROM P TO Q

PYTHAGORAS

$h^2 = a^2 + b^2$

SHIFTS + STRETCHES ON GRAPHS

$kf(x)$ >1 Squeeze <1 Squash

$f(x+a)$ moves a along y axis

$f(x+a)$ moves $-a$ along x axis

$f(\frac{1}{x})$ - multiplier scrunches divider spreads out

% CHANGE = CHANGE / ORIGINAL x 100

% PROFIT = PROFIT / ORIGINAL x 100

% INTEREST

$\% \left(\frac{r}{100} \times n\right)$

% CHANGE $\left(1 + \frac{r}{100}\right)^n$

N = EXISTING AMOUNT
No = ORIGINAL AMNT
R = RATE
N = no of days/yrs

GEOMETRY

a+b+c

a+b+c.

a+b+c+d = 360°

a+b+c = 360

a = c+d

a = b
Isoceles Δ

AREA

RECTANGLE : L x W
TRIANGLE : ½ b x h
PARRELOGRAM : b x h (vert height)
TRAPEZIUM
½ x (a+b) x h
CIRCLE : πr^2
SECTOR : $\frac{\theta}{360°}$ x Area of Circle

VOLUMES

CUBOID : L x W x H

SPHERE : $\frac{4}{3}\pi r^3$

$\sqrt{a} \times \sqrt{b} = \sqrt{a \times b}$

$\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{a \div b}$

$\sqrt{a} + \sqrt{b} = !$ can't do it

$(a + \sqrt{b})^2 = (a + \sqrt{b})(a + \sqrt{b})$ FOIL
$= a^2 + 2a\sqrt{b} + b$

$x^a \times x^b = x^{a+b}$

$(x^a)^b = x^{a \times b} = x^{ab}$

$x^a \div x^b = x^{a-b}$

N^{th} term (common)

n^{th} term = $dn + (a - d)$
a = 1st term
d = common difference

N^{th} term (changing diff)

$n^{th} = a + (n-1)d + \frac{1}{2}(n-1)(n-2)c$

MIDPOINT OF LINE

- average of x co-ordinates
- average of y co-ordinates

FORMULA OF STRAIGHT LINE

$y = mx + c$ m is gradient
c is y intercept

GRADIENT OF A LINE

GRADIENT = CHANGE IN x

DENSITY = MASS ÷ VOL

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From the Principal's Desk

Mathematics is all pervasive and all encompassing , beginning from the stars , moon and the universe to the mother-child relationship to every individual need of a person.
Human beings generally behave like a modulus function as they react positively or negatively according to the circumstances or people around them; whenever a person is looking forward to a positive outcome from a situation he takes the positive values otherwise he chooses to remain indifferent by taking the negative values.
Every individual has ∞ desires to fulfil, despite knowing the fact that ∞ is not a real number. The emotional distance between a mother-child can be minimized, i.e. there exists a Delta > 0 for which we have Epsilon > 0. A mother always tends to a child, who is a limit to her.
Friends are like limitless functions separately, but together they become a constant function. Teachers are synonymous with integration as they increase the capabilities of a constant student with their knowledge and magnify a student's capabilities.

What is the largest number your mind can conceive? What is the size of the universe? The answer to both these questions is the same. The answer is not infinity, it is zero.
Yes! The size of the universe is zero, and so is the largest number! For every positive number there exists a negative number in Mathematics. For every matter there exists an anti-matter in nature. This is the bigger picture. Therefore, when you put everything together, the size of the universe is zero. Zero is thus simultaneously everything as well as nothing. That's why it's called a whole number. You add or remove anything from this whole, it still remains a whole.
The most important lesson Mathematics teaches us is the will to never give up ,as every problem has a solution.

Asha Prabhakar

ACTION RESEARCH: CARBON FOOTPRINTS

Contemporary climate change includes both the global warming caused by humans, and its impacts on Earth's weather patterns. There have been previous periods of climate change, but the current changes are more rapid than any known events in Earth's history.

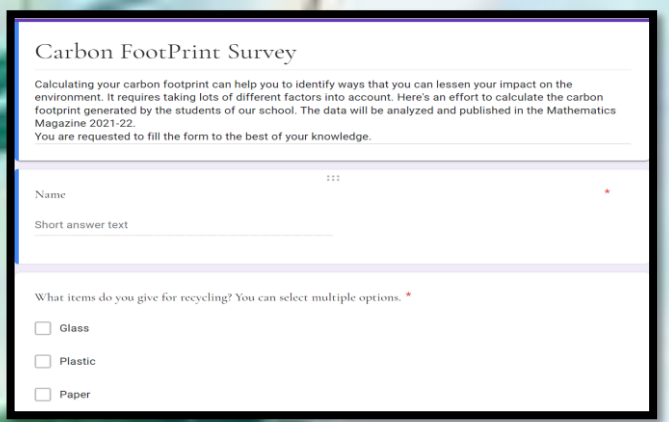
Calculating your carbon footprints can help you to identify ways in which you can lessen your impact on the environment.

In order to create awareness among their fellow students, A group of class XI, students at BBPS Noida, conducted an Action research. Through this research we tried to calculate the carbon footprints of students of our school and analysed the data to understand our impact on the environment.

Step 1: Collection of Data

We created a google form to collect demographic details and personal choices of the students which leave an impact on the carbon footprints of the earth. Various questions based on food preferences, usage of water, yearly purchases, usage of vehicle, Garbage production were asked through the form.

Click here to participate: https://forms.gle/TuXi1b8Y5DAfUSmg6


Carbon FootPrint Survey

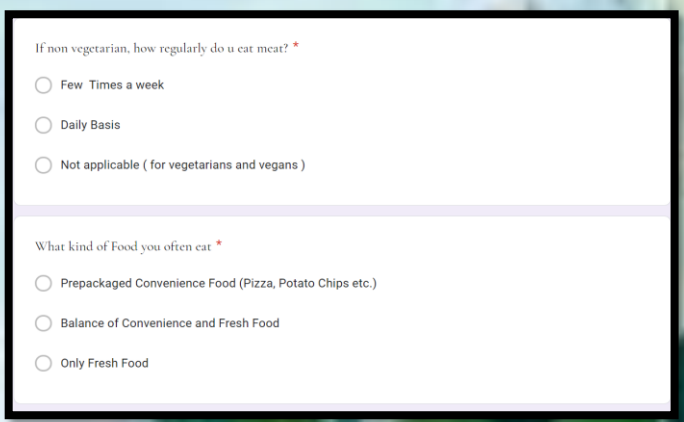
Calculating your carbon footprint can help you to identify ways that you can lessen your impact on the environment. It requires taking lots of different factors into account. Here's an effort to calculate the carbon footprint generated by the students of our school. The data will be analyzed and published in the Mathematics Magazine 2021-22.
You are requested to fill the form to the best of your knowledge.

Name *

Short answer text

What items do you give for recycling? You can select multiple options. *

- Glass
- Plastic
- Paper


If non vegetarian, how regularly do u eat meat? *

- Few Times a week
- Daily Basis
- Not applicable (for vegetarians and vegans)

What kind of Food you often eat *

- Prepackaged Convenience Food (Pizza, Potato Chips etc.)
- Balance of Convenience and Fresh Food
- Only Fresh Food

Climate Change is not just a problem for the future. It is impacting us everyday, everywhere.

ACTION RESEARCH: CARBON FOOTPRINTS

Step 2: Organizing the data and allotting numerical value to each response.
Each response given by the students was organized in an excel sheet and numerical weightage was allotted to it as per the following criteria

1

Number of Members in your household and size of the house:
More the number of members in one apartment, less is the impact on the environment.

2

Food Choices:
You will have a higher carbon footprint if you eat meat from domesticated animals regularly.

3

Examine your water Consumption: Your water consumption from appliances is also important. More Water consumptions will get higher points.

4

Determine how many household purchases you make each year. If you buy more products this year then you will have a higher score.

5

Consider how much waste you produce.
Count how many buckets of garbage you produce everyday and then assign points based on it.

6

Identify the amount of waste that you recycle.
If you do recycle then start with 24 points and subtract 4 points for each type of item you recycle.

7

Consider, how many kilometers you travel every year with your personal vehicle.
More the distance you travel, higher the points will be added to your score.

Click here to check the points

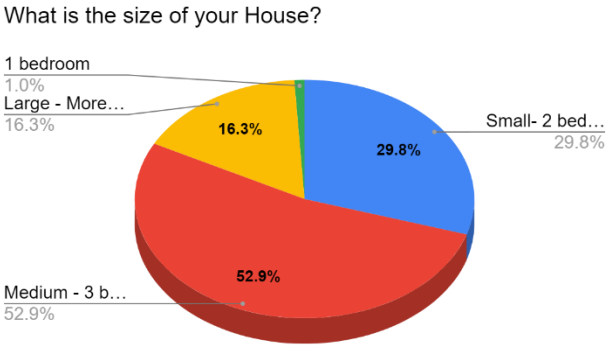
https://docs.google.com/spreadsheets/d/1dGCVCwnRM7UtZ36u3rrNqAq_KVr66Uvq0KH_OLtAvmk/edit?usp=sharing

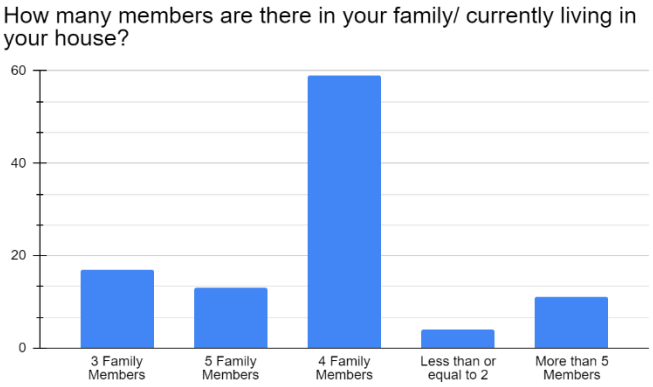
ACTION RESEARCH: CARBON FOOTPRINTS

Step 3: Analysis of the data

Each category was analyzed individually and presented graphically.

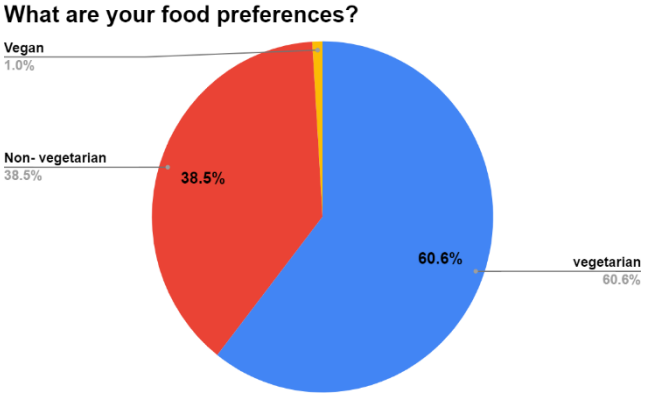
Members in the household

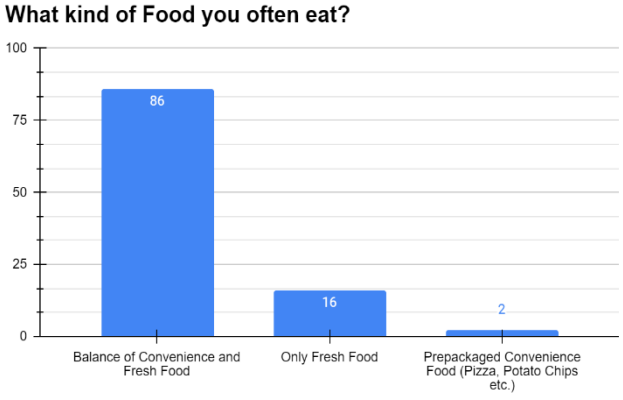




It is observed that more than 50% of students stay at Medium size house (3BHK) and have around 4 family members on an average. A large house with less number of family members leads to higher carbon footprints. Reducing the size of the house can help in reducing the carbon footprints generated.

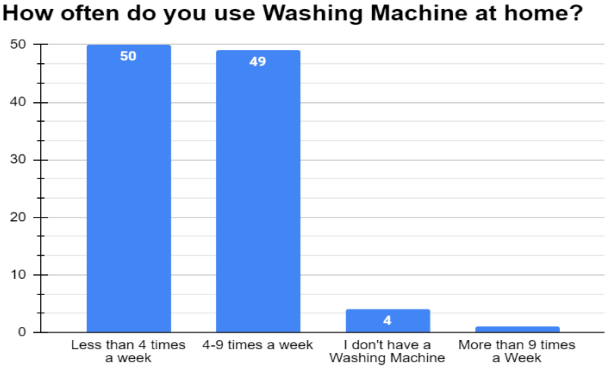
Food Preferences





Around 40% of the students prefer non vegetarian diet and consume it few times a week. Reducing the consumption of Non vegetarian diet will help in reducing the carbon footprints. Also More than 80% students prefer a balance of convenience and Fresh food. Consuming more of Home made food will reduce the carbon footprint to large extent.

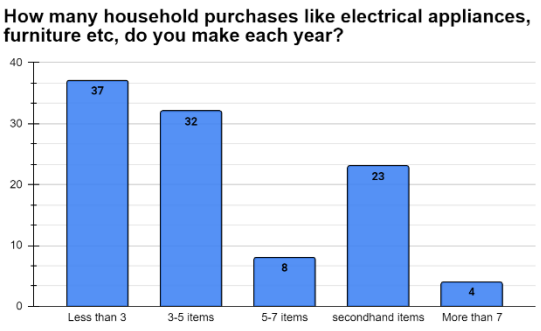
Usage of Water based appliances (Washing Machine, Dish Washer etc.)



Around 50% households are using washing machine more than 4 times a week. Usage of water consuming appliances leads to water wastage and hence increased carbon footprints. We should try to reduce the usage of such appliances by using same clothes without washing more than once and making sure that we are always running a full load

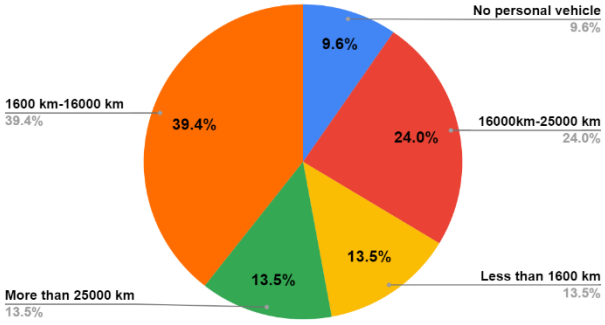
ACTION RESEARCH: CARBON FOOTPRINTS

Electrical Appliances

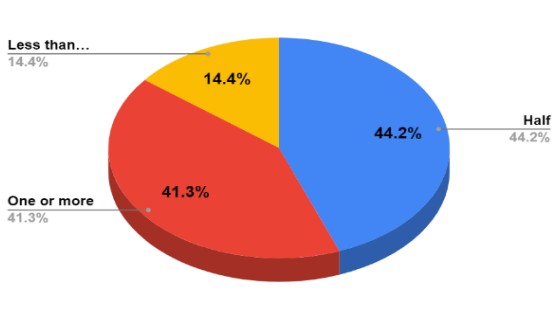


More than 50% households purchase less than or equal to 5 electrical appliances every year. Also number of households purchasing second hand items is very less. Reusing of electrical appliances and limiting the purchase to necessities will help in reducing the carbon footprints.

Most of the households recycle plastic and paper. Only 50% households recycle food waste by composting. Very few households recycle glass, aluminum and steel. We need to work upon recycling of different materials.

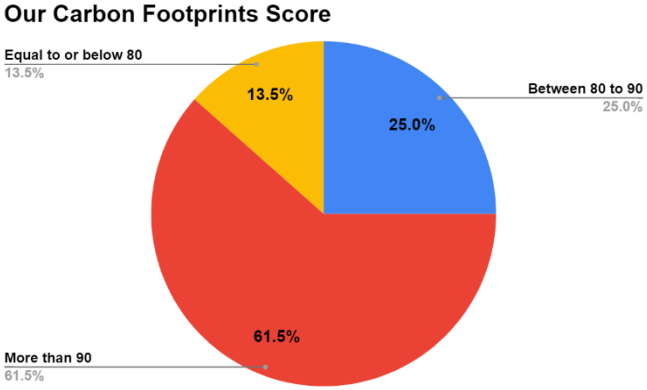


Around 40% households are using personal vehicles for more than 16000 Km a year. It leads to high carbon emission. Using Public Transport and Car pooling are some ways in which it can be reduced.



Around 40% of the households produce more than one bucket of waste everyday. Reducing the amount of waste produced to less than half will help in reducing our carbon footprints on earth.

CONCLUSION



More than 60% students have Carbon footprint score more than 90. It shows that we are making a very high impact on our environment. Most of us needs to make lifestyle changes to reduce our carbon footprints.

Manjari Pandey, Divija Bansal, Subhiksha Iyer, Komal Yadav, Nia Varghese (Class 11 C)

World Through Mathematical Lens…..

Aarti Devgan – 8A

Many Natural patterns are in accord with Fibonacci Sequence

Rashi Sachdeva – 12C

Congruence is synonym to perfection

Akshaj Singh – 11A

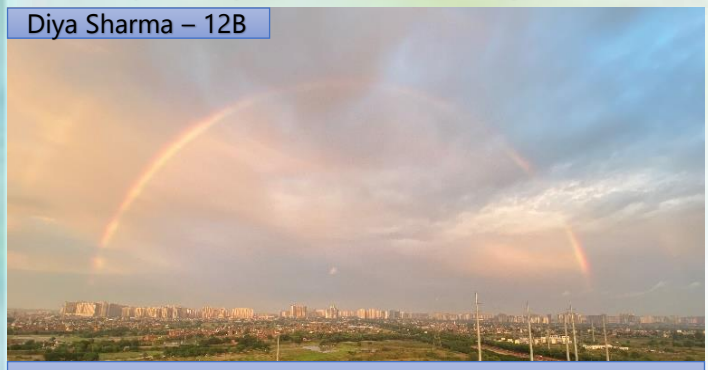
Circles always matter, be in life or in the study of Mathematics

Diya Sharma – 12B

Symmetry is what we see at a glance

> The most creative world of photography lays it's perfection through Mathematics.
>
> Under the aegis of photography club of BBPS Noida, Students captured the Mathematical concepts in our surroundings and showcased their talent.
>
> They used the Mathematical concepts like Symmetry, Congruence, Golden Ratio etc. in order to carve a perfect picture.

Diya Sharma – 12B



Because Nature is nothing but perfect just like semi circles

Sanchit Sachdeva – 11A

There is a geometry in the humming of the strings.

Rashi Sachdeva – 12C

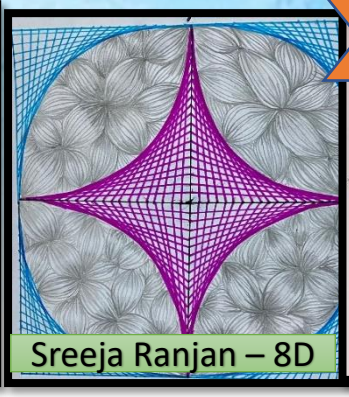
Parallel lines & planes : Always the same distance apart, No matter how far they extend

Probability theory is nothing but common sense reduced to calculations.

OPTICAL ILLUSIONS

There is a mathematical side to optical illusions. As we have heard, "You can't square a circle" which is a metaphor for trying to do the impossible. Many scientists and mathematicians like Prof. Kokichi Sugihara have researched about the ambiguity of illusions and have tried to unravel the mysteries behind them. A geometric illusion has psychology related applications as well. Artists use illusions constantly in their art. Depth, size and several optical illusions are woven into art to make a 2 Dimensional image seem like something completely different.

Aarav Das – 8A



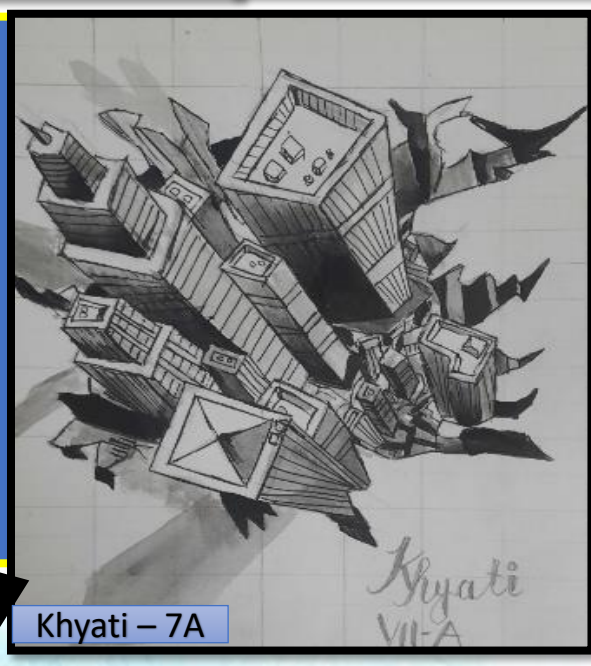
Sreeja Ranjan – 8D

Lakshya Joshi – 6B

Hitanshi Aggarwal – 7C

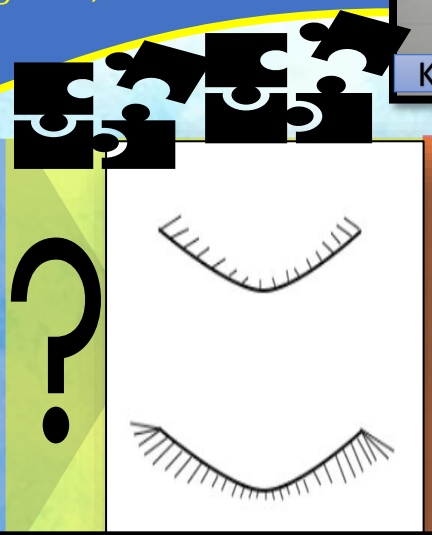
Optical illusions are figures made of straight lines or curves in which the lines or their interrelationships are misinterpreted by the visual system.

Optical illusions are important tools in visual research to help understand how visual processing works in normal and diseased brain. Physiological illusions cause a person to see parts of an image that are not actually there. Some very important examples are the Herman Grid illusion, Devil's Tuning Fork, Ponzo Illusion



Khyati – 7A

Let's have a look at the arcs. Can you tell which one of the following is longer?



A quick look reveals that the arc at the bottom is longer. However, they both have the same length.

Optical illusions are actually working on the science of perception and are an amazing form of art. Have fun and don't get dizzy !!

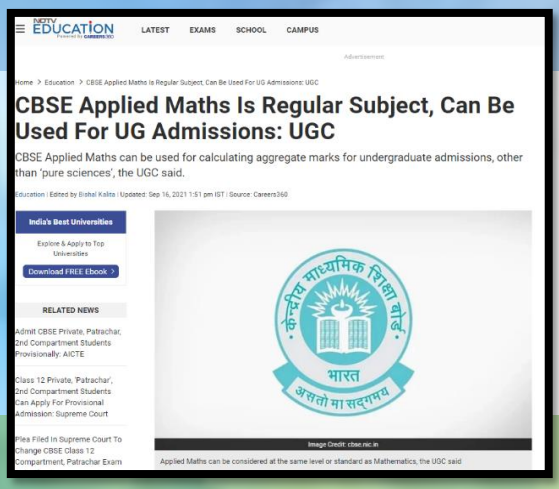
APPLIED MATHEMATICS

The Central Board of Secondary Education (CBSE) had introduced Applied Mathematics for classes 11 & 12 in all schools affiliated to it from the 2020-21 academic session.

The idea behind introducing this subject was to make relevant for those who do not want to study Core Mathematics but use it for data interpretation, business, finance, graphical representation and other similar things. It puts mathematical concepts into use to solve real world problems.

Mathematics is widely used in higher education. It was observed that the existing syllabus of mathematics was much related to science field but did not align well with commerce or humanities field. Keeping this in mind, CBSE introduced this subject for mainly Commerce and Humanities students.

The syllabus of Applied Mathematics is just like Commercial Mathematics which helps a student to develop analytical skills, logical thinking, interpretation skills, observation and many more. It makes a student competent and helps him/her to clear entrance tests that is now required to get admission in various colleges. It also provides employment opportunities in both government and private sectors and has a plethora of job types to choose from.



APPLIED MATHEMATICS CAREER OPTIONS:

•PhD in applied mathematics: it is 3 year full time Doctorate course. It involves research using various concepts of mathematics such as graph theory, probability, statistics and much more.

Admission – based on National Level Entrance Exams (GAT, NET, SET, AJEE)

•The university grants commission (UGC) has directed all varsities to treat Applied Mathematics subject for class 12 students at par with Mathematics while calculating aggregate marks for admission to undergraduate courses for humanities and commerce.

Any Course related to Commerce can be opted while having Applied Mathematics, Mainly now many universities cast the eligible students on the basis of the entrances only. If we talk about the few:

•DU JAT- Delhi University

•IPU- Indraprastha University

•Amity – Group Discussions/Interview

•And many more

Exceptions:

The board requested those universities to consider the new Applied Mathematics course at par with the existing Mathematics course for admission to courses other than Engineering, Mathematics and Physical Sciences

- Sanjay Dua (PGT Mathematics)

Art & Math: Aesthetics of Calculations

Saptarshi Shai – 6D | Aarya Bhadouria – 9A | Anshita Chauha-7B | Luvya Joshi -6A

Mandala Art

Mandala translates complex mathematical expressions into simple shapes and forms. In various spiritual traditions, mandalas are employed for focusing attention of practitioners and as a spiritual guidance tool. Mandla reveal the inner workings of Nature and the inherent order of the Universe.

Shreyansh Rao – 6D | Sanika Bhagat – 7B

DID YOU KNOW?

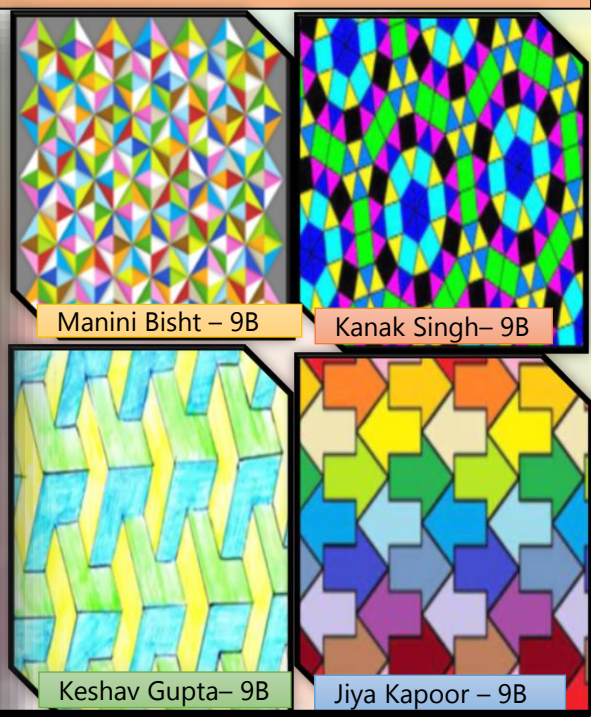
The Mona Lisa, painted by Leonardo Da Vinci, is drawn according to **THE GOLDEN RATIO**

Mathematics and art are related in a variety of ways. Mathematics has itself been described as an art motivated by beauty.

Tessellations

A tessellation or tiling is the covering of a surface, often a plane, using one or more geometric shapes, called tiles, with no overlaps and no gaps. In mathematics, tessellation can be generalized to higher dimensions and a variety of geometries.

Dwijesh Mahapatra – 6A



Manini Bisht – 9B | Kanak Singh– 9B | Keshav Gupta– 9B | Jiya Kapoor – 9B

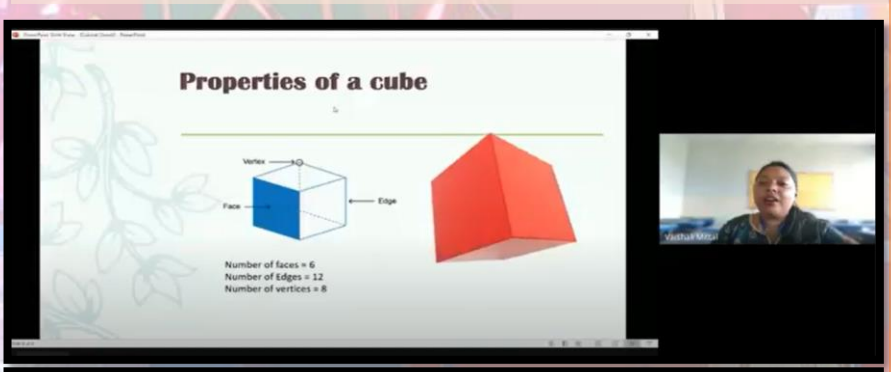
Mathematics is an art of Human understanding – William Thurston

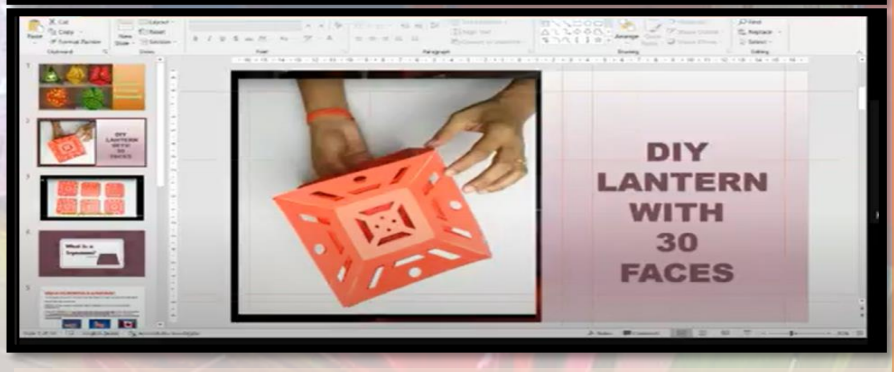
Celebrating a Cubical Deepawali

Bal Bharati Public School, Noida is an environment conscious school and aims at inculcating ecofriendly culture and practices amongst its students.

As a part of celebrating clean and green Diwali this year, an activity 'Let's Celebrate a Cubical Deepawali' was planned for the students of Classes VII and VIII.

The Visual Art and Mathematics faculty of the school conducted various sessions demonstrating the making of paper lanterns using innovative techniques and 3D shapes from 22 Oct, 21 to 29 Oct, 21. The above activity was conducted as a part of skill development program.





The activity not only enhanced the aesthetic skills of the students but also developed a strong understanding of the 3D shapes such as a cube, pentagon, hexagon, octagon etc.

Role of Mathematics in New Education Policy

The new National Education Policy (NEP), 2020, has significant provision and provides a platform to build, nurture, foster, encourage and multiply mathematical thinking. It has introduced the reforms needed to balance the need for 21st century employment and entrepreneurship, which is marked by critical, lateral, and mathematical thinking.

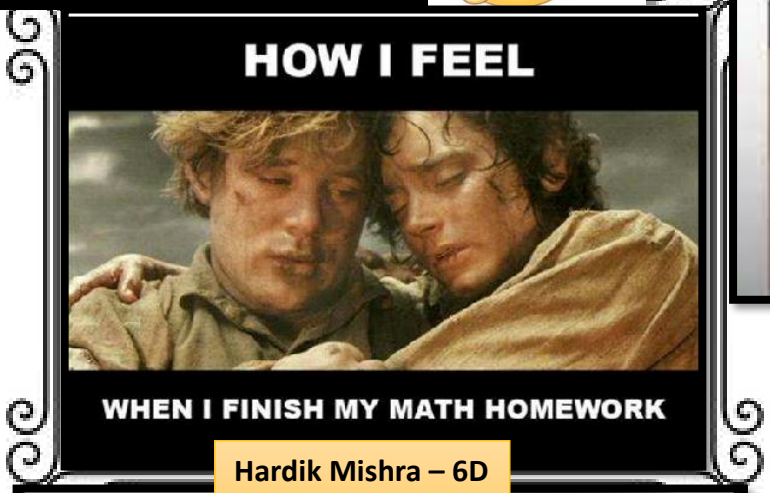
The NEP appreciated the necessity of Mathematical thinking and its importance for the country to become a Vishwa Guru. Big data analytics, artificial intelligence, machine learning, blockchains are key technologies of today, and mathematics is the core of all of these technologies. Hence, it is critical to building the computation thinking capabilities of our youngsters.

It is also mandated in NEP to introduce a coding curriculum from middle school as it helps in developing the computation capabilities and intuitive reasoning. Because the application of Mathematics is extensive and diverse, by introducing the multidisciplinary curriculum and credit-based mechanism, NEP provides flexibility to students to apply their knowledge.

Also, policy provisions for establishing Mathematics clubs in Higher Education Institutions for better collaboration and interdisciplinary research is the need of the hour.

- Anoop Dixit
(P.G.T. Mathematics)

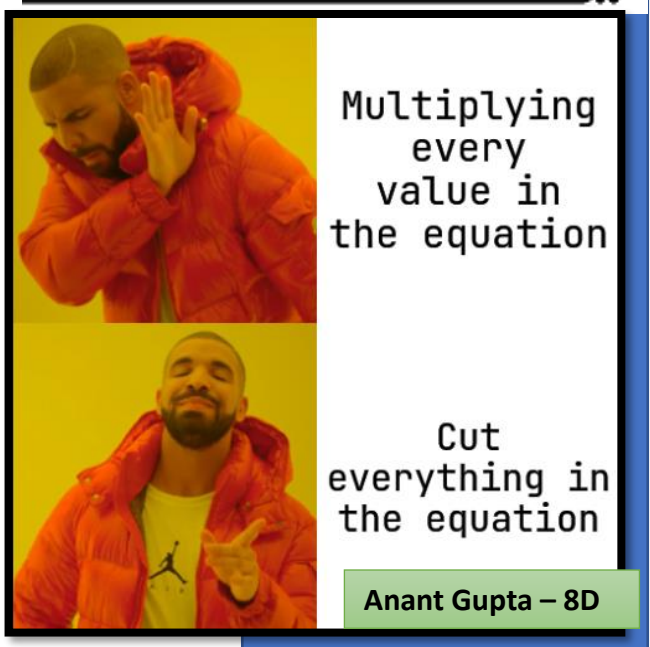
LAUGH OUT LOUD!



Hardik Mishra – 6D

KV Pratik – 7D

Pranav Gupta – 9B



Anant Gupta – 8D

Math is full of fun
With so much to learn
Profits are added
While losses are subtracted
Degrees are multiplied
And percentage is divided
Geometry is full of Mystery
Algebra has a big history
Integers are different as brothers
Lines are parallel
Angles are similar
Math is necessary in life
Without it, it is difficult to survive

Pranika Dixit – 6D

Math Limerick

I Once thought that Math
Was gross...
As it was such a bore...
Sometimes it kills..
But it also develops skills...
And now I like Math more &
More...

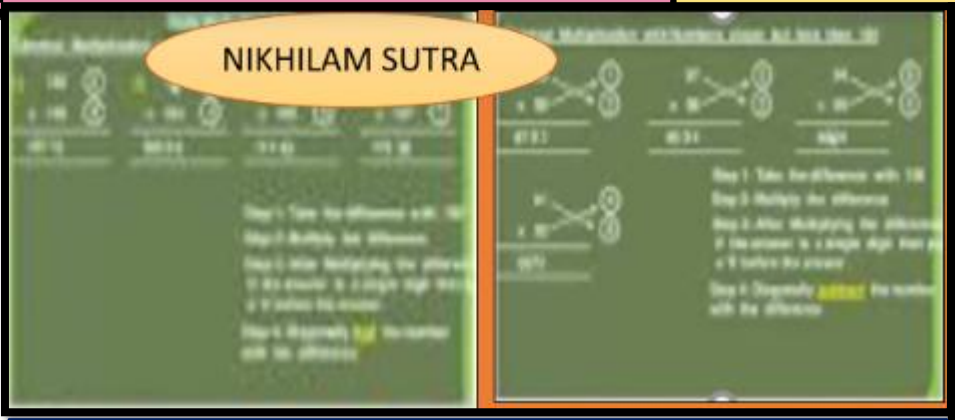
Yadvi Jain – 8A

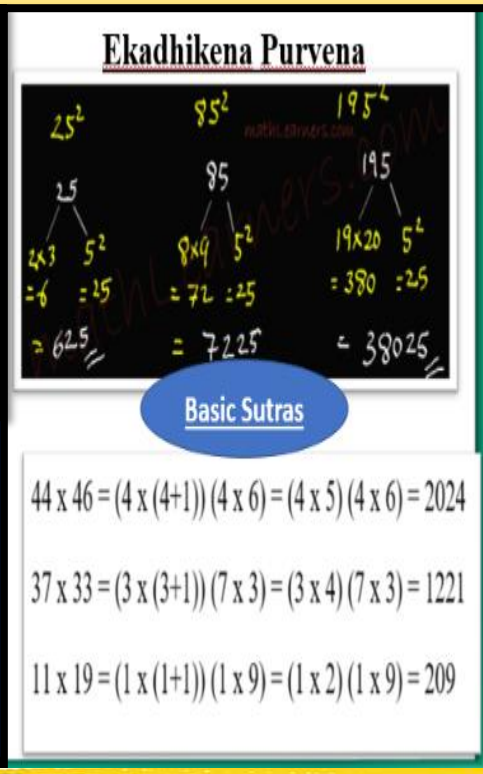
Aryabhata Club

Aryabhata club is formed to develop students level of Mathematical skills and knowledge. Students get an opportunity to work in groups to explore interesting Mathematical puzzles, to work with 3-D models, enrich their skills by solving complex arithmetic calculations using VEDIC MATH

A-4 Sheet activity:
Students developed their logical reasoning and visualization skill by making different craft like Rabbit and Fish using A-4 sheet. It also helped in developing heuristic and problem-solving attitude among the students

Mobius Strip Activity:
Concept of Mobius strip was introduced and different pattern using mobius strip was explained. Students Developed observational and creative skills by making different pattern using two circular strip and mobius strip by cutting and pasting method.





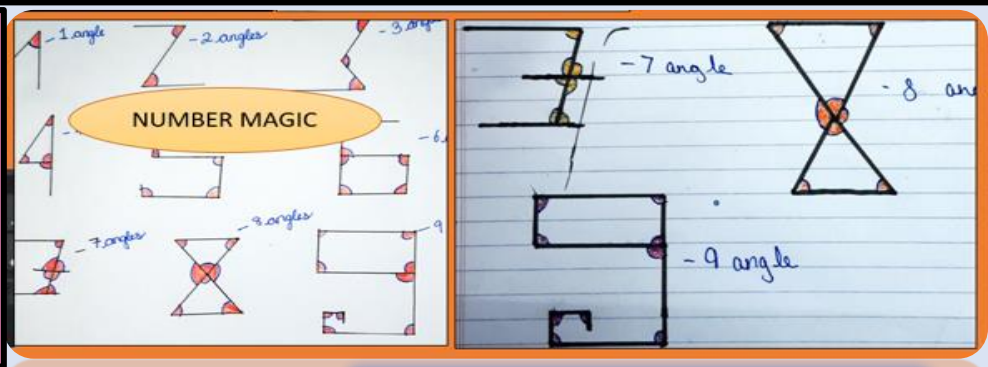
Vedic Math
Students got an opportunity to learn a few Basic Sutras and applied them to make Arithmetic calculations easier.

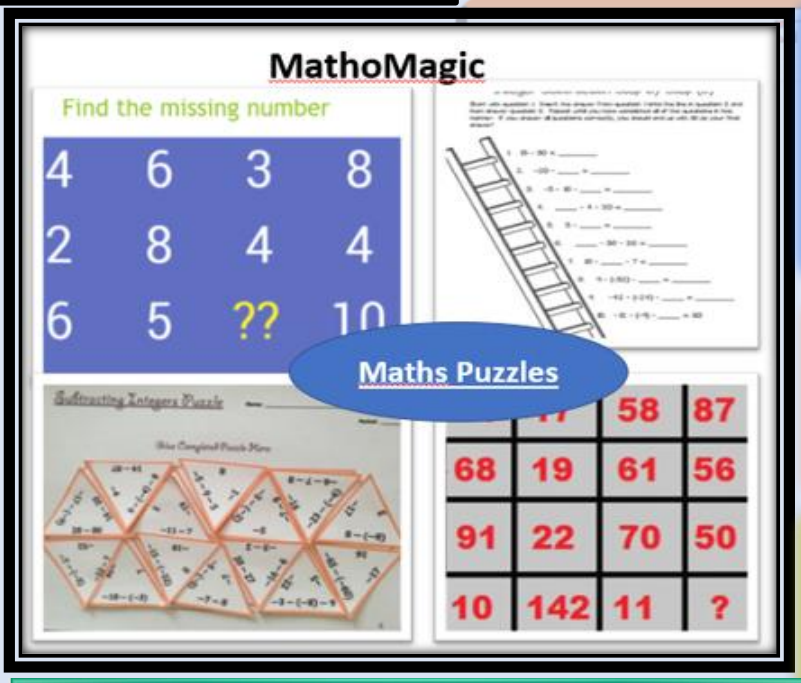
- **Nikhilam Sutra:** Multiplication of numbers which are nearby to 100 or 1000
- **Ekadhikena Purvena:** Squaring a number ending with 5

> The universal medicine for the soul is supreme reason and absolute justice, for the mind Mathematical and practical truth, for the body the quintessence, a combination of light and gold.
>
> ~Aryabhata

Aryabhata Club

Number Magic:
Formation of numbers with a combination of different angles.
Students were able to correlate Arithmetic with Geometry.

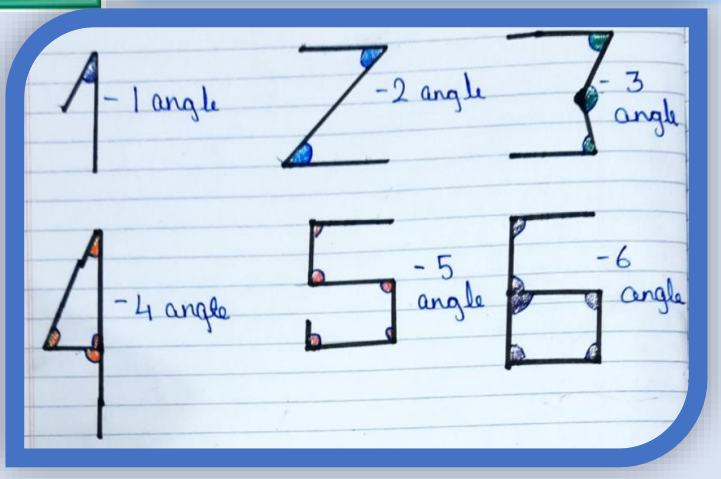




Students are able to develop their logical reasoning and computation skills by solving Maths Puzzles and are able to improve their presentation skills by presenting their own puzzles.

Students Developed creative thinking by making long paper strips from an A4 size sheet keeping the area same.

Students Developed observation skills and creative skills by designing Pop up cards using A4 size sheets.



THE CHANGING FACE OF MATHEMATICAL ASSESSMENT

Assessment of mathematical learning is a critical step in the learning process to identify students' strength and weakness and the learning gaps that they may have. It is an integral part of instructions as it determines whether the learning goals are met or not.

According to NEP 2020, today's students need to hone not only the academic skills but also life skills that will help them face the world that is continuously changing at an exponential speed. The aim of mathematical learning should be to help students think critically, to analyze, to make inferences and to use the mathematical concepts in real life

The Pandemic Times have taught so many new skills to all of us. So, as teachers, it's time to empathize with the learners and take an active part in making the process of mathematical learning and assessments fun filled and student friendly.

Every child has immense potential and as good teachers, we need to inculcate the right mathematical learning mindset. Students should not be mere knowledge accumulators but knowledge creators. It is our utmost responsibility to engage students positively in the learning process so that they are able to make sense of the problem and are not afraid to take up the non conventional methods of finding solutions. As teachers, we should promote this power of mathematical modeling and tell our students that there is no one perfect solution for any problem. As they brainstorm, they might get a simpler and better solution.

As it is rightly said that today is all about creating a better tomorrow, it is our responsibility to create a society which is not having Math Phobia

Anjali Sharma
(P.G.T Mathematics)

Textbooks vs E-Learning

Mathematics teaching has been facing the challenge of reducing the fear of mathematics among students at school level from a very long time.

With the changing times the role of technology in the academics of the students is also changing at a very high pace.

In last decade we have witnessed emergence of a large number of E-Learning Platform. These platforms are very popular among students and parent community and the popularity has increased many folds in pandemic times. Students are ditching their textbooks and following the digital platforms for better understanding of the concepts.

One of the major factor leading to this shift is the self learning pace which students can maintain while studying from the E-Learning platforms. The textbooks referred in the schools have not been updated from a very long time and are difficult for students to comprehend. The E-Learning platforms provide easy explanation to the complex mathematical concepts.

The quick self assessment and feedback provided by these platforms help students understand their learning gaps in a better way. The textbooks on the other hand have limited question banks and require extra efforts from students.

The Mathematics textbooks followed in schools are not inclusive, for example: A visually challenged student cannot access the images and diagrams provided in the book.

The world is taken over by technology and one has to keep pace with these advancements in order not to lag back.

Our textbooks also needs to be modified as per the changing times.

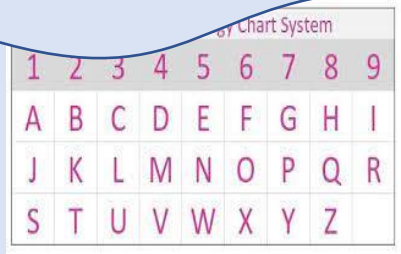
Vaishali Mittal (TGT Mathematics)

Numerology: The Ancient Mathematics

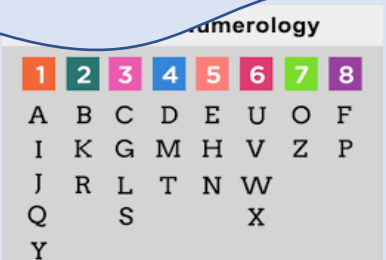
Numerology is the enchantment belief in the divine or mystical relationship between a number and one or more coinciding events. It is also the study of the numerical value of the letters in words, names, and ideas. It is often associated with the spiritual, alongside horoscopes and similar to religious arts. the word "numerology" is not recorded in English before 1907. The term numerologist can be used for those who place faith in numerical patterns and draw enchantment inferences from them, even if those people do not practice traditional numerology.

Pythagorean numerology

Tamil numerology



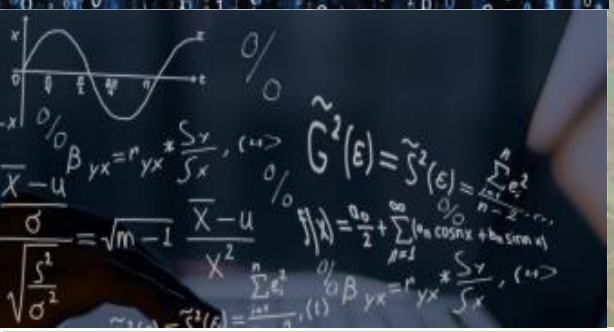
Kabbalah numerology



Chaldean numerology

Bhaanu 6B, Agrima 6B, Aadya 6B

AI & Coding: Mathematical Skills of 21st Century



The two main topics of Math that are used in the field of AI are data handling and probability. It is a key foundation to the field of machine learning, from notations used to describe the operation of algorithms to the implementation of algorithms in code.

Data handling structures are used when working with data, such as tabular datasets and images. Probability and Statistics are involved in different predictive algorithms that are there in Machine Learning. They help in deciding how much data is reliable, etc.

Coding is also dependent on Math. It mostly uses algebra and statistics. Algebra is used in computer programming to develop algorithms and software for working with math functions. It is also involved in design programs for numerical programs. Statistics is a field of math that deploys quantified models, representations, and synopses to conclude from data sets.

Shiva Priya Balaji – 8A

Now try converting these binary digits to English and find out its meaning:
01001101 01100001 01110100 01101000 01110011 00100000 01100001 01101110 01100100 00100000 01000001 01001001 00101110

ALUMNI SPEAK...

SARWAGYA PRASAD, B.TECH, IIT DELHI

The Universal Language

Like most JEE aspirants, my last two years in school were mostly dictated by my preparations for the entrance exam to IIT. While preparing for JEE, none of us including me probably thought philosophically about maths, but I think it was present in the back of our head. While solving problems, me and friends definitely didn't think about how we are 'opening the doors of our curiosity', but the thrill and enjoyment of finding the correct answer, or the moment of realisation when the process of getting the answer is revealed - all suggests that we did indeed appreciate the beauty of the Universal Language.

Ever came across the questions- "What is the use of Trigonometry?" or "What the hell is algebra and calculus?". People always wonder the purpose of Mathematics. Well, my answer is, it is everywhere. Math is in physics; math is extensively used in computer science; finance is absolutely nothing without math; even, nature is beautiful with math (think about the Fibonacci pattern in rose flower); some very well-known artists like Leonardo da Vinci even emphasize that the beauty follows the Golden Ratio. It indeed is everywhere. My point is simple- Don't run away from it, embrace it with open arms, and I assure you, Math will be much easier and won't scare you one bit.

SHUBHAM PALIWAL, TRADING ANALYST BARCLAYS

KUNAL AGARWAL, Ph.D. ECONOMICS

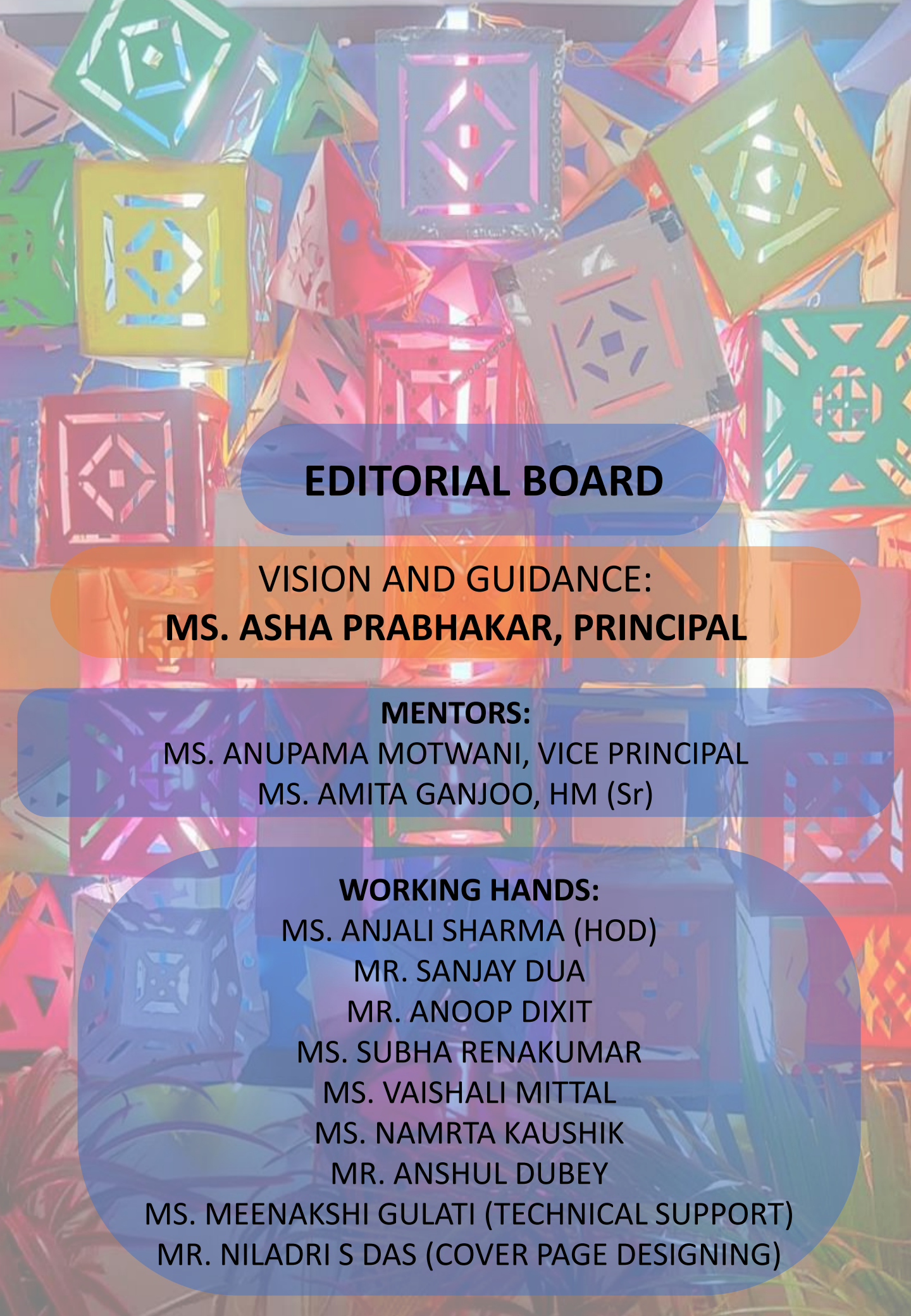
"PURE MATHEMATICS IS, IN ITS WAY, THE POETRY OF LOGICAL IDEAS."

The above quote precisely highlights the importance Mathematics holds in our everyday life. Mathematics is a tool. We can use it to describe and understand the world around us, and to make plans and predictions of what could or will happen so we can plan accordingly. It makes our life orderly and prevents chaos.

"WITHOUT DATA YOU'RE JUST ANOTHER PERSON WITH AN OPINION." W. Edwards Doming

Choosing honors in statistics and explaining data insights to business stakeholders and being the center stage in decision making forums is what I enjoy the most about my role. From calculating area under the curve to making histograms, nothing I learnt didn't have practical application. Like it is said, there is no branch of Mathematics, however abstract, which may not some day be applied to the phenomena of real world. So learn, explore and unravel the potential of numbers.

KHYATI SHARMA, CONSUMER ANALYTICS MANAGER, CITIBANK



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