स्वच्छ भारत स्वच्छ विद्यालय
एक राष्ट्रीय अभियान

Bal Bharati PUBLIC SCHOOL MANESAR

GLORIOUS 75
LOOKING BACK LOOKING AHEAD

Math

INTRODUCING

MATH NEWSLETTER 2022-23

GPSC Knowledge Empowers

HARYANA PROGRESSIVE SCHOOLS' CONFERENCE

QUALITY COMMITMENT EXCELLENCE IN EDUCATION NPSC

BRITISH COUNCIL International Dimension in Schools 2020–23

FIT INDIA

GREEN SCHOOLS PROGRAMME

NSA NATIONAL SCHOOL AWARDS 2022

FROM PRINCIPAL'S DESK

Dear Parents

Greetings to you all!

Mathematics is the science that deals with the logic of shape, quantity and arrangement. Math is all around us, in everything we do. It is the building block for everything in our daily lives, including mobile devices, computers, software, architecture (ancient and modern), art, money, engineering and even sports.

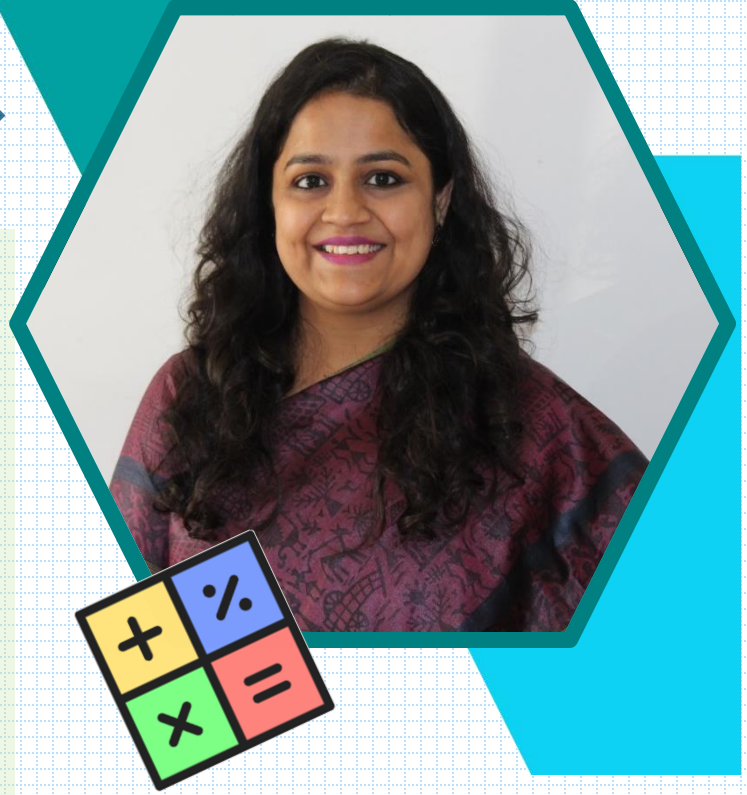
Mathematics is a subject of logic. Learning mathematics helps students to grow their problem-solving and logical reasoning skills. Solving mathematical problems is one of the best brain exercises. BBPS, Manesar provides ample opportunities to its students to participate in various Mathematical activities, interschool competitions, Maths Olympiad and many more. Let's have a glimpse of all the mathematics activities and events which were organised by **Maths Department of BBPS, Manesar.**

"Life is a math equation.
In order to gain the most, you have to know how to convert negatives into positives."
Anonymous

Mr. Harsh Kumar
Principal, BBPS Manesar

Bal Bharati PUBLIC SCHOOL MANESAR

FROM VICE PRINCIPAL'S DESK



" A clear vision, backed by definite plans, gives one a tremendous feeling of confidence and personal power."

Dear Parents

Greetings to you all!

Children of today face multifarious challenges which are very different from what we encountered in our by gone days. Hence it is our duty to help them stay focussed and composed. The release of the mathematics newsletter brings out the value of the enhanced knowledge in mathematics, where the students apply their mathematical perception and skill to solve a wide range of problems in their day to day activities. Although quick technological tools exist for expression of ideas in today's world, but significance of mathematics can never be denied.Our aim is to encourage creativity of thought among the students, so that they may learn and grow in every aspect. The school is an epitome of academic excellence and has been paving the way for the children to participate in a variety of critical thinking activities so that the students can grasp the mathematical concepts and integrate them with other subjects. Through this newsletter we have initiated not only to share the efforts of our students but also the boundless energy and intense commitment that is displayed by a team of fabulous faculty members in empowering our children with a joyful experiential learning.

Let us join hands in grooming the young minds so that they may walk the path of life successfully!

Mrs. Akanksha Sehgal Setia
Vice Principal, BBPS Manesar

" A clear vision, backed by definite plans, gives one a tremendous feeling of confidence and personal power."

Bal Bharati PUBLIC SCHOOL MANESAR

FROM HEADMISTRESS' DESK

Mathematics is not only a set of numbers and algebraic calculations used to measure or estimate something, but much more than that! Come to think of it, everything in this universe is associated with some great formulae and calculations which make it one of the most exciting subjects reflecting accuracy around miracles. We must acknowledge the fact that, today's digital world was not possible if mathematics wasn't there. I am sure everyone will agree to that. In other words, everything that is in and around us, has a direct relation to mathematics. A good example for latest advances in digital world, directly associated with this wonderful subject include, "Google maps works on algorithm which makes use of optimization model from math to tell you the best possible route for you to reach destination in time", another example could be "The probability of success in a particular project based on past data and available resources". The list is long and we encourage you to start observing things in relation to math - you will be surprised and fascinated with the subject. We, at BBPS Manesar are excited to release this Math Newsletter, with an aim to bring all of us closer to this real life subject, necessary for us to rise and realize the utilities. I am sure you'll appreciate the efforts put in by teachers and students in bringing this to you.

Please keep the suggestions and guidance rolling so that we keep improving by the day.

"Life is a math equation. In order to gain the most, you have to know how to convert negatives into positives.

Anonymous

Happy reading!

Mrs. REKHA BUDAKOTI
HM, BBPS MANESAR

Bal Bharati PUBLIC SCHOOL MANESAR

MENTOR'S WORDS

MATHS: CONCRETE TO ABSTRACT

We all believe that Maths is about formulas but as a student and a teacher of Mathematics, I researched and learnt that Maths is far beyond that. It is more about imagination and the ability to think creatively. It is to look at the problem with different perspectives and understand why we do, what we do. The focus should shift from 'How we do' to 'Why we do' . If we are able to incorporate this approach in our students, we can say that we have achieved the true purpose of learning mathematics. To achieve this goal our aim is to design activities in such a way that the abstract concepts of Maths take a concrete shape in the mind of the students.

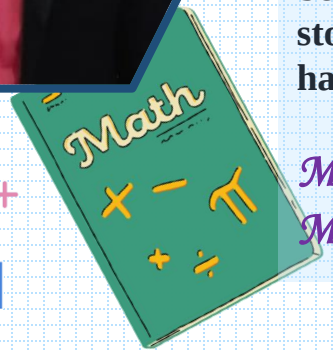
Ms. Anita Sharma
Mathematics Teacher (Primary Wing)

"In Mathematics the art of proposing a question must be held of higher value than solving it."
Georg Cantor

STATISTICS – WAY BEYOND THE BOUNDARY OF CLASSROOM

Mathematics is a very broad domain of study, encompassing virtually all quantitative disciplines whereas 'Statistics' is a specific discipline within it, which deals with the collection, analysis, interpretation and presentation of data. The main goal is to identify trends. The data need not necessarily be numerical. Statistics helps us in making flow chart by interpreting old data. Entrepreneur personalities use this data during risk management in order to figure out the probability of a certain risk being incurred by a company and how substantial the risk may be, it is useful in day-to-day life. It helps in designing the effective and proper planning of the statistical inquiry in any field. According to statisticians, in the last few years the global temperature is consistently increasing. The global anomaly in surface temperature might be the cause of an increase in the sea level, a decrease in Arctic ice and rise in weather-related catastrophes, including storms, floods and droughts. Therefore, statistics is useful for finding out the probability that a certain process may happen in the future.

Mr. Harpal Singh
Mathematics Teacher (Middle wing)



MENTOR'S WORDS

MAGICAL MATHEMATICAL ESSENCE

In all these years that I have taught and learned maths, I have come across a lot of students and kin who put maths under the tag of complex and time-consuming. These tags, however, never do any justice to the subject. Maths is much more than mere word problems and long-going calculations. The lessons of maths are life skills. It teaches us that every problem has a solution, so all that you have to do is figure out the right steps to take and be patient. In addition to this, the equations give the message that balance is very integral in life. You will be surprised, but there is a whole segment in mathematics that is known by the name of 'Moral Maths' which is a study of ideas drawn from mathematics that can positively impact moral decision-making and social behaviour. All in all, maths gives one the essence of life, all that one has to do is to look at life from a mathematical lens.

Mrs. Sonia Jatrana

Mathematics Teacher (Middle wing)

"Mathematics is not real but it is the only reality."

UNREVEALING FUTURE OF MATHS IN COMPUTER

Mathematics is always a phobic subject for most of the students. But the history of mathematics deals with the origin of discoveries on which we are relying today. We have never thought of the life which is existing nowadays. Every day we make many decisions that impact number of people around us, and we in turn are impacted by decisions that others make. This reciprocal impact makes it challenging to analyse situations that involve more than one participant. So here we are dealing with a virtual participant in the form of Cryptocurrency. We all are aware on the various mentions of Bitcoins. In order to work, 'Bitcoin' needs to overcome several major hurdles. First, it must make sure that transactions involving Bitcoins are secure. Bitcoin does this using something called 'elliptic curve cryptography' to ensure the security of transactions between owners of Bitcoins. Another problem is the potential duplication of Bitcoins. Imagine if you invented a digital currency yourself called the green blob currency and sent your friend 10 digital green blobs. You would have a big problem – your friend could simply cut and paste your green blobs and send everyone in your school 10 green blobs each. You can't stop the currency being duplicated and it would become worthless. This is a fundamental problem which needs to be solved before you can create a virtual digital currency. Bitcoin gets around this problem by using something called a 'blockchain' that makes it difficult or impossible to change, hack, or cheat the system.

Mr. Gagandeep Bhatia

Mathematics Teacher (Senior wing)

CLASS ACTIVITIES

PRIMARY DEPARTMENT

TINY SEEDS (SORTING ACTIVITY)

The activity helped the students to develop mathematical skills, such as ordering, problem solving and logical thinking by categorising seeds into different groups.

PATTERN ART

Mathematics is the study of patterns and relationships. The activity 'Pattern Art' helped the students to recognise basic patterns.

MATH-A-TALE (STORY ON ORDINAL NUMBERS)

Storytelling comes alive with puppets, therefore, the role play method of learning was introduced using puppets to understand how to name the positions of the objects using ordinal numbers.

PATTERN CARVING

The students made different 3D shapes like cube, cuboid, cylinder, cone using clay dough and toothpicks. Learning about shapes helped children to think critically and to identify visual information. With the help of this activity, children were able to recognize and name different shapes, sort them according to their attributes and to identify shapes that they see in their surroundings.

UNDERSTANDING DIFFERENT KINDS OF LINES

The students demonstrated the parallel lines and perpendicular lines by using their hands and understood the properties of these lines.

MONEY BUILD ON

Students used their self-made play money. They added the given numbers up to seven digits using this money . This activity strengthened the concept of addition as well as place value.

BRANCHING WITH CURRENCY

The students learnt the long division method using play money. They also learnt the concept of regrouping while division.

DIV- YA- GANESHA

On the occasion of Ganesha Chaturthi, the students made drawings of Lord Ganesha using geometrical shapes.

NUMBER DETECTIVE ACTIVITY

The activity helped the students to form different numbers as per given conditions using the number cards 1 to 9.

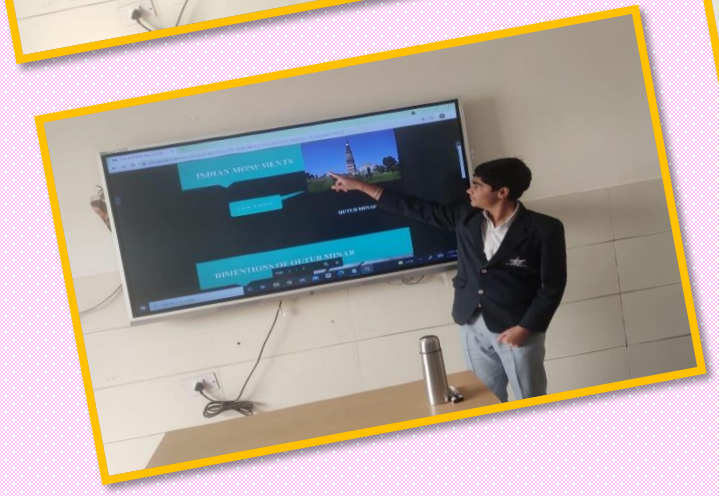
MIDDLE & SENIOR DEPARTMENT

FUNCTIONING WITH MATHS

The students made a working model based on the concept of 'Vertically Opposite Angles'. The activity involved the active participation of the students.

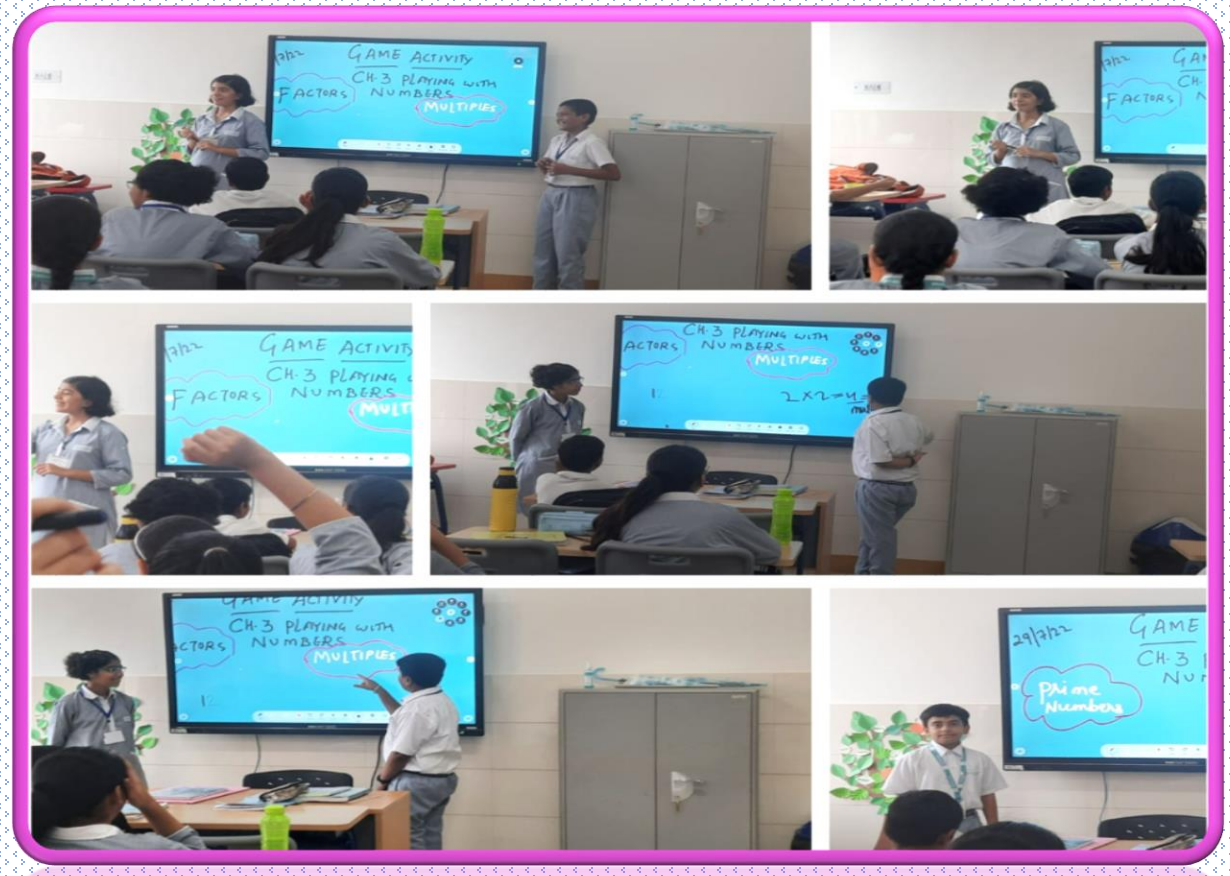
MATHS AND MONUMENTS

The students made presentations on the topic 'Maths and Monuments' using the concept of geometry, symmetry, golden ratio etc.



Teacher & Student Role Reverse activity

In this activity , the role of a teacher was reversed with a student wherein the students acted as teacher and taught a concept to the whole class and clarified students' doubts as well.

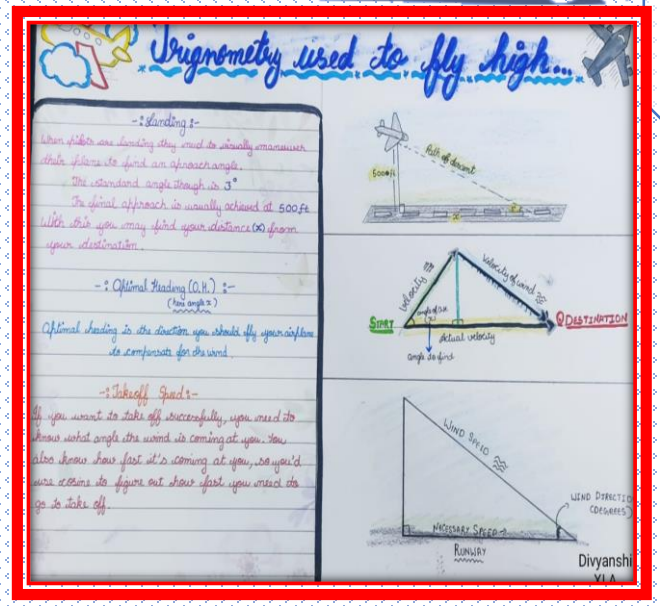


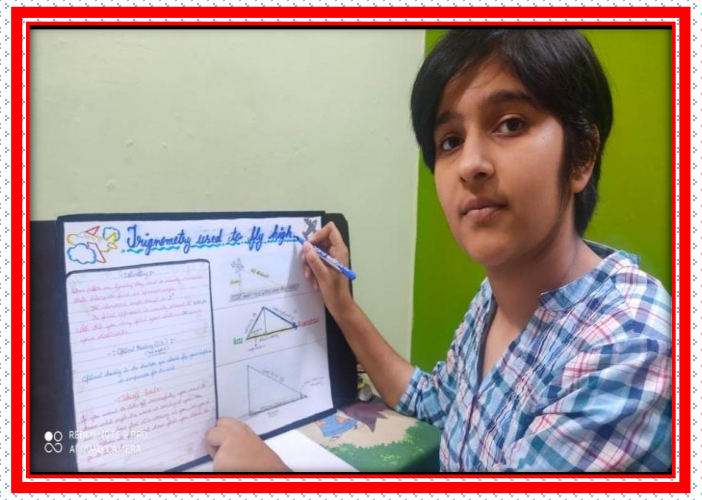
Factors & Multiples

Students learnt the concept of factors and multiples with the help of marbles/stones without using actual multiplication.

Flying Trigonometry

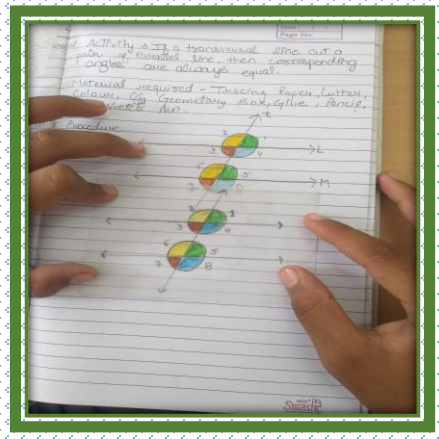
Divyanshi of grade 11 explained how Trigonometry is used in aviation using the concept of Pythagoras Theorem.



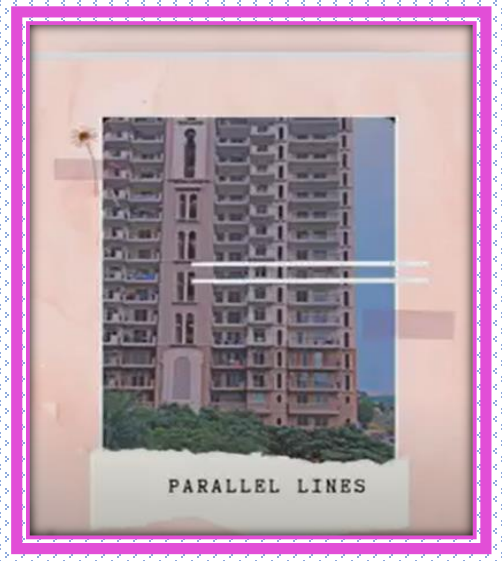


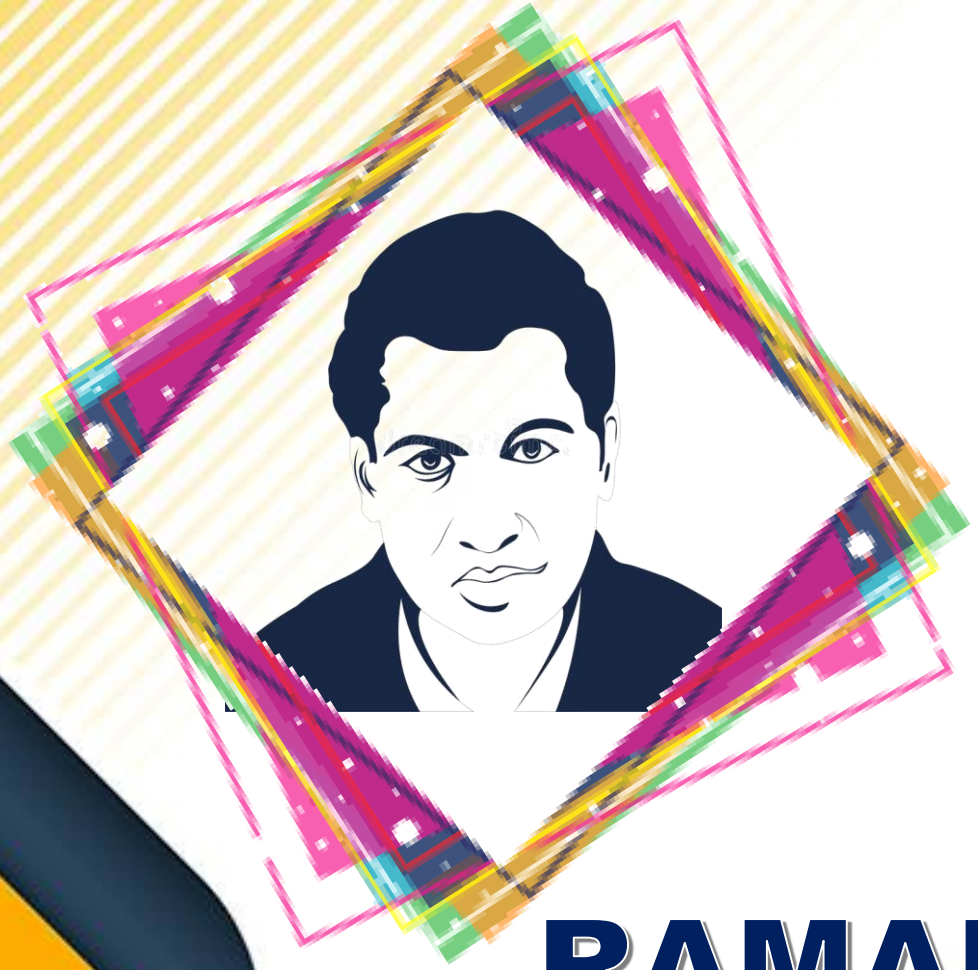
Maths Explorers

In this activity, the students verified the facts that corresponding angles & alternate angles made by a transversal line and a pair of parallel lines are equal.



Maths- A - Lens





RAMANUJAN CLUB ACTIVITIES

RANG-O-METRY

File Edit View Help

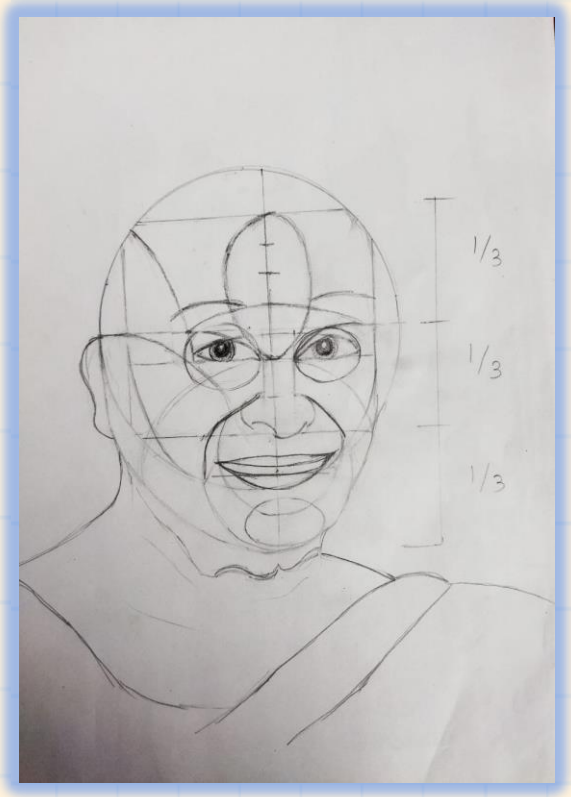
Through this activity, the students explored their imagination with colourful designs and identified patterns using different shapes.

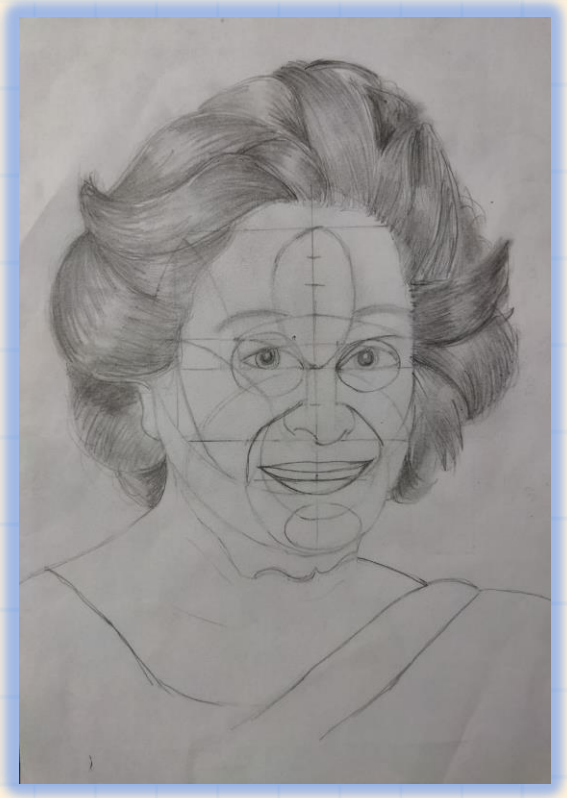
T-ANIMALS

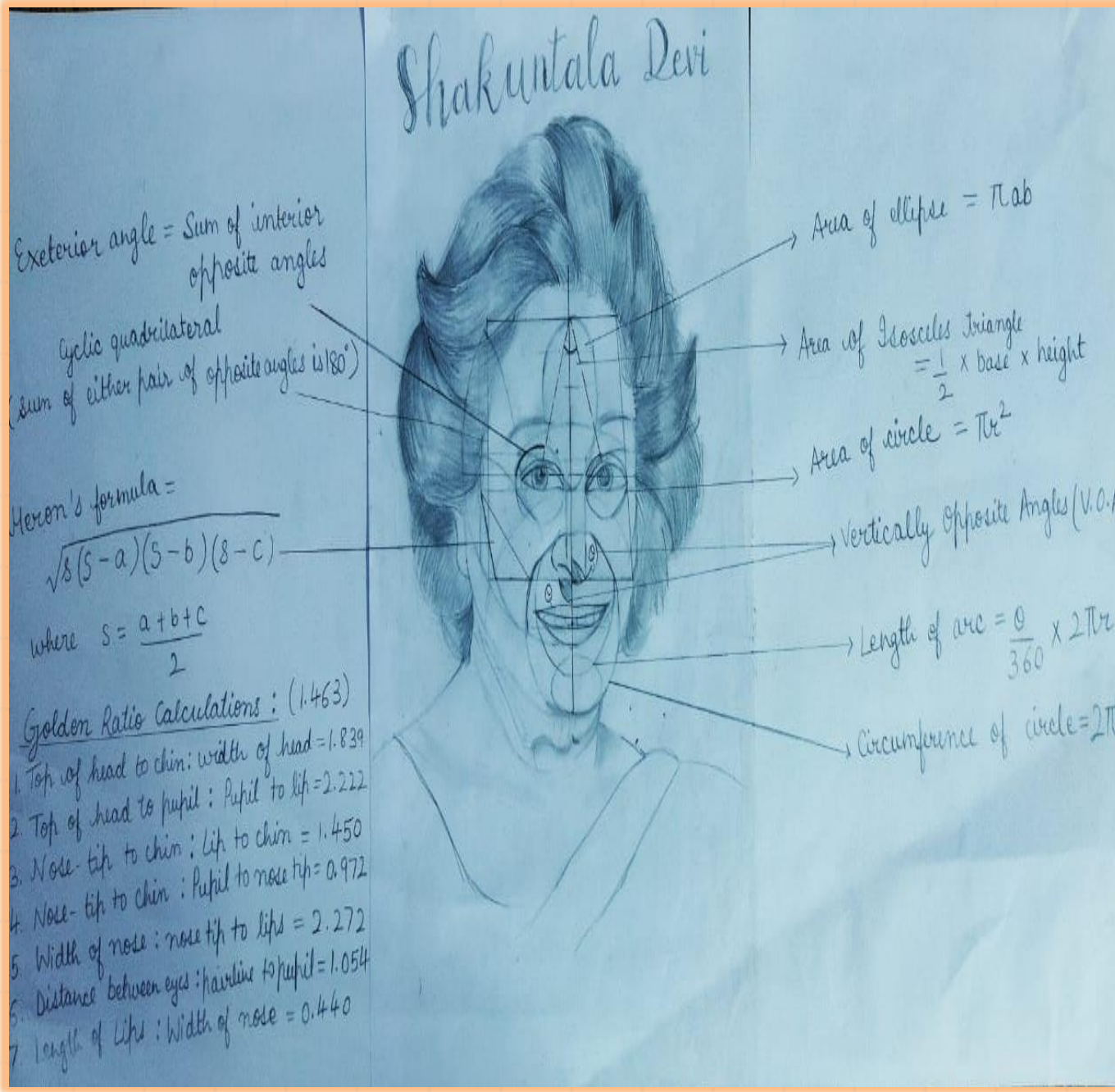
File Edit View Help

The students made their own tangrams. The same were used to make various animals.

PORTRAIT OF MATHEMATICIAN USING THREADS AND MATHEMATICAL FORMULA







Bal Bharati
PUBLIC SCHOOL

ACHIEVEMENTS

MATH INTERSCHOOL COMPETITIONS

CONGRATULATIONS

TRENDY THREADS

An inter school competition was held at BBPS Dwarka, where we bagged IIIrd position. Aarna Singh, student of class II used eco-friendly material and designed a dress using the mathematical concepts and operations

UNDERSTANDING SHAPES

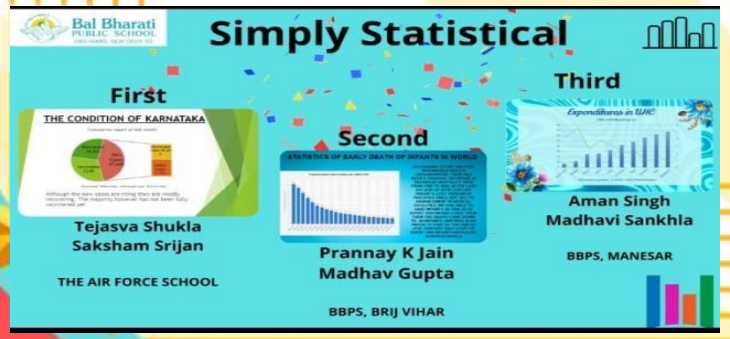
An inter school competition was held at BBPS Jharli, where we bagged the IInd position. Heerav Mittal of class II created a picture using the mathematical 2D and 3D shapes.

Math-a-Tale

An interschool competition was held at Blue Bells Public School, Gurgaon, where Shreyashi Gupta of class 1 secured 2nd position for narrating a story on the concept of TENS & ONES.

SIMPLY STATISTICAL

Aman Singh of class X and Madhavi Sankhla of class IX have participated in a competition 'Simply Statistical' organized by Bal Bharati Public School, Gangaram Marg. The students secured the 3rd position in this competition.



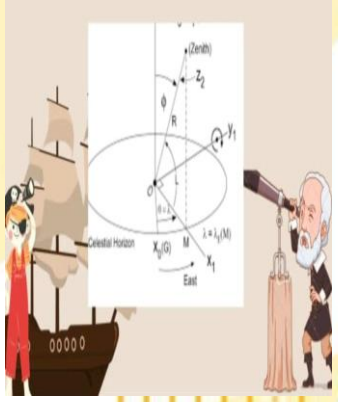
IMO OLYMPIAD

Pranshi Pandey of Grade 5 participated in SOF International Mathematics Olympiad and achieved 6th Zonal Rank in Haryana.

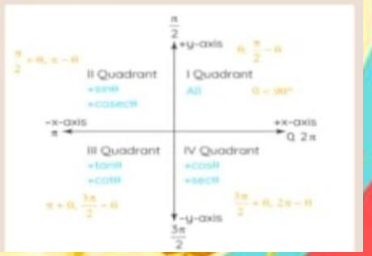
EXPLORIKA

CHHAVI (XI) and TAMANNA YADAV (XII) participated in a competition 'Explorika (The Story Behind)' organized by Bal Bharati Public School, ROHINI (New Delhi). These students secured 3rd position in this competition.

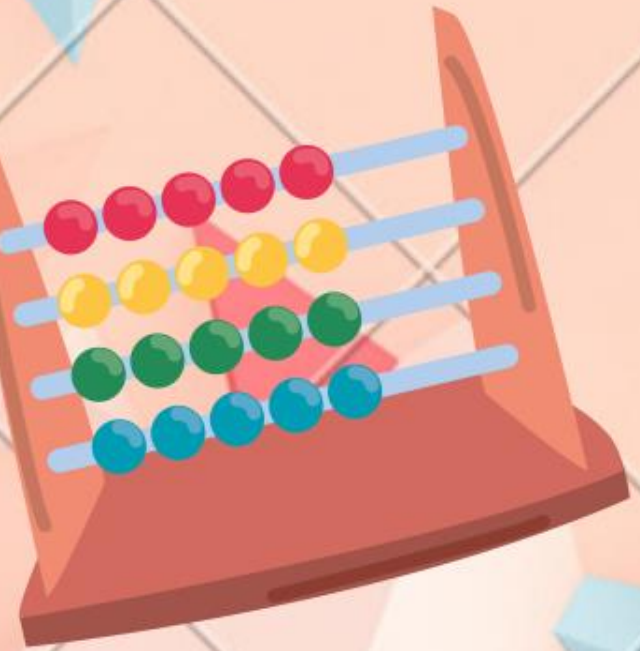
FIRST	• ARMY PUBLIC SCHOOL, DHAULA KUAN
SECOND	• MOUNT ABU PUBLIC SCHOOL, ROHINI
THIRD	• BAL BHARATI PUBLIC SCHOOL, MANESAR • BAL BHARATI PUBLIC SCHOOL, ROHINI



The angle θ is an acute angle (θ < 90°) and is measured with reference to the positive x-axis, in the anticlockwise direction. Further, these trig functions have different numeric signs (+ or –) in the different quadrants, which are based on the positive or negative axis of the quadrant.



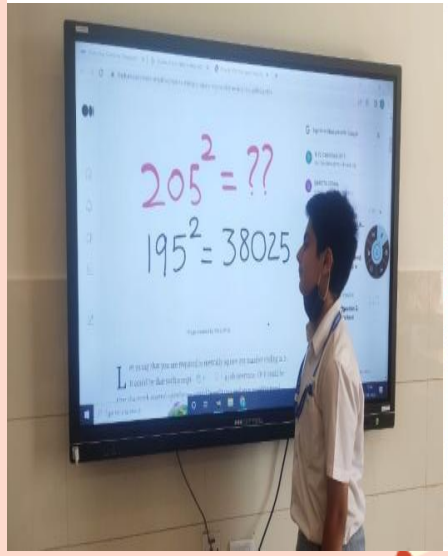
CRITICAL THINKING, VEDIC MATH & ABACUS



As the world is moving rapidly towards a technology-based future. Math Skills occupy a vital position in every child's academic growth. Higher Math skills enable students to build lucrative careers in STEM fields. That is why the school conducts Critical thinking, Vedic Math and Abacus classes on Saturdays.

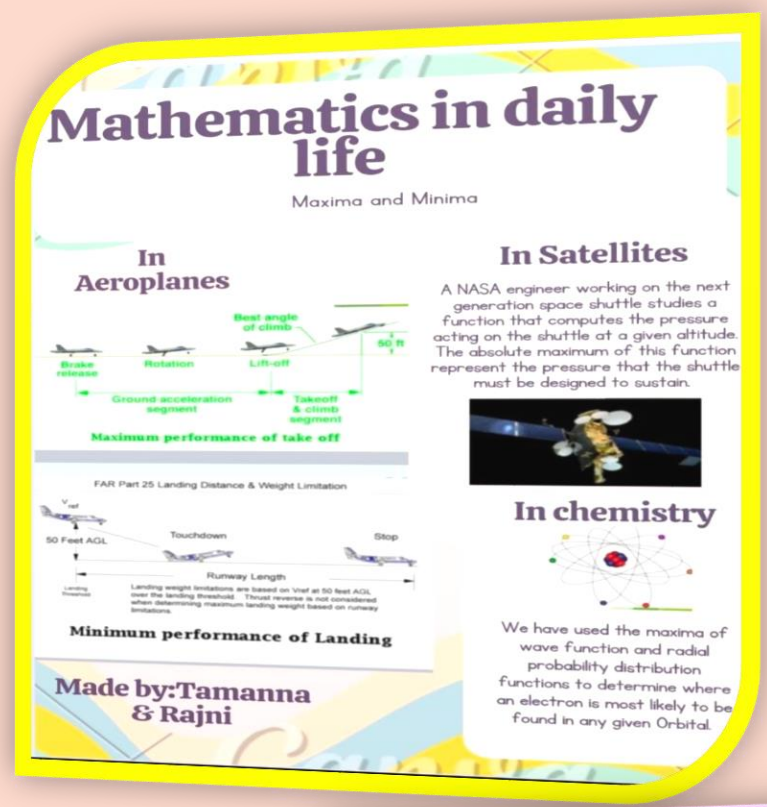
PRIMARY DEPARTMENT ABACUS CLASSES

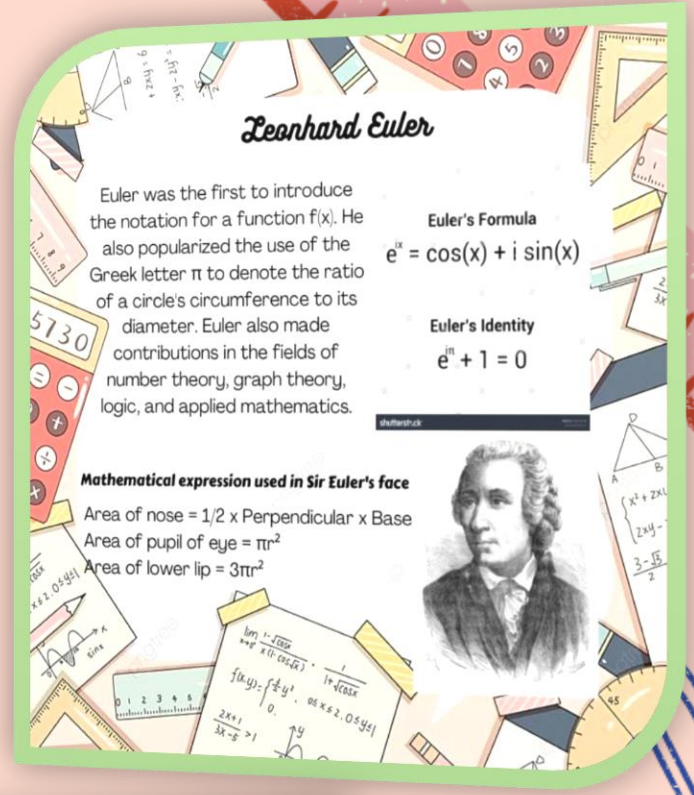
MIDDLE DEPARTMENT VEDIC MATHS CLASSES

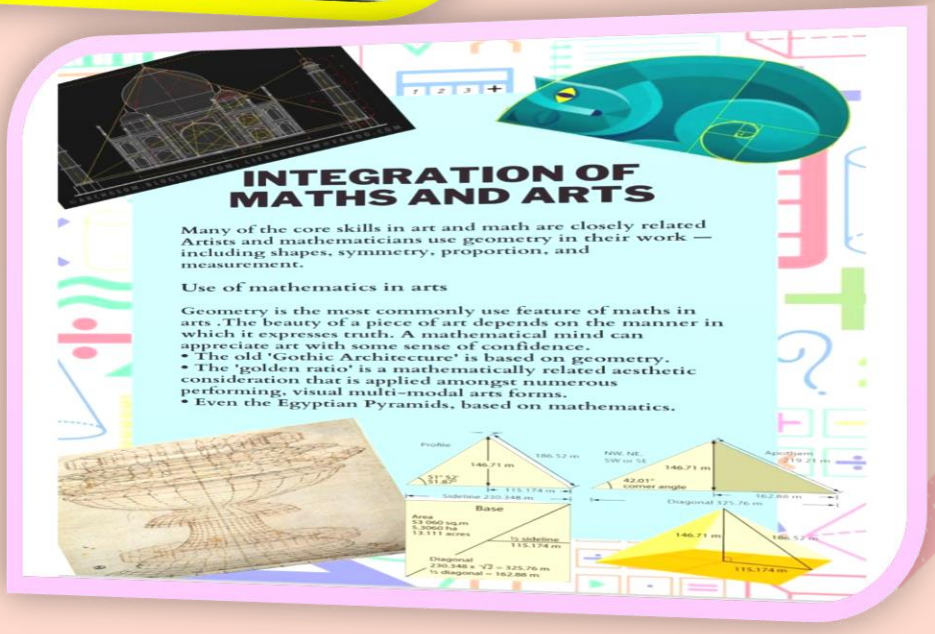


SECONDARY AND SENIOR SECONDARY DEPARTMENT

Students of class XI and XII made a Power Point Presentation on the topic mathematics used in daily life and also explained the Euler's Theorem.







INTEGRATION OF MATHS & ARTS

SUBTRACTION BLOSSOM

The students wrote the properties of subtraction and its result on the self made flowers.

PRIME FACTOR AQUARIUM

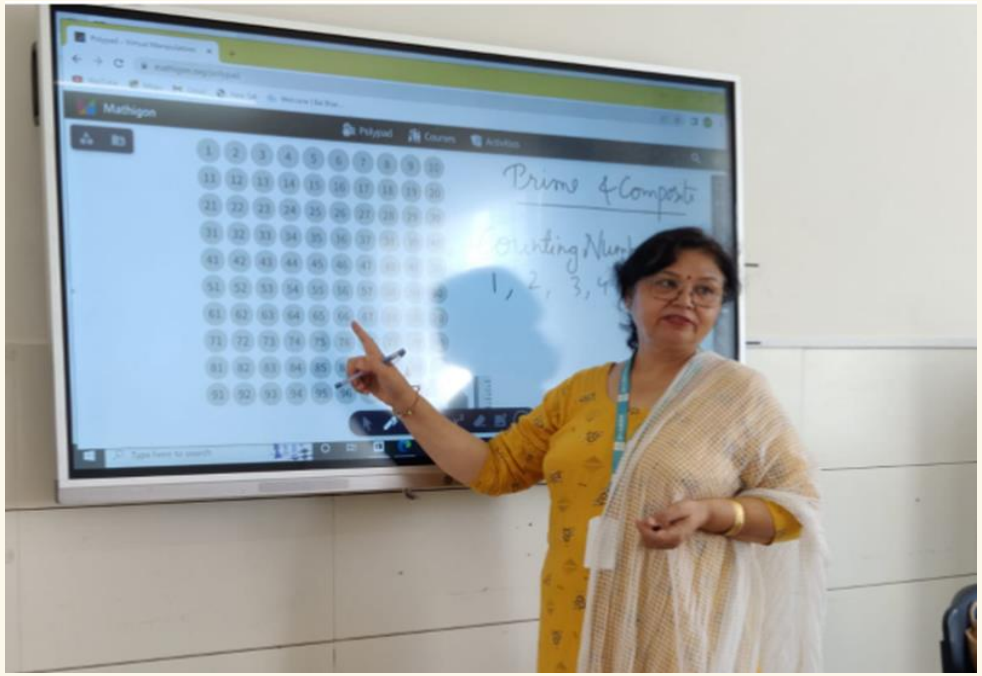
The students made a prime factor aquarium using their own imagination and creativity. The activity helped the students to identify numbers as prime or composite.

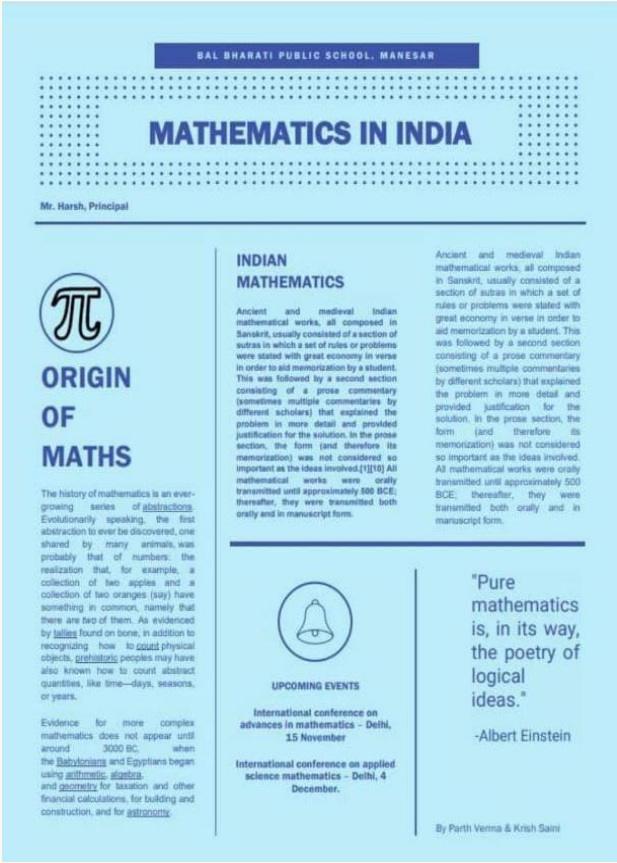
STRING ART ACTIVITY

In this activity, the students made some shapes on the board by using string, nails.

UNIFICATION OF MATHS AND IT

Various apps are being used to teach different topics using virtual manipulatives to make the children visualize the concepts like Mathigon, Maths Learning Centre, Didex etc.





BAL BHARATI PUBLIC SCHOOL, MANESAR

MATHEMATICS IN INDIA

Mr. Harsh, Principal

ORIGIN OF MATHS

The history of mathematics is an ever-growing series of abstractions. Evolutionarily speaking, the first abstraction to ever be discovered, one shared by many animals, was probably that of numbers: the realization that, for example, a collection of two apples and a collection of two oranges (say) have something in common, namely that there are two of them. As evidenced by tallies found on bone, in addition to recognizing how to count physical objects, prehistoric peoples may have also known how to count abstract quantities, like time—days, seasons, or years.

Evidence for more complex mathematics does not appear until around 3000 BC, when the Babylonians and Egyptians began using arithmetic, algebra, and geometry for taxation and other financial calculations, for building and construction, and for astronomy.

INDIAN MATHEMATICS

Ancient and medieval Indian mathematical works, all composed in Sanskrit, usually consisted of a section of sutras in which a set of rules or problems were stated with great economy in verse in order to aid memorization by a student. This was followed by a second section consisting of a prose commentary (sometimes multiple commentaries by different scholars) that explained the problem in more detail and provided justification for the solution. In the prose section, the form (and therefore its memorization) was not considered so important as the ideas involved.[1][10] All mathematical works were orally transmitted until approximately 500 BCE; thereafter, they were transmitted both orally and in manuscript form.

Ancient and medieval Indian mathematical works, all composed in Sanskrit, usually consisted of a section of sutras in which a set of rules or problems were stated with great economy in verse in order to aid memorization by a student. This was followed by a second section consisting of a prose commentary (sometimes multiple commentaries by different scholars) that explained the problem in more detail and provided justification for the solution. In the prose section, the form (and therefore its memorization) was not considered so important as the ideas involved. All mathematical works were orally transmitted until approximately 500 BCE; thereafter, they were transmitted both orally and in manuscript form.

UPCOMING EVENTS

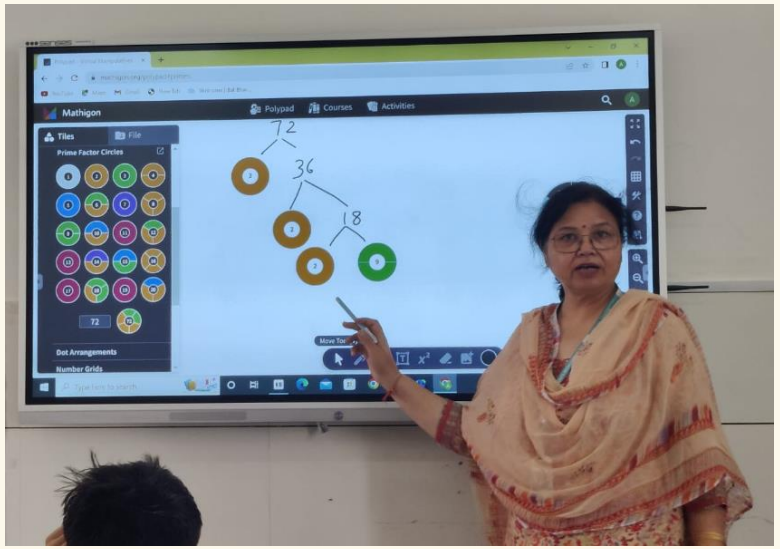
International conference on advances in mathematics – Delhi, 15 November

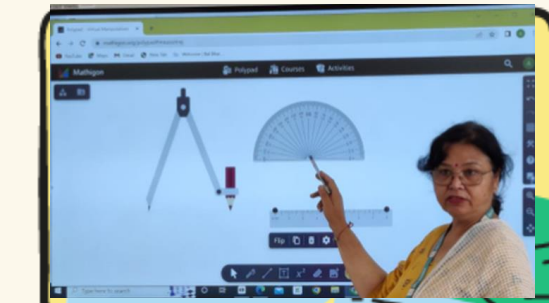
International conference on applied science mathematics – Delhi, 4 December.

"Pure mathematics is, in its way, the poetry of logical ideas."

-Albert Einstein

By Parth Verma & Krish Saini





Students' Write Up

Riddles

1. How can you take away I from 19 and the result would be the number 20?

2. There are two fathers and two sons. They walk into an Ice-cream parlour and each buys an ice-cream for Rs. 50. The total for all the ice creams was Rs. 150. How is that possible.

3. If a boy blows 18 bubbles, then pops 6 eats 7 and then He pops 5 and blows 1. How many are left?

4. You want to boil a two-minute egg. If you only have a three-minute timer (hourglass), a four-minute timer and a five-minute timer, how can you boil the egg for only two minutes?

Presented by :
Arunava Chanda Roy
Class – III D

Subtraction

more on top?
No need to stop!
More on the floor?
Go next door....
and get 10 more!
Numbers the same?
Zer's the game!

Presented by:
Vaibhav Vats
Class – II A

STUDENTS' WRITE UPS

UNSOLVED MATH PROBLEM SINCE 1742

Mathematical mysteries : Goldbach's Conjecture

Goldbach's Conjecture is one of the oldest and best-known unsolved problem in number theories of Mathematics. It states that:

Every even number greater than 2 is equal to the sum of 2 prime numbers.

4 =2 + 2
8 = 5 + 3
12 =7+ 5

6 = 3 + 3
10= 5+ 5
14 = 7 + 7

This problem is as simple as that but still unsolved.

Golbach's Conjectures has been verified using computer to be valid upto and including 4,000,000,000,000,000,000.

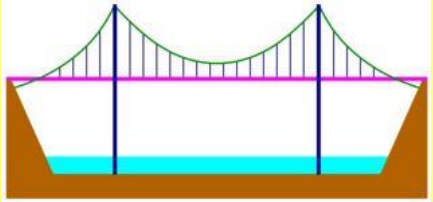
In March 2000, Bloomberg and Faber & Faber offered 1 million dollar prize to the person who could solve the problem, but nobody claimed it..

"Even today this problem is one of the mysteries in Maths.
A simple problem still doesn't have any solution."

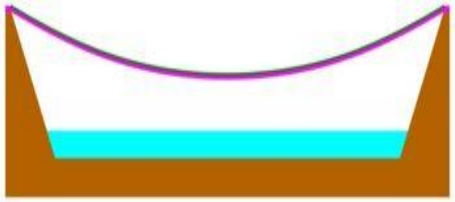
Presented by :
Pranshi
VI B

MATHS USED IN BRIDGE

Why is that the main suspension cables hang in a shape of a parabola, and not in a catenary, a similar 'u-shaped' curve?



Bridge 1: Catenary curve



Bridge 2: Suspension Bridge with parabolic curve

Despite their visual similarities, catenaries and parabolas are two very different curves, both conceptually and mathematically.

A catenary curve is created by its own weight, pulling down because of gravity.

The parabolic curves of the suspension cable are not created by gravity alone, but also by other forces: compression and tension acting on it.

Also the weight of the suspension cable is negligible compared to that of the deck, but it is also supporting the weight of the deck.

This is also another conceptual reason why the suspension cables are hung in a parabolic curve.

Presented by :
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XI

What is mathematics?
It is only a systematic effort of solving puzzles posed by nature.

- Shakuntala Devi