STUDENT STUDY PROJECT
DEPARTMENT OF MATHEMATICS

A PROJECT WORK
ON
VEDIC MATHEMATICS

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CERTIFICATE

This is to certify that the student study project work entitled **VEDIC MATHEMATICS** is a bonafide work done by the students of III MPC and MPCs A. Sandhya, B. Ganesh, K. Babitha, K. Rajitha ,B. Dhanush under my supervision for the award of student study project work in Mathematics, Department of Mathematics, Dr.BRR Government Degree College, Jadcherla.

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DECLARATION

We hereby declare that student study project work entitled VEDIC MATHEMAICS is a genuine work done by us under the supervision of K.Sindhu, Department of Mathematics, Dr.BRR Government Degree College, Jadcherla

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- **OBJECTIVES**
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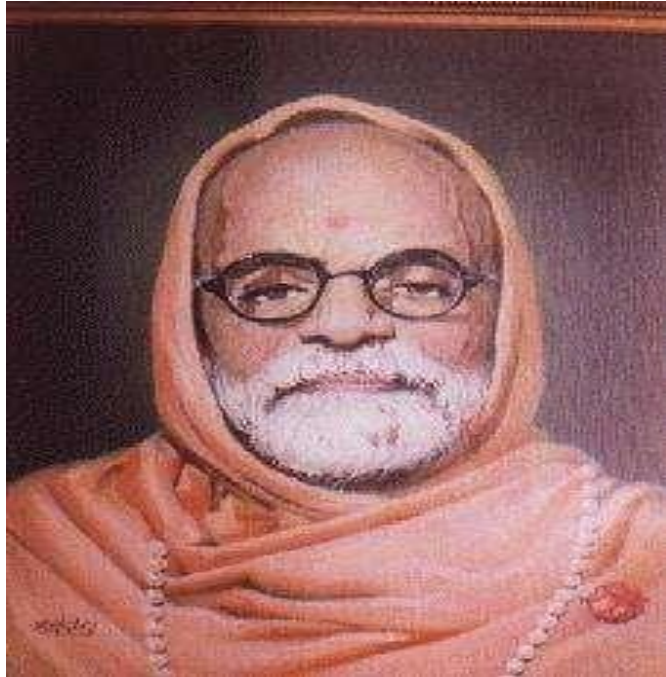- **CONLUSION**
- **REFERENCES**

Objectives

- To study the effectiveness of Vedic Mathematics technique for enhancing the performance of the students in solving mathematical calculations like multiplication.

- To study the effectiveness of Vedic Mathematics technique for enhancing the time taken by the students in solving problems

- To create awareness about the importance of Vedic Mathematics among stud*ents.*

INTRODUCTION:

- Vedic Mathematics is a collection of Techniques/Sutras to solve mathematical arithmetic's in easy and faster way. It consists of 16 Sutras(Formulae) and 13 sub-sutras (Sub Formulae) which can be used for problems involved in arithmetic, algebra, geometry, calculus, conics.

- Vedic Mathematics is a system of mathematics which was discovered by Indian mathematician Jagadguru Shrissss Bharathi Krishna Tirthaji in theperiod between A.D. 1911 and 1918 and published his findings in a [VedicMathematics Book by TirthajiMaharaj](#)

- Veda is a Sanskrit word which means 'Knowledge'.

- Using regular mathematical steps, solving problems sometimes are complex and time consuming. But using Vedic Mathematics General Techniques (applicable to all sets of given data) and Specific Techniques(applicable to specific sets of given data), numerical calculations can bedone very fast.

History Of Vedic Mathematics

- Shri Bharathi Krishna Tirthaji Maharaj was born in March 1884 in the Puri village of Orissa state. He was very good in subjects like mathematics, science, humanities and was excellent in Sanskritlanguage. His interests were also in spiritualism and mediation. In fact when he was practicing meditation in the forest near Sringeri, he rediscovered the Vedic sutras. He claims that these sutras/techniques he learnt from the Vedasespecially 'Rig-Veda' directly or indirectly and he intuitively rediscovered them when he was practicing meditation for 8 years.

Shri Bharathi Krishna Tirthaji Mahar later he wrote the sutras on the manuscripts but were lost. Finally in year 1957, he wrote introductory volume of 16 sutras which is called as Vedic Mathematics and planned to write other sutras later. But soon he developedcataract in both of his eyes and passed away in year 1960.

How Vedic Mathematics is Beneficial and What are the Advantages of Vedic

Mathematics

- Vedic Mathematics can definitely solve mathematical numerical calculations in faster way. Some Vedic Math Scholars mentioned that Using Vedic Maths tricks you can do calculations 10-15 times faster than our usual methods. I agree this to some extent because some methodsin Vedic Mathematics are really very fast.

  But some of this methods are dependent on the

  specific numbers which are to be calculated. Theyare called specific methods.

Multiplication in Vedic Mathematics

- Tirthaji Maharaj has classified tricks to multiply Numbers in [Vedic Mathematics](#) in Specific and GeneralMethods. Specific Multiplication Methods can be applied when numbers satisfy certain conditions

  like both numbers closer to 100 or numbers closer to

  each other or addition of last digits of both numbers is 10, etc. While General Multiplication Methods can be applied to any types of numbers. Depending on Specificand General Techniques, Multiplication in Vedic Mathematics are classified in the form of Sutras as below. Lets see the Vedic Mathematics Multiplication techniques.

- **Nikhilam Sutra (Specific Technique)**

- **Anurupyena Sutra (Specific Technique)**

- **UrdhvaTiryak Sutra and Vinculum Process(General Technique)**

- **EkayunenaPurvena (Specific Technique)**

- **Antyaordaske'pi (Specific Technique)**

Nikhilam Sutra:

- This is most simplest trick to multiply numbersusing Vedic Mathematics. I personally like thismethod a lot as multiplication can be done in mind as well.

- Using Nikhilam Sutra it is simpler to multiply numbers like 98 & 95, 997 & 987, 102 & 112, 995& 1008 i.e. the numbers which are closer to power of 10. This Sutra is a Specific method of Multiplication in Vedic Mathematics which showsshortcuts to multiply numbers which are closer topower of 10 (10, 100, 1000, etc.)

This will generate 3 cases:

- Numbers closer and less than power of 10.Example: 97 * 96, 994 * 992, etc

- Numbers closer and greater than power of 10. Example: 102* 108, 1004 * 1012, etc

- Numbers closer and lying on both sides of power of 10. Example: 102* 95, 1004 * 991,etc

METHOD

- **Nikhilam Type 1:**
- This type of Nikhilam Sutra can be applied when numbers slightly*
  less than power of 10 (10, 100, 1000, etc.).

- Formula used: (x-a)(x-b) = x(x-a-b) + ab
- **Nikhilam Type 2:**
- Numbers slightly* greater than power of 10 (10, 100, 1000, etc.).
- **Formula used:(x+a)(x+b)**
- **Nikhilam Type 3:**
- Numbers closer to* & present on either side of power of 10 (10, 100,
  1000, etc.). This type of Nikhilam will require understanding

  of 2.Vinculum Process.

- Formulas used:
- (x+a)(x-b) = x(x+a-b) – ab
- (x-a)(x+b) = x(x-a+b) – ab

Example1: 99 × 98

Check the base: Here base is 100 so we are allowed to havetwo digits on the right hand side.

∴ 99 – 01 (1 less than 100) i.e. 01 deficiency

98 – 02 (2 less than 100) i.e. 0 2 deficiency

Cross – subtract: 99 – 02 = 97 = 98 – 01 both same so first partof answer is 97

Multiply vertically – 01 × – 02 = 02 (As base is 100 so two digits are allowed in second part

So, 99 × 98 = 9702

Example 2 : 89 × 88

Step1:

Here base is 100

So, 89 – 11 (i.e. deficiency = 11)
88 – 12 (i.e. deficiency = 12)Step2:
 Cross subtract: 89 – 12 = 77 = 88 – 11(both same)So, first part of answer can be 77

Step 3:

Multiply vertically – 11 × – 12

Again to multiply 11 × 12 apply same rule
11 + 1 (10 + 1)

12 + 2 (10 + 2)

11 + 2 = 13 = 12 + 1 / 1 × 2 = 12 so, 11 × 12 = (1)

32 as only two digits are allowed on righthand

side so add 1to L.H.S. So, L.H.S. = 77 + 1 = 78

Hence 89 × 88 = 7832

Example 3: 988 × 999

Step 1: As the numbers are near 1000 so the base here is 1000 and hence three digits allowed on the

right hand side

988 – 012 (012 less than 1000) i.e. deficiency = 0 12

999 – 001 (001 less than 1000) i.e. deficiency = 00 1

Step 2: Cross – subtraction: 988 – 001 = 987 = 999 – 012

=

987

So first part of answer can be 987

Step 3: Multiply vertically: –012x – 001 = 012 (three digits allowed)

∴ 988 × 999 = 987012

CONCLUSION

- One can learn Vedic Mathematics from an early age and basic knowledge of multiplication Table helps a student to better grasp the subject. When you use Vedic Maths you use both Your left and the right brain hemisphere. The left side of the brain is the seat of language and Processes in a logical and sequential order. The right side is more visual and processes Intuitively, holistically, and randomly this boosts memory and concentration. Since you are doing calculations mentally without the use of pen or paper you are actually concentrating

- This develops the concentration abilitie

- Thus, Vedic Mathematics is nothing but few 'tricks' that helps in solving mathematical Calculations quite easily. It is a unique technique of calculations that is based on simple principles and rules, applying which, any kind of mathematical problems can be solved Orally

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