The Curious Hats
of
Vedic Maths

Vedic Mathematics for Schools Book 1

2nd Edition

James Glover

Super fast methods for calculation

Wizardly mental maths

Extension and support for Classes V - VII

For all who love number

Author's Preface

This book is designed for young and old who might enjoy learning and practising the Vedic methods of Mathematics. Vedic mathematics is unconventional and not very well known and so readers are invited to be open-minded in their approach. The system uses the nature of number and natural mental processes to provide quick and easy methods for all sorts of calculations. Many difficult-looking problems can be solved at lightning speed with the answer coming digit-by-digit and without stress or anxiety. When practised the methods give great delight and a sense of the magical quality of numbers. The amazing simplicity and wonderment of obtaining the answers so easily has led some to ask, is this maths or magic? The answer is that it is magic until you have understood how it works and thereafter it is both maths and magic.

It has been nearly twenty years since I wrote Vedic Mathematics for Schools Books 1, 2 and 3 and have long felt that a completely new format is needed. In those previous books I attempted to cover, from a Vedic standpoint, the topics common to many schools teaching maths to 11 - 13 year-olds. In these second editions my aim is just to introduce the main topics of Vedic maths relevant to children of a similar age and which can be used as either support or extension material for teachers or just for interest by anybody. Books 1 and 2 are designed to be workbooks in which there are spaces to write the answers. Book 1 covers the main basic methods of calculation which use the Vedic rules. They are not blanket rules as there are plenty of methods used for specific cases as well as covering the general case. Vedic mathematics is highly flexible in two senses. Firstly, there are often several ways to get to an answer, all of which are entirely valid and correct and the reader can then have the flexibility of choosing whichever one seems most appropriate. Secondly, each of the rules has many varied and different applications and uses. They are flexible in themselves.

Some of the Vedic rules are short yet fairly cryptic. I had the idea of representing each sutra by a hat with a particular design. Hence the title of the book. The design of each hat in some way reflects the meaning of the rule.

It is my sincere hope that, in working through this book you will come to enjoy and love working with number and with the sutras.

I am greatly indebted to my daughters Sophie and Amy - Sophie for designing and producing the wonderful illustrations for the hats as well as the cover design and Amy for her help in checking the answers. I would like to thank them for their support and assistance.

James Glover September 2013

Contents

Introduction

The Curious Hats of Vedic Maths is an introductory workbook on Vedic Mathematics. It leads you into some unique, enjoyable and very quick methods of working with numbers. There are full descriptions of these methods together with worked examples for you to follow and plenty of practice exercises. This is a workbook and you can write your answers into the spaces provided. You will find the answers at the back of the book to check your work. The problems and methods are suitable for any age but probably most apt for 11 – 13 year-olds, Indian Class VI – VII, UK Years 7 – 8. The aim is to introduce some of the Vedic mathematical techniques and not to cover the whole of the mathematics syllabus for 11 - 13 year-olds. So the book can be used for support material, extension material or simply by those wishing to find fast techniques for solving problems.

Veda

Vedic Maths is a system from India and, in modern times, was first written about by a spiritual teacher named Bharati Krishna Tirtha. Mathematics was his hobby and he discovered the system from his own studies of ancient teachings. The word *Veda* means knowledge and so Vedic Maths means *Knowledge Maths*. It is based on sixteen simple rules called sutras (pronounced "sootras") and a sutra is a thread of knowledge. Veda is also as the name for the ancient teachings of India, thousands of years old, which deal with all manner of aspects of life, both spiritual and worldly. In fact, this is the most common use of the name. Traditionally, these teachings were handed down by word of mouth and learnt by heart. This is called an oral tradition. It is therefore not possible to know their exact age. It is also possible that not all of these teachings are published anywhere. Be that as it may, Tirtha was a brilliant scholar and an inspiring mathematician. He left behind one volume giving illustrative descriptions of some applications of the sutras first published in 1965. Since then there has been an increasing interest in his system of Vedic mathematics and there are now several websites available to learn more about it.

Sutras

The sixteen sutras of Vedic mathematics are short, easily memorised, statements giving principles, patterns of working or rules of thumb for solving all sorts of mathematical problems by the fastest and easiest routes. The aim of the sutras is to provide easy methods involving mental working. For the most part each sutra covers a wide range of topics and this book deals with introductory applications which are then further developed in Book 2.

This book introduces you to methods of multiplication, division and subtraction using the Vedic sutras as well as other aspects of arithmetic and algebra. Many of the methods will be new to you and others you may know. There are many short cuts in maths which will be natural to you. For example, if you mentally add 465 and 299, most will find the easiest way is to add 300 and take 1 off, leaving 764. This is quite natural and not unknown. You will have used a deficiency, the fact that 299 is 1 less than 300. The Vedic sutras follow these natural processes and point them out. So there are special methods as well as general methods

The last chapter provides puzzles and problems which can be solved using the sutras. There may be nothing out of the ordinary in the way you solve these problems because the sutras are quite natural. You can answer the questions and the sutras indicate the way you think about the problems.

Numbers

Mathematics is based on number and numbers begin with unity at 1. The numbers are 1 to 9 and these, together with zero, make up all the numbers we use in everyday life. If you treat these as ten friends then there is no need to fear them. Just like good friends they are completely reliable and trustworthy. They do not change with time. No matter how big a number is, it is always made up of these nine and the zero. This is described by means of a story in Chapter 6.The symbols we all use for numbers have become universal. All children throughout the world learn them. But they originate, including the zero, from thousands of years ago in India. It is therefore fitting that this wonderful system of Vedic mathematics also comes from India. No one knows why there are nine numbers and a zero and that we use a base ten for our number system. Some say that it is because we have ten fingers on our hands. Others say that it follows an ancient description of the creation involving nine elements. In Chapter 12 is another story briefly describing these elements.

Magic Hats

Each sutra is represented as a 'magic hat'. Just as a nurse wears a hat or a jockey wears a hat which helps them think and act in a way suitable for their work so you can pretend to wear each magic hat to help remind you of the way to think.

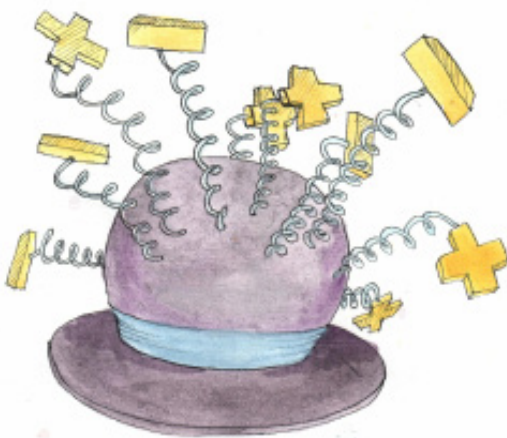The hats give a visual representation of the sutras.
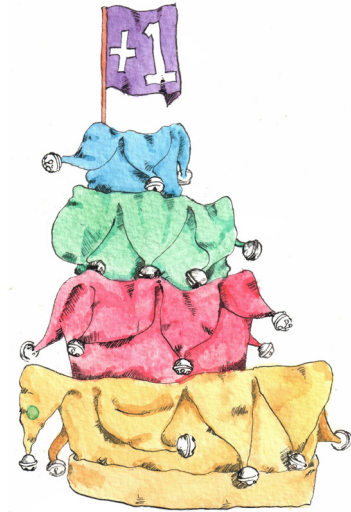
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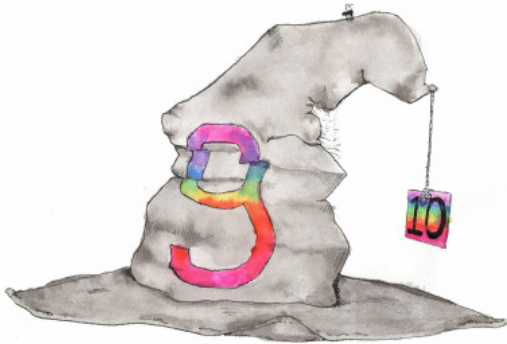
All from 9 and the last from 10

By one more than the one before
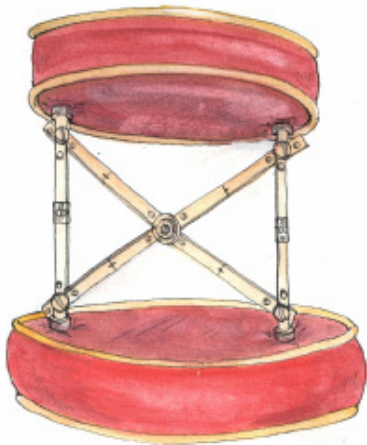
Vertically and Crosswise

By Addition and Subtraction

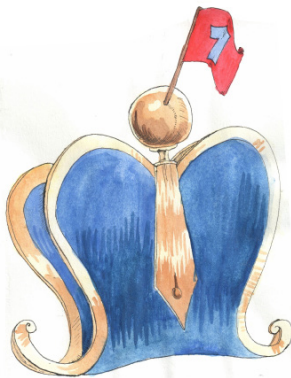**The Deficiency**

Proportionately

Osculation
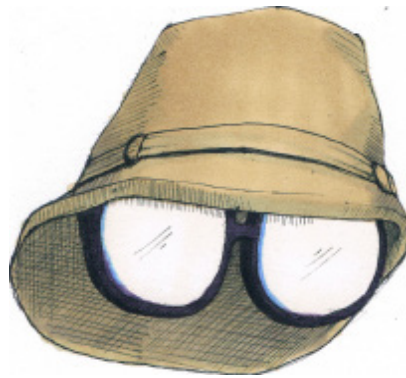
By Inspection

On the flag

Transpose and Adjust

When the total is the same, it is nought