

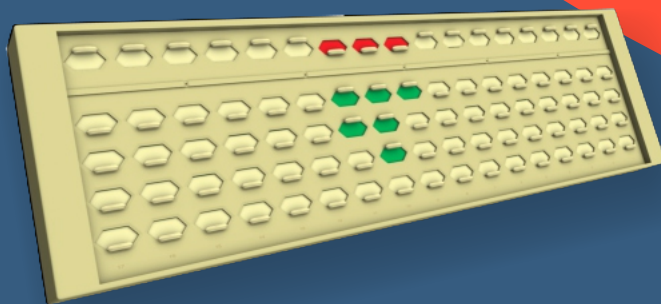
# Indian Abacus

The New Generation Abacus



# Parents Guide

Abacus Mental Arithmetic Education for Brain Skills



Level 1, 2 & 3

## **Greetings from Indian Abacus !**

Indian Abacus & Mental Arithmetic for children of the age group of 5 -13. The parents also are playing the key role in the 'skill transfer' and guiding the children in operating the abacus in the prescribed manner. This programme is boon to all children since this programme helps the children in enhancing the learning ability, Photographic memory, increasing speed, attaining accuracy and proficiency in all subjects. Obviously, as a parents that your contribution helps the children in discovering the genius within them.

Best Wishes.

**Indian Abacus**

## 1. Indian Abacus

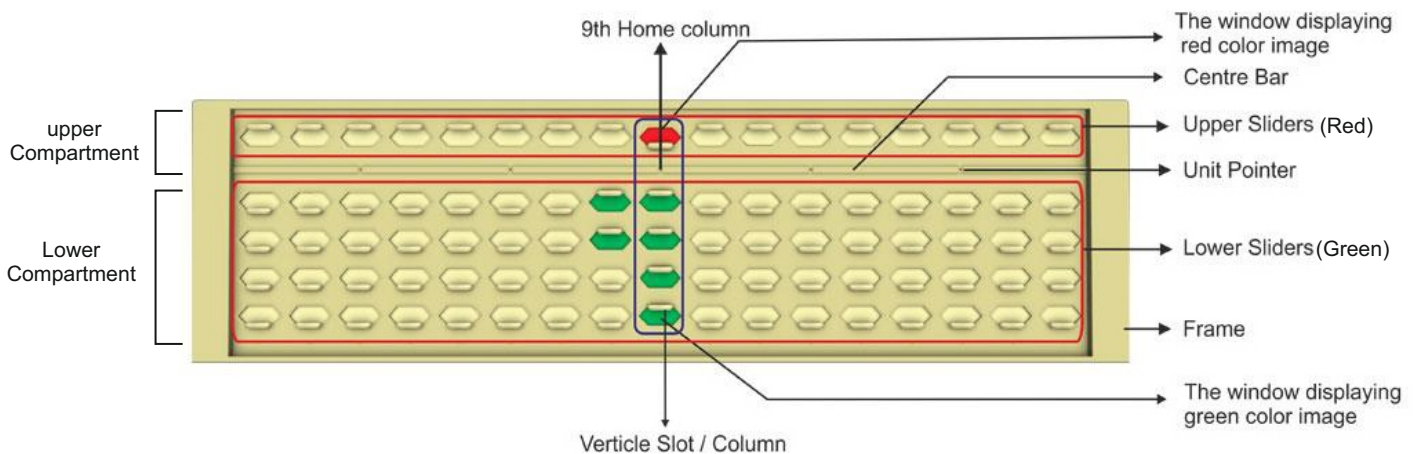
**What is Indian Abacus? How does it help the child ?**

**Indian Abacus**- This System uses the instrument called 'Abacus' to teach the children.

**What is an Abacus ?**

The Abacus is a calculating tool. It is a physical object and it is semi abstract and pictorial in representing numbers. Numbers take the form of Sliders.

## 2. Description of Indian Abacus



- The bar divides into 2 parts - Upper and lower compartment.
- The Sliders below the bar are called lower Sliders.
- The Sliders above the bar are called upper Sliders.
- There are 4 lower Sliders and 1 upper Sliders in one column.
- The value of one lower Slider is 1.
- The value of one upper Slider is 5.
- Only when Sliders touch the bar the abacus gets value.
- To add (+) the Sliders move towards the bar
- To subtract (-) the Sliders move away from the bar.
- The dots are called the pointers. (3,6,9,12,15) The middle pointer (9) is the units pointer.
- As we move right the value of the Sliders keep decreasing 10 times its counterpart on the left.
- As we move left the value of Sliders keep increasing 10 times its counterpart on the right.
- In the abacus, the operation are always left to right, digit by digit (for +, -, x & :)

### **3. What is Zhusuan (Abacus) & Mental Arithmetic study ?**

This program actually comprises of 2 parts namely

- a. Abacus calculation.
- b. Abacus Mental Arithmetic.

### **4. Abacus calculation is the method of computation using the Abacus.**

Abacus calculation is a Skill

A child goes through the following phases to master the Abacus.

- a. Cognitive Phase
- b. Acceptance Phase
- c. Practice Phase
- d. Proficiency Phase
- e. Autonomous Phase
- f. Expression Phase

### **5. Mind Math (Mental Arithmetic)**

Initially the child moves the Sliders in the Physical Abacus to do arithmetic sums. After 3 level, the Child imagines the Abacus in its mind and can do Abacus sums without use of the physical Abacus.

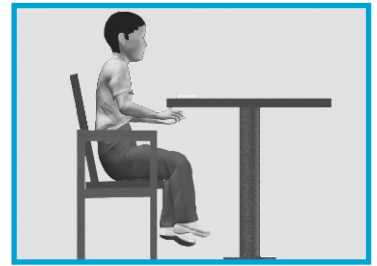
### **6. CURRICULUM - SPREAD OVER TO 8 LEVELS**

- a. Use of the Abacus.
- b. Proper technique's of working with the Abacus.
- c. Speed, recognition and writing of numbers.
- d. Computation using Abacus.
- e. Basic computation skills in addition & subtraction.
- f. Combining of Mental Arithmetic & Abacus Skills
- g. Basic computation skills in Multiplication & Division.
- h. Speed computation skill in Addition & Subtraction.
- i. Speed computation skill in Multiplication & Division.
- j. Sharpening of listening skills in Speed computation.
- k. Exercising both the Left & Right brain.

## 7. Basics in Abacus Learning

### a. Correct Sitting Posture:

- I. Sit  $\frac{1}{2}$  the space of chair
- II. Do not rest on the back of the chair
- III. Do not press elbows on to table, maintain some distance



*Sitting Posture*

### b Abacus Position:

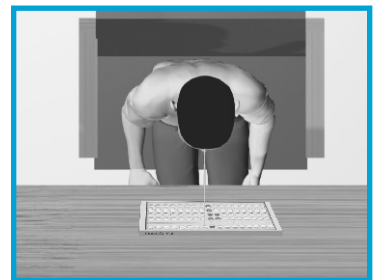
Before commencing, the abacus must be placed vertically on the left hand side

#### I. When working on the abacus

- a) Place abacus 4 fingers away from the edge of the table
- b) The unit point should be in alignment with your nose

#### II. When working out the book exercise,

- a) Place abacus below the row which you are doing
- b) The unit point should be placed below the sum which you are doing



*Abacus Position*

### c. Holding the Pencil:

**For Left Handers:** Hold the pencil in the left hand. It passes between the thumb and the index finger and out of ring and the last finger. Allow 2.5 cm projection at the end of Pencil.



*Left Handers*

**For Right Handers:** Hold the pencil with the last 3 fingers of the right hand, index finger and thumb pointing out. Allow 2.5 cm projection at end of the Pencil.



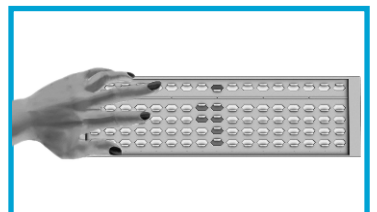
*Right Handers*

### d. Holding the Abacus :

Abacus must be held with thumb and last two fingers of the lefthand.

### e. Clearance of Abacus:

When sliders are not in position on the abacus then use the clearance method; use right hand index and thumb finger to hold the bar on both sides and sweep the sliders from right to left side.



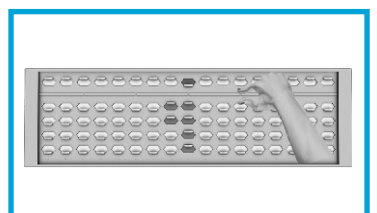
*Abacus Holding*

### f. Short Clearance:

Hold the bar using right hand index and thumb fingers together on either side of the bar and sweep the sliders from right to left, wherever it is required .

### g. Long Clearance:

Hold the bar using right hand index and thumb fingers together on either side of the bar and sweep the sliders from right to left in all the columns of the abacus.



*Abacus Clearance*

## 8. Lesson Plan - Starters (first Level)

Abacus- Addition & Subtraction	1 Digit - 3, 4 & 5 Rows Sums & 1&2 Digits 3, 4 & 5 Rows Sums.
Writing the values of Sliders	Single and Double digits Randomly.
Drawing sliders for the given value	Single and double digits Randomly.

Activities	Benefits
Speed Writing	<b>3 types (Direct View, Indirect View &amp; Left Handwriting)</b> 1234567890, 0987654321, 41233214, 14322341, 1928374655, 9182736455, 54535251.
	To improve speed of writing, neat & legible handwriting by writing normally, by writing without looking at what is being written & by using left hand.
Image Flash	<b>Showing slider images in a flash (1 digit - 10 rows)</b>
	To make children observe slider images as fast as possible to develop image memory.
Fingering Practice	<b>Practice of fingering movements on abacus.</b>
	Fingering exercises based on formulae to register formulae in children's mind & to make thorough with finger's usage and also to improve speed & accuracy.
Oral Sums Practice	<b>Two types (based on formulae and based on revision of formulae) 1D - 3&amp;5R - 1&amp;2Digits - 3,5,8&amp;10Rows.</b>
	To improve listening skills in children, to increase the speed of working out the sums & to get accuracy in sums at a jet speed.
Random Writing	<b>Listening &amp; writing skills (1 digit 10 rows).</b>
	To develop listening, analysing & writing skills in children.
Book Practice	To check the skills of accuracy & speed of children in when working out the sums.

## 9. Lesson Plan - Movers (second Level)

Abacus- Addition & Subtraction	1 & 2 Digits - 3 Rows & 1, 2 & 3 Digits - 3 Rows, 2 Digits - 3 Rows & 3 Digits - 3 Rows Sums.
Mental - Addition & Subtraction	1 Digit - 3 Rows.

Activities	Benefits
Speed Writing	<b>3 types (Direct View, Indirect View &amp; Left Handwriting) Tables</b> (5, 2, 4, 8, 3, 6, 9 & 7).
	To improve speed of writing, neat & legible handwriting by writing normally, by writing without looking at what is being written & by using left hand.
Image Flash	<b>Showing slider images in a flash (1&amp;2 digits - 10 rows)</b>
	To make children observe slider images as fast as possible to develop image memory.

Fingering Practice	<b>Practice of fingering movements on abacus (3 Types)</b> Continuous Nos, Fixed Nos & +50 & -50 & +100 & -10.
	Fingering exercises based on formulae to register formulae in children's mind & to make thorough with finger's usage and also to improve the speed and accuracy skills.
Oral Sums Practice	<b>Abacus:</b> 2 digits - 5 rows based on +50, +100, -50 & -100 1 digit - 5 & 8 rows, 1 & 2 digits - 5 rows, 2 digits - 3, 5, 7, 10, 12, 15 & 18 rows, 2 & 3 digits - 3, 5, 7, 10, 12, 15 & 18 rows. <b>Mental:</b> 1 digit - 3, 5, 8, 10 & 15 rows, 1 & 2 digits - 5 & 10 rows.
	To improve listening skills in children, to increase the speed in working out the sums & to get accuracy in sums with a jet speed.
Random Writing	<b>Listening &amp; writing skills</b> (2 digits 10 rows).
	To develop listening, analysing & writing skills in children.
Book Practice	To check the skills of accuracy & speed of children in when working out the sums.

## 10. Lesson Plan - Riders (third Level)

Abacus - Addition & Subtraction	2 Digits - 4 & 5 Rows & 1, 2 & 3 Digits - 4 & 5 Rows, 3 Digits - 2 & 3 Rows.
Mental - Addition & Subtraction	1 Digit - 4 & 5 Rows, 1 & 2 Digits - 3 Rows & 2 digit - 2 Rows.
Abacus - Multiplication (Tables)	1 Digit Multiply by 1 Digit.

### Activities

### Benefits

Speed Writing	<b>3 types (Direct View, Indirect View &amp; Left Handwriting)</b> Tables (5, 2, 4, 8, 3, 6, 9 & 7) Reverse.
	To improve speed of writing, neat & legible handwriting by writing normally, by writing without looking at what is being written & by using left hand.
Image Flash	<b>Showing slider images in a flash</b> (2 digits - 10 rows).
	To make children observe slider images as fast as possible to develop image memory.
Fingering Practice	<b>Practice of fingering movements on abacus (4 Types)</b> Continuous Nos/ Incremental Nos 1 - 100, Fixed Nos - Add 2 digits & Sub 1 Digit, Repeated Nos - Add 2 digits & Sub 1 digit & Horizontal Addition 123456789 - 1111111101 (9 Steps).
	Fingering exercises based on formulae to register formulae in children's mind & to make thorough with finger's usage and also to increase the speed & accuracy skills.
Oral Sums Practice	<b>Abacus:</b> 1 digit - 10, 12, 15 & 18 rows, 1 & 2 digits - 12, 15, 18 & 20 rows, 2 digits - 3, 5, 8, 10, 12 & 15 rows, 2 & 3 digits - 3, 5, 8, 10, 12 & 15 rows. <b>Mental:</b> 1 digit - 7, 10, 12, 15 & 18 rows, 1 & 2 digits - 5 & 10 rows.
	To improve listening skills in children, to increase the speed in working out the sums & to get accuracy in sums with a jet speed.
Random Writing	<b>Listening &amp; writing skills</b> (2 & 3 digits 10 rows).
	To develop listening, analysing & writing skills in children.
Book Practice	To check the skills of accuracy & speed of children in when working out the sums.

## 11. Instructions To Course Regarding Home Practice

- a. Ensure the children finish both the books before taking up their exams.
- b. 'Practice makes Perfect' this is the golden rule for Indian Abacus programme.
- c. Grading Exams are conducted once every year.
- d. National Competitions are conducted once every year.
- e. Participation and Merit Certificate are given to all participants of National Competition and International competition.
- f. Level test are conducted after completion of the respective term / level at class level.
- g. Certificates are issued for completion of each level.
- h. Certificates are issued for Grading Examination from Indian Abacus Global Head Office.

The Guideline has been introduced mainly to give the younger children more time to understand the concept and also learn the formulas with less stress and strain. The Abacus Tutor should other than making them work out the pages take time teach them the concepts of addition and subtraction.

## 12. What is the use of fingering /speed writing note book?

The activities like orals – the answers to oral questions, speed writing – writing numbers for Direct view, Indirect view and Left hand writing in the speed writing section of the book, random writing – listening to the called out numbers and writing the same are all done in the fingering/speed writing section of the book.

## 13. Oral Sums

- I. Orals are actually the numbers called out so that children practice sums on abacus or mentally to increase speed and accuracy in their calculations.
- II. Numbers Should be called out as per the syllabus depending upon the formula you taught.
- III. Instruct the children to compute the called out numbers on abacus by adding or subtracting and write the answers in the fingering / speed book in the given column.
- IV. Do orals practice using all the formulae taught previously. Refer Book A – page no. 76 (Direct)

## 14. Speed writing :

Speed writing section of the book is used to listen and write randomly called out numbers, oral sums practice and for speed writing practice of numbers. It is a very important exercise as it enables gaining speed and writing through coordination of fingers usage with the listening and practice. (Listening will improve the quality as well.)

Note:-

- a. The level Exam for Starters to Stars is conducted at the end of 3rd month / level.
- b. The format of the question paper is given at the end of Book 'B'.
- c. There is no time limit for the Question paper. Just record the time taken by the child.



- d. Fingering exercises (Basic Exercises) done in level2 must be done for at least 30 minutes.
- e. Oral sums (done in level 2) must be dictated for at least 45 minutes.
- f. Start teaching students Tables (2 to 9).

### 15. Formulae

	<b>+5</b>	<b>-5</b>	<b>+10</b>	<b>-10</b>	<b>+9 ~ +6</b>
	+4 = +5 -1	-4 = +1- 5	+9 = -1 +10	- 9 = -10 +1	+9 = +4 -5 +10
	+3 = +5 -2	-3 = +2- 5	+8 = -2 +10	- 8 = -10 +2	+8 = +3 -5 +10
	+2 = +5 -3	-2 = +3- 5	+7 = -3 +10	- 7 = -10 +3	+7 = +2 -5 +10
	+1 = +5 -4	-1 = +4- 5	+6 = -4 +10	- 6 = -10 +4	+6 = +1 -5 +10
			+5 = -5 +10	- 5 = -10 +5	<b>-9 ~ - 6</b>
1st Level			+4 = -6 +10	- 4 = -10 +6	-9 = -10 +5 -4
			+3 = -7 +10	- 3 = -10 +7	-8 = -10 +5 -3
2nd Level			+2 = -8 +10	- 2 = -10 +8	-7 = -10 +5 -2
			+1 = -9 +10	- 1 = -10 +9	-6 = -10 +5 -1

### 16. Abacus placement during level exam / competition / grading exam.

**For Right Handers :** Abacus must be placed vertically on the left hand side, pencil on the right hand side and Question paper must be placed in between both with the written part facing down words. When Course Instructor says **“Ready”** the students must hold abacus with Left hand, pencil with right and tip of the paper with the right hand. When Course Instructor says **“START”** the students must flip the paper over and place the abacus on top of the paper and start doing. The minute the CI says **“STOP”** paper must be flipped back to position pencil and abacus on the table and hands on the lap.

**For Left Handers :** Abacus and Pencil must be placed vertically on the left hand side.

### 17. Six Rules Of Reckoning With Both Hands

- a. Add in
- b. Take off
- c. Add upper and Less lower Sliders simultaneously
- d. Add Lower and Less Upper Sliders simultaneously
- e. Combination of taking off from Lower and adding up to a higher order column.
- f. Combination of taking off from Higher order and adding up to a Lower order column.

### 18. Formulae

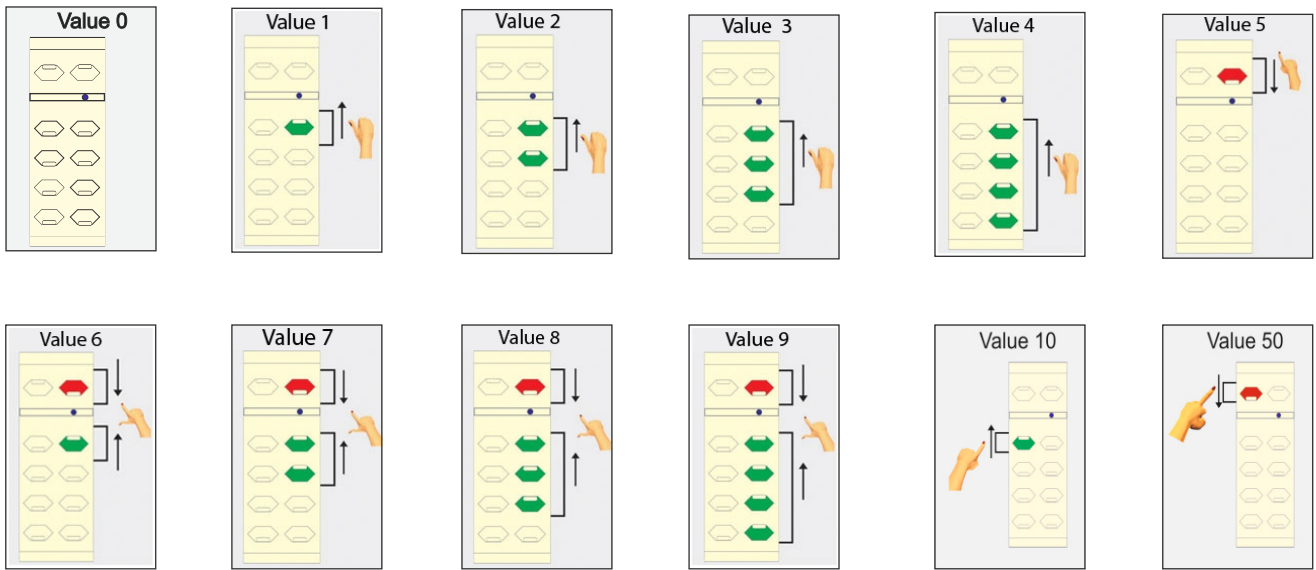
+5	-5	+10	-10	+9 ~ +6
+4 = +5 -1	-4 = +1- 5	+9 = -1 +10	- 9 = -10 +1	+9 = +4 -5 +10
+3 = +5 -2	-3 = +2- 5	+8 = -2 +10	- 8 = -10 +2	+8 = +3 -5 +10
+2 = +5 -3	-2 = +3- 5	+7 = -3 +10	- 7 = -10 +3	+7 = +2 -5 +10
+1 = +5 -4	-1 = +4- 5	+6 = -4 +10	- 6 = -10 +4	+6 = +1 -5 +10
		+5 = -5 +10	- 5 = -10 +5	<b>-9 ~ - 6</b>
1st Term		+4 = -6 +10	- 4 = -10 +6	-9 = -10 +5 -4
2nd Term		+3 = -7 +10	- 3 = -10 +7	-8 = -10 +5 -3
		+2 = -8 +10	- 2 = -10 +8	-7 = -10 +5 -2
		+1 = -9 +10	- 1 = -10 +9	-6 = -10 +5 -1

### 19. Image Flash

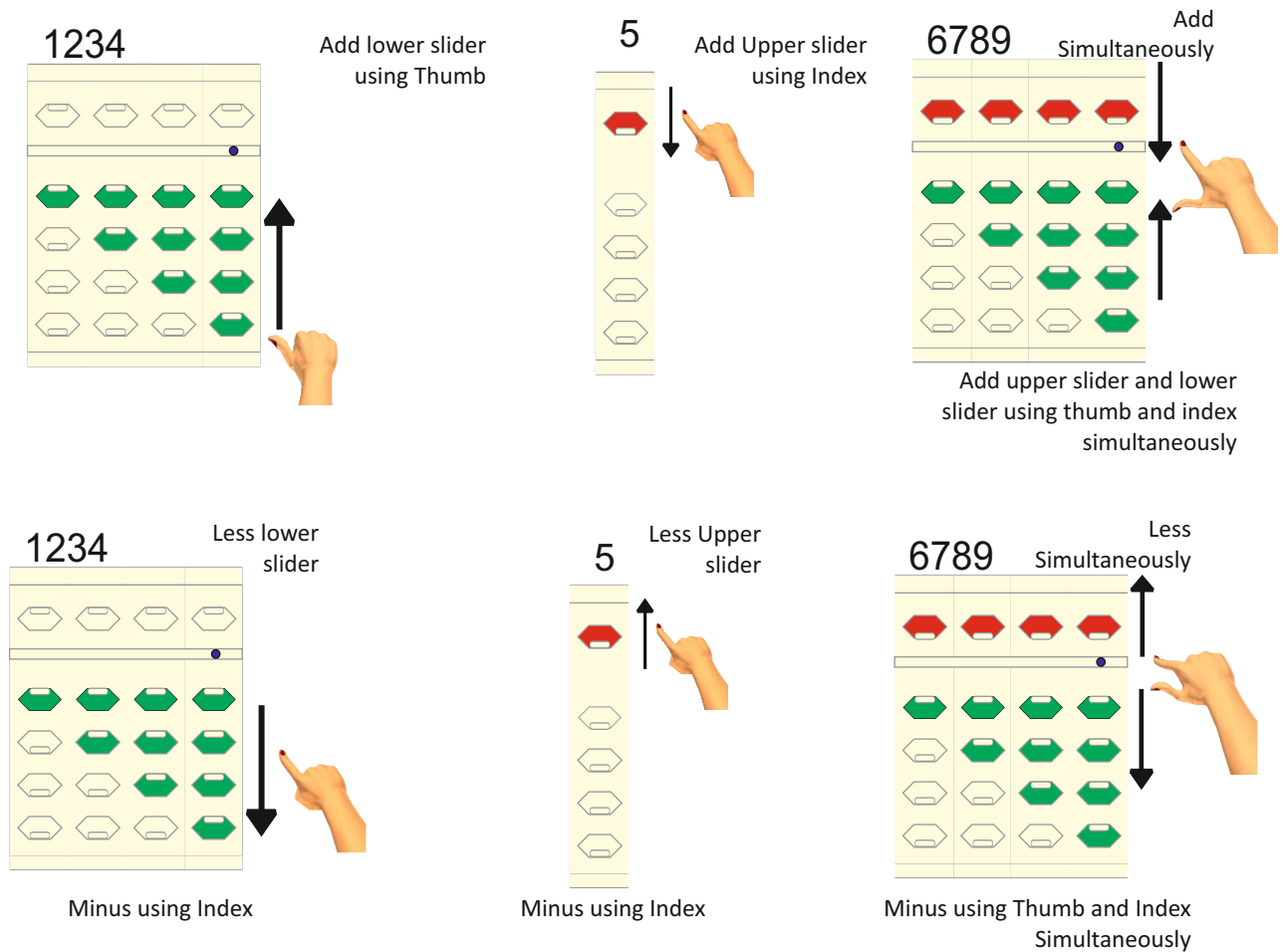
“Image Flash” is the activity which is done to give larger scope for the students to read the Abacus slider images representing values using which the students could have extended practice and also better assessment of their skills in reading the values of images at a speed. Flash Cards were used earlier, but with the advent of Indian Abacus program now the students have scope to view limitless number of images. With the usage skills to read the constantly changing image values, students experience better challenges which ultimately enhance their Visio-spatial memory skills, necessary to perform better in doing faster and accurate mental arithmetic skills by image of Abacus. Speed and accuracy in performing Mental Arithmetic by image of Abacus indirectly reflect their concentration & memory skills.

The Abacus Tutor during “Image Flash” session alerts the students to focus on the activity of reading the values of slider images. The Abacus tutor would after saying “Start” manipulates the sliders of the tool - “Indian Abacus – Tutors” continuously to make the students read the images one after the other and write down the number-value of each of such images flashed on the Tutor's Abacus and they should write the number values on their note books. The Tutor actually writes down a series of numbers – Single, double, triple, 4 digits, as the case may be, on a paper first and during the activity she would manipulate the sliders looking at the numbers she wrote down which the students read and write.

## 20. Value of Sliders

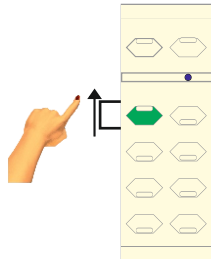


## 21. Manipulation with Right Hand

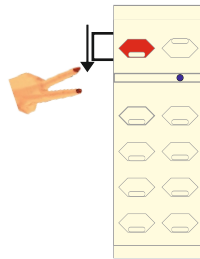


## 22. Manipulation with Left Hand

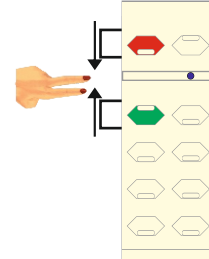
Add / Subtract  
Lower slider using Index



Add Upper slider  
using middle finger



Add Upper slider  
& Lower Simultaneously



## 23. Fill In Sliders And Values

5	
2	
7	

5	
4	
9	

5	
1	

5	
3	

5	
2	

5	
4	

5	
4	

5	
1	

5	
4	

5	
2	






5	
2	
7	

5	
4	
9	

5	
1	

5	
3	

5	
2	

5	
3	

5	
4	

5	
1	

5	
4	

5	
2	






5	—
2	
7	

5	—
4	

5	—
1	

5	—
3	

5	—
2	

5	—
4	

5	—
3	

5	—
1	

5	—
2	

5	—
2	

22. Fill in the box

SMALL FRIEND	
1	
2	
3	
4	
3	
2	
1	
4	
2	
1	
3	
4	
1	
2	
4	
3	
1	
2	
4	
3	

SMALL FRIEND	
	1
	2
	3
	4
	3
	2
	1
	4
	2
	1
	3
	4
	1
	2
	4
	3
	1
	2
	4
	3

SMALL FRIEND	
2	
	2
1	
	4
	1
3	
	3
4	
	2
2	
	1
3	
1	
	4
2	
4	
	3
	1
1	
	2

BIG FRIEND	
1	
2	
3	
4	
5	
6	
7	
8	
9	
2	
4	
1	
6	
5	
3	
8	
9	
7	
5	
2	

BIG FRIEND	
9	
	3
7	
	2
5	
8	
	1
3	
	6
2	
	7
	8
6	
	5
4	
	4
1	
6	
	3
9	

BIG FRIEND	
2	
	3
1	
	2
6	
4	
	1
3	
	6
5	
	7
	8
7	
	5
8	
	4
1	
9	
	3
2	

25. Relationship Between Numbers And Beads

A vertical yellow board with two rows of five hexagonal beads each. The top row has two empty beads, and the bottom row has one green bead. A blue pencil is shown to the right of the board. A large blue number '1' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has two empty beads, and the bottom row has two green beads. Two ice cream cones are shown to the right of the board. A large blue number '2' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has two empty beads, and the bottom row has three green beads. Three glasses are shown to the right of the board. A large blue number '3' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has two empty beads, and the bottom row has four green beads. Four gift boxes are shown to the right of the board. A large blue number '4' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has one empty bead and one red bead, and the bottom row has four empty beads. Five balloons are shown to the right of the board. A large blue number '5' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has one empty bead and one red bead, and the bottom row has one green bead. Six candles are shown to the right of the board. A large blue number '6' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has one empty bead and one red bead, and the bottom row has two green beads. Seven blue beads are shown to the right of the board. A large blue number '7' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has one empty bead and one red bead, and the bottom row has three green beads. Eight birds are shown to the right of the board. A large blue number '8' is positioned to the right of the board.

A vertical yellow board with two rows of five hexagonal beads each. The top row has one empty bead and one red bead, and the bottom row has four green beads. Nine blue beads are shown to the right of the board. A large blue number '9' is positioned to the right of the board.

## 26. Composition Of 5

<p><math>5 = 1 + 4</math></p>	<p><math>5 = 2 + 3</math></p>
<p><math>5 = 4 + 1</math></p>	<p><math>5 = 3 + 2</math></p>

## 27. Composition Of 10

<p><math>10 = 9 + 1</math></p>	<p><math>10 = 8 + 2</math></p>	<p><math>10 = 7 + 3</math></p>
<p><math>10 = 5 + 5</math></p>	<p><math>10 = 4 + 6</math></p>	<p><math>10 = 3 + 7</math></p>
<p><math>10 = 2 + 8</math></p>	<p><math>10 = 6 + 4</math></p>	<p><math>10 = 1 + 9</math></p>

Think Abacus

Join Indian Abacus

## Indian Abacus Private Limited

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