



Guidelines for
VIDYALAYA KALYAN SAMITI
including BaLA (Building as Learning Aid)



Department of Education
Government of NCT of Delhi

YUVA
JOYFUL
INTERESTING
MEANINGFUL
LEARNING


Bhagidari
THE CITIZEN-GOVERNMENT PARTNERSHIP

 **सर्व शिक्षा अभियान** 
सब पढ़ें सब बढ़ें

FOR REFERENCE ONLY

Guidelines for VKS including BaLA

10/2/08

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VIDYALAYA KALYAN SAMITI
including BaLA (Building as Learning Aid)



सत्यमेव जयते

Department of Education
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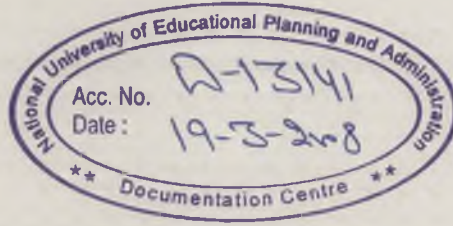


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SHEILA DIKSHIT
CHIEF MINISTER

GOVT. OF NATIONAL CAPITAL TERRITORY OF DELHI
DELHI SECRETARIAT, I.P. ESTATE, NEW DELHI-110002



Message

A few years ago, we had decided to create a platform for community partnership in schools. The Vidyalaya Kalyan Samiti under the Bhagidari initiative was therefore set up and I am extremely happy to know that a complete review of its functioning has been carried out and that a revised, stronger, VKS is now being implemented.

It is indeed heart warming that the VKS now has a component titled 'Bal Bhagidari' under which students are members of the VKS. To my mind, this initiative of giving a voice to students to participate in the functioning of their schools, not in an isolated group but shoulder to shoulder with adults, is perhaps the only one of its kind in the country. I have no doubt that with both students and the community as members, the VKS shall continue to perform its role of being a catalyst to bring about tangible and substantial improvement in all schools.

I wish the Department of Education, and all the Vidyalaya Kalyan Samitis and the stakeholders the very best of luck in their enterprise.

Sheila Dikshit
(Sheila Dikshit)



ARVINDER SINGH

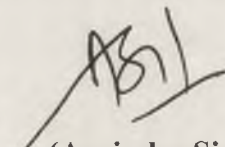
**MINISTER OF EDUCATION, TOURISM, SPORTS, ART &
CULTURE, LANGUAGES AND GURUDWARA
ELECTIONS & GURUDWARA ADMINISTRATION
GOVT. OF NATIONAL CAPITAL TERRITORY OF DELHI**



Message

It gives me great pleasure to introduce the manual on the reconstitution and guidelines governing the Vidyalaya Kalyan Samitees (VKS) of all the Government schools in Delhi. From the year 2007-08, the VKS of each school has been provided funds for maintenance and repair work, purchase of furniture and to create innovative learning situations in the schools under the Building as a Learning Aid (BaLa) initiatives. The manual has detailed guidelines of the BaLa ideas/activities which have been grouped under various sub-sections such as, *Understanding the physical World Around Us; Understanding the Passage of Time in Our Daily Lives; Dealing with Numbers; Ways of interacting with Language; Doing and Learning; Fun and Learning* etc. In bringing this manual the Department of Education has tried to equip the VKS of each school with all minute details of the work to be taken-up out of the allocated funds in order to develop the Government schools into a place of quality education in Delhi. I am extremely proud to be part of these initiatives to overhaul the school environment so that all students find these schools as better places for their all round development.

I wish all the success to the VKS in implementing these initiatives and helping the Department in its mission for quality education for all children.


(Arvinder Singh)



RINA RAY

SECRETARY (EDUCATION)
GOVERNMENT OF NATIONAL CAPITAL
TERRITORY OF DELHI

Message

The Vidyalaya Kalyan Samitis were set up under the Hon'ble Chief Minister's **Bhagidari** initiative a few years ago. They are Student Welfare Committees which provide a unique platform for the community to participate in the management of schools. Significantly, the VKS have been given substantial powers and funds at their disposal, as a consequence of which they have played a stellar role in improving all school buildings.

Alongwith the VKS, the Department of Education has achieved many major successes of late. The YUVA initiative has become the flagship scheme of the Department and it is an umbrella attempt to ensure that learning is joyful, interesting and meaningful. This will ensure that children develop a desire to go to school, and that they continue in school because they see a value in it. In keeping with the spirit of YUVA, a host of programme and activities have been carried out including orientation training programmes with all teachers which were personally addressed both by myself and the Director (Education), the creation of an animated version of the curriculum, upgrading the skills of students, and focusing on sports and all cultural activities. As a consequence, the Department has seen a phenomenal increase of almost 30% in the CBSE class X exams over the last two years alone, while the difference in the class XII results between the government and private schools is now only 1%. We are extremely proud that Delhi is the number one state in the National School Games 2006-07, having taken a total of 686 medals including 352 Gold. Maharashtra with 479 medals including 209 Gold was in second place. The Management Information System (MIS) of the Department is considered one of the finest within the Government in the country and picking up National Awards has become something of a habit for our I. T. Branch.

One of the major activities which the Department carried out was an exhaustive review of the VKS. While it was working very well, it is always desirable to evaluate a programme and to feed forward the feedback. A series of workshops were carried out in collaboration with the Bhagidari Cell of the Chief Minister's office which were facilitated by ACORD. The responses we received were immensely

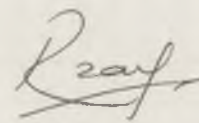


valuable and these have been incorporated in the revised VKS. Some of the major changes include the incorporation of the **Bal Bhagidari** concept under which students of a school are now members of the VKS. It is perhaps for the first time in the country that students are not just part of any separate Students Council but are actually members of the adult body, and they have a voice in the running of their school. The second major difference is that the total amount available under the VKS has been increased from Rs. 1.20 lakh per annum to Rs. 4.00 lakh per annum which is substantial. BaLA, which stands for 'Building as Learning Aid', is now a part of the VKS and we consider it a crucial component in our efforts to make the school a happy and joyful place for children. The beauty of BaLA is that children learn without being taught and they do so joyfully. I have seen children so excited in buildings with BaLA initiatives - they run from corridor to corridor, from pillar to pillar, from wall to wall, playing the games and learning valuable concepts.

Another addition in the new VKS is that all schools including boys' schools will be able to purchase Home Science equipments such as Oven, Toaster, Grill, Mixer, Grinder, Gas Stove, Gas Cylinder, utensils etc. This is part of our endeavour to introduce the cooking of healthy food in all schools and in doing so, nudge children away from junk food and towards healthy eating habits. It is also in response to the demand from the boys' schools to allow them to learn more about cooking and also to take up Home Science classes because of the enormous employment opportunities thereafter.

The revision of the guidelines, the development of the text, specially of the options under BaLA, and enhancement of the financial outlay, are the culmination of many months of hardwork by a dedicated team of persons. This will be followed by workshops with Principals and others concerned to ensure that the ideals and aims of the VKS are realized for the benefit of all our children in schools run by the Delhi Government, with the Bhagidari of the Community.

I convey my best wishes to all the stakeholders in our continuing efforts to **develop schools as a place of joyful, interesting and meaningful learning.**



(Rina Ray)



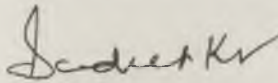
SANDEEP KUMAR

**Director
Directorate of Education
Govt. of NCT of Delhi**

Message _____

It gives me enormous pleasure that the efforts made by the Department of Education to improve the atmosphere in schools by empowering the Heads of Schools, has borne fruit. The revised guidelines to the Vidyalaya Kalyan Samiti (VKS) which include the concept of Bal Bhagidari and BaLa (Building As Learning Aid), are, to my mind, exceptional and I am confident that they will bring about visible and tangible improvements.

The Department of Education has been notching up many achievements and the revised VKS with its enhanced powers and outlay of Rs. 4 lakhs per school building is an important step in attaining yet another milestone. I would like to take this opportunity to congratulate all the officers who have contributed towards the successful implementation of this programme. I am very sure that these revised guidelines shall be implemented with the utmost commitment and dedication, and that the difference shall be visible in a very short time.


(Sandeep Kumar)

ACKNOWLEDGEMENT

The Vidyalaya Kalyan Samiti (VKS) has been comprehensively reviewed and for this we acknowledge the support provided by the Bhagidari Cell, Chief Minister's Office, and ACORD, which facilitated the review workshops. Grateful thanks also go to the large number of officials who have worked very hard to design the revised VKS guidelines including Dr. V.P. Singh, Shri M.H. Joshi, Shri S.R. Kataria, Shri P.R. Meena, Shri B.L. Yadav, Shri K.D. Akolia, Ms. K.D. Jassal, Shri R.P. Yadav, Shri L.S. Narayanan, Shri S.S. Singhal, Shri M.S. Dhaiya, Shri U.D. Ojha, Shri S. Verma, Shri R.K. Gupta and Shri G.P. Sharma.

A work of this magnitude could not have been possible without the constant support and guidance provided by Smt. Rina Ray, IAS, Secretary (Education), Shri Vijay Kumar, IAS, former Director (Education) and Shri Sandeep Kumar, IAS, Director (Education). We gratefully acknowledge the enormous contribution of Shri Kabir Vajpayi who has conceptualized and crystallized BaLA (Building As Learning Aid) and who has shared his ideas with us, of Unicef who has been with us throughout this initiative, of Ministry of Human Resource Development for their support under the Sarva Shiksha Abhiyan and of Planning Commission, Government of India for believing in this initiative.



Ankita Mishra, IAS
Addl. Director (Admn.)
Directorate of Education

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PART-A

1. IMPORTANT NOTE

2. AIM OF VKS

3. METHODOLOGY

4. COMPOSITION

I. Members

a. Convener

b. Parents - Teachers' Association

c. Students' Representatives (Bal Bhagidari)

d. Others

- RWA

- Government Nominees/MLA Representatives

- NGO Nominees

- Ex-Officio Members

e. Constitution of VKS (Table)

II. Term

III. Formation of New VKS

IV. Re-Nomination of Members

Govt. Child S. S.
XITCARI BIRHU
1978 1979 1980 1981



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1. IMPORTANT NOTE

The Vidyalaya Kalyan Samiti (VKS) is a School Welfare Committee which provides a unique platform for community participation in the management of a School.

The Vidyalaya Kalyan Samiti with effect from 2007-08 has major changes. All Conveners, HOS, DDEs and EOs are directed to please go through these instructions carefully.

- i) The total funds for every VKS has been increased to Rs. 4,00,000/- (Four Lakhs) per annum.
- ii) Out of this, Rs. 1,50,000/- is for maintenance works including minor civil and electrical works, horticultural works, other works and purchases alone as per instructions contained here.
- iii) Rs. 50,000/- is for replacement/repairing/ purchasing of Dual Desks alone as per these instructions.
- iv) Rs. 2,00,000/- is for initiatives under BaLA (Building as Learning Aid).
- v) In addition to this, funds are also provided to each VKS under Sarva Siksha Abhiyan for which separate guidelines have been issued.
- vi) The representation from PTA has been strengthened.
- vii) For the first time, students of the same school(s) shall also be part of the VKS (Bal Bhagidari).
- viii) New items such as purchase of fans and dual desks have been introduced.
- ix) It shall be insured that the Home Science Lab is set up under VKS in every school including Boys schools. This item is for every school. All other items are for every building.
- x) Under BaLA initiative all rooms in both shifts of School are to be covered e.g. Libraries and Laboratories etc. of each shift.

2. AIM OF VKS

“To achieve universalisation of education for all children upto the Secondary level, to provide learning that is joyful, interesting and meaningful, and to make schools centres of excellence by ensuring optimum use of available resources and infrastructure”.

3. METHODOLOGY

- i) To ensure the involvement and active participation of members of the community in the day to day activities of the school including all areas to be indicated under the Vidyalaya Kalyan Samiti.
- ii) To see that parents are equally part of the functioning of the school in which their children study.
- iii) To give an opportunity to students to have a voice in the running of their own school.
- iv) To provide a platform to teachers of the school to share in the governance of the school.

4. COMPOSITION

There shall be one VKS for every school building/campus comprising Teachers, Students etc. of both schools in case of double shift schools, of all three schools and four schools wherever these exist in the same campus with a common boundary wall. The RPVVs are not covered by these instructions.

I. Members

Each Vidyalaya Kalyan Samiti (VKS) shall consist of the following:

a. Convener

- i. The HOS (Head of School, usually the Principal or Vice-Principal) of a single shifted school shall be the convener of the VKS.
- ii. In more than single shifted school, the female HOS will be the Convener of the VKS and funds will be at her disposal.
- iii. In more than single shifted school the HOS other than Convener will be Co-convener.
- iv. In case of three school and four school campus the other HOS (2 and 3 respectively) shall all be Co-Conveners.

b. Parents -Teachers' Association

- i) For every single school building there shall be six representatives either from the school PTA or the Mother's Club, (wherever such club exists), of whom five shall be parents and one will be a Teacher. Out of these six members, three will be women
- ii) For every double shifted school building, there shall be eight (four from each school) representatives either from the PTA or the Mother's Club, (wherever such club exists). Six members shall represent the parents and two members will represent teachers. Out of these eight members, four will be women.

- iii) For three shifted school building there shall be nine (three from each school) representatives either from the PTA or the Mother's Club, (wherever such club exists). Six members shall be parents and three will be teachers. Out of these, five will be women.
- iv) For four-school campus there shall be twelve (three from each school) representatives either from the PTA or the Mother's Club, (wherever such club exists). Eight members shall represent parents and four members will represent teachers. Out of these twelve members, six will be women.

c. Students' Representatives

Keeping in view the introduction of Bal Bhagidari Concept there shall be students representation in all VKS as under: -

- i) Selection of students' representatives in VKS will be made by the Head of school concerned from amongst the best students.
- ii) Half of the students members of Co-Educational School shall be girls.
- iii) Only students actually studying in the school (s) covered by the VKS shall be elected.
- iv) In case of Middle school, student representatives will be from Std. VIII. In case of Secondary School they will be from Std. VIII and Std. IX and in case of Senior Secondary School they will be from Std. IX and Std. XI.
- v) For every single school building, four students from the same school shall be VKS members. Two student members shall be girls in case of Co-Educational School.
- vi) For every double shifted school building, eight students (four students from each school) shall be VKS members. Four student members will be girls in case the first shift is a girls' schools and two in case it is a Co-Educational School.
- vii) For three shifted school building, twelve students (four students from each school) shall be VKS members. Half the student members shall be girls in case any one school is a Co-Educational School.
- viii) For four-school campus, twelve (three from each school) students shall be VKS members. Half the student members will be girls in case any school is Co-Educational School.

d. Others

1. RWA

- i) Two representatives of Bhagidar local Residents Welfare Association (to be indicated henceforth as RWA) to be nominated by the Directorate of Education, Government of NCT of Delhi in consultation with the Bhagidari Cell of Government. of NCT of Delhi. Out of these one will preferably be a woman.
- ii) The two RWA nominees would be from amongst distinguished senior citizens such as retired teachers, lawyers, doctors, armed forces personnel, retired civil servants, judicial officers etc.
- iii) Out of these two members from RWA, one will be nominated as Chairman and the other will be nominated as Vice-Chairman.

2. Government Nominees/MLA Representative

- i) Two Government Nominees to be nominated by the Area MLA.

3. NGO Nominees

- i) One NGO Nominee of that area to be nominated by the Directorate of Education, Government of NCT Of Delhi in consultation with the District Deputy Director of Education.

4. Ex-Officio Member

- i) Concerned JE who is in-charge of that school (either from PWD or DSIIDC) will be an ex-officio member and he will attend at least one meeting in a quarter.
- ii) Copies of relevant extract of the minutes will be sent to the concerned Ex. Engineer
- iii) The Ex-Officio member will be counted for quorum and will also participate in discussion, but he will not have a voting right.

IMPORTANT

- i) A person shall not be entitled to be a member/office bearer in more than one VKS.
- ii) The Bhagidar RWA nominees, the two Government nominees, NGO nominee and parents' representatives shall not be employees of any school in Delhi.
- iii) All members have voting rights except the JE

e. Consitution of VKS

Sl. No.	Members	One School campus	Two School campus	Three School campus	Four School campus
1.	Convener	1	1	1	1
2.	Co-convener (In case of more than one school campus it shall be all other HOS')	0	1	2	3
3.	PTA Representative (Parent)	5	6 (3 per school)	6 (2 per school)	8 (2 per school)
4.	PTA Representative (Teacher)	1	2 (1 per school)	3 (1 per school)	4 (1 per school)
5.	Students Representatives	4	8 (4 per school)	12 (4 per school)	12 (3 per school)
6.	RWA Members (One Chairman one Vice Chairman)	2	2	2	2
7.	Two Govt. Nominees	2	2	2	2
8.	NGO Representative	1	1	1	1
9.	Ex-Officio Member (Concerned JE, who is incharge of that school)	1	1	1	1
10.	Total Members	17	24	30	34
11.	Required quorum (60%)	9	13	16	18
12.	Required majority for decision	5	7	9	10

II. Term

The term of the VKS shall be for a period of one year from the date of constitution or till 31st March of every year whichever is earlier, which may be extended for one more year by the Government.

III. Formation of New VKS

- i) After completion of the term, opening of a new school or merger or bifurcation of a school, a new VKS will be constituted.
- ii. The Convener will collect the prescribed proforma from district office or VKS Cell, Directorate of Education.
- iii. The Convener will contact the local area MLA and get the two names for Government nominees on the MLA's letter head.
- iv. One Co-Convener will contact local RWAs and get the names of the President and Secretary of the RWAs, or their nominees.
- v. One Co-Convener will also identify a local NGO and get the name of its nominee on its letter head.
- vi. The Convener will also get the name of the area JE (Ex-officio member) from concerned zonal PWD or DSIIDC office.
- vii. The Convener will fill up the names of students.
- viii. The Convener will also collect relevant information from Co-Convener(s) and will fill up in the proforma.
- ix. After filling up the proforma, the Convener will get it signed by concerned EO and DDE, and then put up to VKS Cell, Directorate of Education through the concerned zonal and district office.
- x. After obtaining approval from the Bhagidari Cell, VKS Cell of the Directorate of Education will issue orders regarding formation of VKS.

IV. Re-nomination of VKS members

- a) **Re-nomination of VKS members will take place in the following situations**
 - i) If any member including Chairman and Vice Chairman shows inability/unwillingness and or resigns from the membership.
 - ii. If any member dies.
 - iii. If any member, despite receiving meeting notices or being informed by any other means of communication, remains absent in three continuous VKS meetings without any advance information to the VKS.
 - iv. If the concerned JE (Ex-Officio member) is transferred.
 - v. Change in feeding bodies like RWA, PTA due to election or any other reason.
 - vi. Change in student's names due to passing out or leaving the school.

b) Procedure for Re-nomination of VKS members

i) Chairman and Vice Chairman (RWA)

The Convener will put up a proposal with documents to the VKS Cell, Directorate of Education through district, VKS CELL will renominate an other person as Chairman and/ or Vice Chairman.

ii) Government Nominee

The Convener will put up proposal on the letter head of the area MLA proposing changes, to the VKS Cell; Directorate of Education and, VKS Cell will renominate the person as Govt. Nominee.

iii) NGO

The Convener will put up proposal after consulting the DDE concerned, to the VKS Cell of the Directorate of Education through zone and district. The VKS Cell will renominate an other person as NGO nominee.

iv) PTA Members

The Convener will put up a proposal on the school's letter head to the VKS Cell, Directorate of Education and VKS cell will make the change.

v) Convener and Co-Convener

It will not be necessary to change or re-nominate Convener and Co-Convener as it is automatic and by designation.

vi) Students Representatives

The Convener will put up a proposal with reasons on the school's letter head to the VKS Cell, Directorate of Education and VKS Cell will make the change (s).

vii) PWD / DSIIDC Member

The Convener will put up a proposal on the school's letter head to the VKS Cell, Directorate of Education with a letter from the PWD/DSIIDC Zonal Office in case of transfer of the JE The VKS Cell will make the change.

PART - B

1. INTRODUCTION

2. OPTIONS OF SOME BALA IDEAS

I. Understanding the Physical World Around Us

II. Understanding the Passage of Time in Our Daily Live

III. Dealing with Numbers

IV. Ways of Interacting with Language

V. Doing and Learning

VI. Fun and Learning

VII. Making some School Components inviting for Children



1. INTRODUCTION TO BUILDING AS LEARNING AID (BaLA)

by Kabir Vajpeyi
email : vinyascentre@yahoo.co.uk

Imagine

Imagine a tree where the branches are so low that you can horse ride on it.

Imagine a tyre train or a tyre swing.

Imagine a mound on which you can roll down.

Or a wall on which you can make your painting or a floor on which you can write a poem and no body scolds you for that.

Or another wall behind which you can play hide and seek.

Or a fan with seven colours that vanish when it rotates.

Imagine a shop where you can buy or sell anything you wanted to with your friends.

A cave where you can sit quietly and see the world going by.

Imagine a patch of blue light that moves through the day in your room.

Imagine a quiet corner, where you can be alone, or discuss your problems with a very close friend.

Imagine a place where you can make your own game on the floor and play with a friend.

Imagine a colourful garden with lot of fragrances and trees where birds make their nests.

Imagine a garden where the moment your friend is hurt, you know a plant that you can use as a medicine to heal.

Or a pipe through which you can talk to your friend on the other side of the wall. Imagine a periscope through which you can not only talk to your friend but also see her.

Or a wall or a window security grill which has interesting patterns to move your fingers on.

Imagine all this in your school! Just imagine, how much fun it will be? Would you like to have all this and more in your school? Ask your teachers and the school management if they can get such fun elements in your school?

*The author is an architect and head of the team which developed the concept of BaLA at Vinyās, Centre for Architectural Research and Design, New Delhi. The professional team at Vinyās has been providing policy level inputs to the Ministry of Human Resource Development, Government of India, UN agencies like UNICEF, UNESCO, UNDP, the World Bank, technical support on BaLA based designs and capacity building to the State Governments in Delhi, Jammu & Kashmir, Himachal Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Orissa, Karnataka, Tamilnadu, etc. apart from design inputs to several NGOs in Uttar Pradesh, West Bengal and Madhya Pradesh. A book by the same author on BaLA (in Hindi & English) was published with support from the World Bank in 2005.

Building as learning aid, or BaLA as it is now popularly known, is about creating such possibilities for learning in the existing and new to be made school environments. Which child will not like to come to such a school? Which teacher would not like to be in such a school? Which principal will not like such an environment in her school?

Who else is doing it? And, how?

The natural question in your mind will be its all very fine. But how would you make it in your government school? For initial inspiration, it might be good to know that in several thousand schools across the country in the states of Jammu & Kashmir, Himachal Pradesh, Gujarat, Madhya Pradesh, Karnataka and now in government schools in Delhi, the concept of BaLA has been implemented by enthusiastic school principals, teachers and even civil engineers. The next question is, how?

Their respective state governments planned and approved a budget on BaLA, oriented and exposed their school principals, teachers and civil engineers on the theoretical and practical understanding of BaLA with support from Vinyās and then made available the funds towards the activity for implementation. The actual mechanism may be different in each state, but this is how it has happened. But remember, in each of the states described above the onetime budget available per school was small ranging from Rs 15,000/- per school to Rs 40,000/- per school in most cases, except Gujarat, where for about 300 existing schools it was about Rs 2,50,000/- per school. Also remember, the sites were rural as well as urban and the numbers involved were much large and the conditions to implement in remote locations were fairly difficult. For example in the mountains of Himachal Pradesh there were more than 1,200 school sites spread across all districts including Lahoul Spiti, Kinnaur, Kullu, etc. In Karnataka it is being implemented in about 10,000 schools across the state which have funds available from the government for implementing BaLA.

Convergence of efforts, ownership of work and working in mission-mode

The critical 'trick' behind this success has been to converge thoughts, energies and resources, rather than work separately in closed, compartmentalised boxes within school administration. In each of the schools described above, the education administrators (State Project Directors, District Project Coordinators, Block and Cluster Resource Coordinators, school principals, teachers and civil engineers worked very closely, while interacting and supporting each other's creative ideas. The most important value behind this is the 'ownership' of these people associated with school with whatever they were creating in their respective school. One can clearly see them working in a 'mission-mode' in these endeavours and the stories of such efforts run into hundreds, if not thousands. These people were driven by the zeal to do something new and innovative, went out of the way to discover the meaning of BaLA and on many occasions went ahead to innovate on their own sometimes even much beyond, what they learnt in their orientation.

Why should we do it?

In Delhi, the schools under the Delhi Government are fortunate to have the money available for Building as Learning Aid under the Vidyalaya Kalyan Samiti (VKS) as a recurring grant of Rs 2,00,000/- per year. It is, at the least, a historic step by the Department of Education under Delhi Government in developing a system of decentralised decision making, in allowing schools to address their learning needs in a flexible way and in an organic evolving framework. That such a path breaking step is taken in the National Capital of our country should not come as a surprise, since Delhi actually deserves it. It has to demonstrate the very best for others in the rest of the country to follow, rather than the other way round.

We all somehow like to maintain the 'status quo', and resist any change. And many times find reasons, how not to do something new. If it was possible to implement BaLA on a remote mountainous terrain or in the desert village site where you have to carry every thing on a head load, we can surely do it in all resource rich Delhi.

Our government schools can do better

We somehow always have this misplaced notion that private schools are doing better, since they have more flexibility and resources. Rather than harping on our negatives, let us now look at our positives, our teachers are better qualified and trained, we have better infrastructure than many private schools, and certainly have more flexibility and resources to be used in school with VKS than any private school. Isn't our result better than many private schools today? Even though the concept of BaLA originated from a private entity called Vinyās, it has committed itself to propagate this concept first to the Government schools. Why? Because it is important that we first improve our own government schools, **set benchmarks of quality in education**, through innovative teaching-learning methods and better quality infrastructure. And let others follow it.

Are private schools always better?

If you look at most private school that have colourful painted visuals on boundary and interiors, nice looking colourful branded play equipment - they may look attractive in the first glance. *But, a closer observation will reveal that most of it may have little pedagogical value. BaLA is not about painting walls with colourful visuals, but about creating a pedagogically meaningful environment for children in the interior and the exterior.*

It should come as no surprise then that in schools across the country, where BaLA is being implemented, children and parents find the government schools providing a far better learning environment and many parents have already moved their children from private schools to government schools. This has been reported by parents themselves, teachers, school principals, education administrators from Himachal Pradesh, Gujarat and Karnataka. The general enrolment of schools has also increased in BaLA schools in these three and states.

So, what is BaLA?

Let us first understand the function of a school. A school is not merely a structure, or a building. Neither is it only an assembly of children and teachers. It is a specialised, indeed a very special, place for children to learn and grow. It is a place that shapes their thoughts, one where they can see knowledge come alive. It makes them wonder and be creative. It propels them to raise questions and explore answers, to identify problems and attempt solutions. The School enables children to interact with their environment, and give direction to their future.

Clearly, the responsibility on the school is enormous. That is why it is important that the school has an environment where teaching and learning are not reduced to a ritual but become a joyous experience, for both teachers and children. The physical built environment, which includes not only the building and its interior spaces, but also the exterior spaces and the landscape, could play a crucial role in making that experience more meaningful.

Since the building is one of the most expensive physical assets that a school may have, it is important to develop it carefully and sensitively. Apart from providing a comfortable shelter, it must offer an additional 'learning value' to its inhabitants. This is possible if we understand how the use of space and its constituent elements, including lighting and ventilation, can support diverse learning activities apart from conventional teaching. It is important to pay attention to the interface between the design of the building and the teaching-learning programme.

Building as Learning Aid (BaLA)

Bāl in Hindi means a child or a boy (as in case of Govt. Boys Schools in Delhi). The acronym BaLA (*bālā*) means a girl. BaLA is an innovative way to look at the relationship of a child with the school space.

The fact that physical space can be a resource in the teaching-learning process has never been explored seriously. Building as learning aid (BaLA) is about maximising the learning value of the school space. A range of learning situations and materials can be actively used as a learning resource by innovatively treating school spaces (classroom, circulation spaces, outdoors, natural environment) and their constituent built elements (floor, wall, ceiling, door, windows, furniture, open ground). This resource can complement the teaching process and supplement textbook information. A three-dimensional space can offer a unique setting for a child to learn because it can introduce a multiple sensory experience into the otherwise black and white world of textbooks and blackboards. It can make abstract concepts more real for the child. Dimensions, textures, shapes, angles, and movement can be used to communicate some basic concepts of language, science, mathematics and environment, and to make learning a truly memorable experience for children.

BaLA aims at using floors, walls, pillars, staircases, windows, doors, ceilings, fans, trees, flowers, and, even rainwater, as learning aids. For example, a window grill can help children practice pre-writing skills or understand fractions. Angles can be marked under a door shutter on the floor and ceiling fans can be painted with colour wheels for children to enjoy ever-changing formations. Moving shadows of a flag-pole can be used as sundial to understand ways of measuring time; and planting trees that shed their leaves in winters and are green in summers can create a cool, comfortable outdoor learning space.

But, why BaLA ?

- BaLA can be introduced even in the building components of an **existing school**.
- It can be **combined with building repairs**, up-gradation and new construction.
- It makes **joyous learning** possible for children.
- It makes a variety of learning materials **accessible to children** outside the classroom, even after school hours.
- It has the potential to **create conducive self-learning situations** for children.
- BaLA learning aids are not standard. **Teachers can adapt them** to suit their own specific needs and conditions.
- The learning materials, integrated in the built environment, are **more lasting and durable**, and **cannot be stolen** or misplaced.
- Even though **fixed**, these learning aids can be used in **multiple ways**.
- The **value of the school building increases manifold** at a fractional increase in its actual cost.

How were they developed?

The various BaLA ideas were developed by a huge team of architects, teachers, people who develop the curriculum (pedagogues) and write the text books, child development professionals, scientists, mathematicians, environmentalists, toy designers, social workers and others. All these people were wondering, why is it that our children do not like to come to school? They observed the children in schools and talked to them for several days. They also talked to the teachers. They also saw if child's physical, emotional, social and intellectual development is adequately supported in the school environment? They tried to understand if there were concepts in maths, science, language, that all children could not understand properly. They also looked at the school's outdoor landscape and playground and if it could provide fun and new learning experiences to children. It took them two years and a lot of work to understand all this and come out with nearly 150 ideas and solutions for our schools. Together these ideas are called Building as Learning Aid or BaLA ideas. These guidelines cover some of those that can be made by the VKS.

The pedagogical basis

Learning in schools is not just about reading books and taking exams. In fact, it is much much more. It is said that there are four pillars of education in the twenty first century

- Learning to **know** (seeking knowledge)
- Learning to **live together** (learning to live with others)
- Learning to **do** (learning by doing things with hands and mind) and
- Learning to **be** (allowing a child to be a child and realise her own self).

The BaLA ideas in the school promote these pillars of education in the school environment. They allow the school to be conceived in a holistic way where the physical environment of the school is connected to the way children learn and teachers facilitate this process of learning. It requires the entire school community children, parents, teachers, school-administrators and non-teaching staff to come together to develop the learning environment. VKS is the most appropriate body to take the concept forward. In fact there may be several ideas that parents may like to make at their homes to initiate the children into fun based learning.

Most of the syllabus and the text books designed today in India are based on the National Curriculum Framework 2005 by NCERT. They suggest a range of activity based learning for different grades. Through BaLA, many of these activities become real learning experiences for children rather than mere text-book accumulation of knowledge. It is important that children construct knowledge by doing things with hands, by thinking, by making mistakes, by improving, by sharing and discussing with friends and elders rather than merely accumulate it by rote. Introduction of BaLA in school environment can make this possible.

So, who will start it?

Well, the ball has already started rolling. The government has already taken the first step - given enough funds and flexibility to you as a school principal or a member of VKS and also demonstrate the concept at few government school sites in Delhi. All the members of your VKS may like to visit these sites and observe the concept first and then plan it in your school.

Now, you have to take the lead in your school and make the best possible use of this great opportunity.

How to move forward?

Survey

1. Make a simple hand drawing of your school campus. This will be a useful tool for planning.
2. Do a survey of your school. Which spaces are not utilized properly? How can they be better utilized? Cover the spaces used by users of both the shifts, if the school has double shifts.
3. Identify which areas need repair?
4. See if your school needs expansion. If so, which is the most appropriate location for expansion?

Plan

1. Check the present seating plan of all grades. Is it the most efficient seating plan? Can primary school sections be together and the middle school sections together?
2. If the school has double shift, cover all the facilities that are common or different for the two shifts.
3. Decide about the new seating plan of classrooms, library, CAL room, Science lab, and other spaces. For implementing BaLA ideas, it will be important to decide and fix this first.
4. With seating plan of whole school decided and the area for future expansion earmarked, go ahead to select the BaLA ideas from this guideline.
5. Plan for long term. Each year you will have Rs 2 lakhs to move on towards your long term plan in phases.
6. Some ideas may be valid for only certain grades. You may make them inside or just outside such classes in the corridors. Other ideas are such that they are useful for all grades, you may decide to put them in common spaces like corridors and outdoors.
7. Discuss the selection of ideas with subject teachers to also decide their location.
8. With each of the ideas given, its approximate cost is also indicated. Use this to see what all can you make now, and which all later (in the next phase).
9. Areas that need repair (like repair of cracks, dampness, peeling plaster, broken hardware, etc.) must be repaired first. Only then, should any BaLA idea be made there.
10. Finalise your plan and submit it for approval to VKS as per guidelines given.

Implementation

1. For implementation, you will need assistance of
 - a. School staff especially the art & drawing teachers, motivated subject teachers from different grades for language, science, maths, EVS, etc.
 - b. Skilled artisans painter, carpenter, metal fabricator and mason. 'Who will be needed where?' is also indicated along with different BaLA ideas.
2. All BaLA ideas are meant for children. Therefore make sure that they are easily accessible to them. Tell this firmly to the teachers as well as the artisans who are going to make it.
3. Make sure that BaLA ideas cover facilities for both shift schools if the school runs in two shifts.

Feel free to improvise and use an idea to suit a situation as long as it has the spirit of BaLA, child-friendly, fun with learning, creative and of multiple use.

A Visible Transformation through BaLA initiative in the same Classroom

Before



After



Cover Photographs, BaLA Text, photographs of BaLA ideas by Vinyas.

Vinyas acknowledges the partnership of following agencies for the photographs used in this document:

- UEE Mission (SSA) Delhi
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- IC Trust School, Murshidabad, West Bengal

2. OPTIONS OF SOME BaLA IDEAS

I. Understanding the Physical World Around Us

01. Measures Around Us

What are Measures Around Us? What is the purpose?

" How far is your school from home? "

" How heavy is your school bag? "

" How many cups of water does your bottle have? "

Try asking these questions and you will get a range of answers of which most are away from the exact one. Many of us keep struggling with estimates of lengths, distances, weights and volumes till adulthood. Why not give children measures for things around them in a variety of concrete ways? Why not allow them to play and work with some real measures around us?

The built space can provide several concrete examples of standard and non-standard measurements of lengths, distances, weights and capacities. These may be standard units of floor tile lengths or repeated motifs in a border pattern or regular distances marked on stepping-stones and milestones. A range of such varied measurement units can be planned interestingly along the various built elements that constantly remain visible throughout the school environment. This provides an accessible yardstick for children to develop and comprehend the 'measurement sense'.

Design variations of Measures Around Us

Scales Horizontally and Vertically painted on furniture, walls, floors, windows and doors.



Scales painted on children's desk with its width, height and weight





Horizontal scales painted on along corridor lengths (e.g. between columns), or vertical scales on wall and pillars.

With vertical scales, make sure to provide writable surface for children to write their height, name or date.



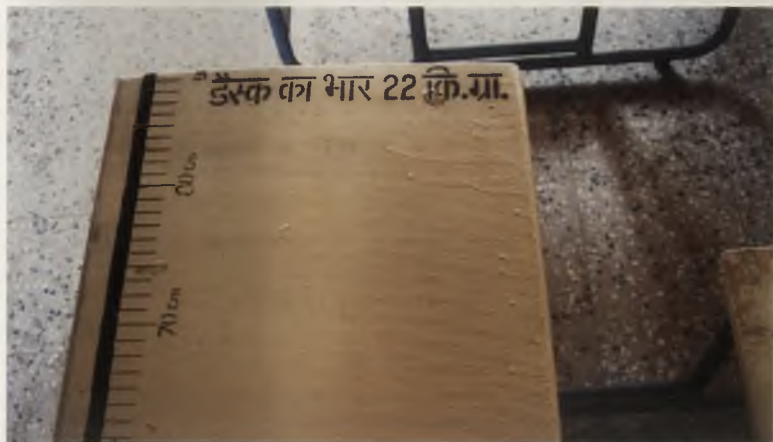
Milestones on columns or walls along the pathways, dustbins and poles.



Milestones and signage to guide children about the distance and the direction of important spaces in the school. These can be along the walls or pillars at important junctions of corridors, staircases, etc.



Weights of furniture and commonly used objects written on them.



Weight of those objects and furniture can be clearly painted that children are likely to naturally lift or move during school hours. This can be done on desks, stools, chairs, movable boards, etc.

Capacity of water tanks, buckets, waste paper bins written on them.



Capacity of water tanks and sumps that are visible to the children must be painted, along with other standard and non-standard measures of capacity with which children can directly relate such as bucket, bottle, mug, etc.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Measures Around Us are useful for all grades from I to X. Teachers may decide to make more complex ideas for higher grades.

Physical, finer motor and sensory

- Developing **finer motor** and **eye hand co-ordination** to use measurement tools accurately and with precision.

- Using **visual perceptions to estimate** relative measurements of different objects within a range of accuracy.
- Observing and being aware of measurements in one's own body and in the surroundings, in relation to other objects or other children.

Facilitating understanding

- Becoming aware of measurements through permanent markings in the space around them.
- Experiencing concepts like **near-far**, **heavy-light**, and **tall-short**, in concrete ways.
- Actively and accurately **using** the **standard** and **non-standard measurements** and measuring tools that have been provided in the built environment.
- Understanding the **relationship** between the different units of measurements through concrete experiences.
- Developing **precision** in measuring objects.
- Using measurements in mapping and in understanding scales.

Social and emotional

- Learning through sharing and interaction in **non-threatening** ways.
- Building positive self-images through success in understanding and using measurements.

How to make Measures Around Us ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. Style of all text painted should be similar to that given in the text books.
3. The teachers in the school will need to identify spaces and surfaces where various types of measures shown can be painted. The scales should be painted with precision, depending upon the level of children. These can be done in classrooms and corridors.
4. Location of Milestones must be carefully checked so that there is no confusion. Distances shown in Milestones must be straight and not confusing for children to understand.
5. Take the weight of the certain furniture that children are likely to push or lift and paint the weight on it on a visible side. A readymade wooden scale can also be inlayed on the teacher's table surface.
6. Capacity of easily visible water tanks can be painted in the measures of a glass, bucket and standard litres.

The estimated cost of making Measures Around Us

Item of BaLA design work	Unit	Rate
Horizontal Scale Making horizontal scale on the wall surface or any other surface 15cm wide & length as required including painting the existing wall surface with enamel (matt finish) after applying cement plaster & printing the scale on the surface along with motifs or visuals as per the satisfaction of engineer in charge.	Number	Rs. 200
Vertical Scale Making vertical scale on the wall surface or any other surface that is similar to the horizontal scale complete as per the satisfaction of engineer-in-charge.	Number	Rs. 200
Weights Writing of weight of furniture on its surface & making scale of appropriate size along the edges of the table by enamel (matt finish) after applying primer.	Number	Rs. 15
Capacity The total volume of a water tank can be written on it along with the number of glasses of water it can hold. Capacity of tank are to be painted by a sign-board painter.	Number	Rs. 20

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Measure Around Us

- Scales Horizontally & Vertically - Painting Work
- Milestone - Painting Work
- Weights - Painting Work
- Capacity - Painting Work



02. Angles Around Us

What are Angles Around Us?

Where do we find angles
in the real world?

Do they have something to do
beyond the math chapters?

Few of us realise that angles are everywhere around us. So why not look for them in our buildings and use some exciting angle finders to find them? The three-dimensional space in the built and physical environment offers a vast range of angles. These design ideas sensitise and provide a variety of experiences to children of angles that are all around them. For the younger children, it familiarises them with angles, while for the older children these become a classroom tool for learning about angles. Angles, thus, step out of the pages of the books and get connected in very real ways to the life experiences of children. This makes their discovery exciting, enjoyable and understandable.

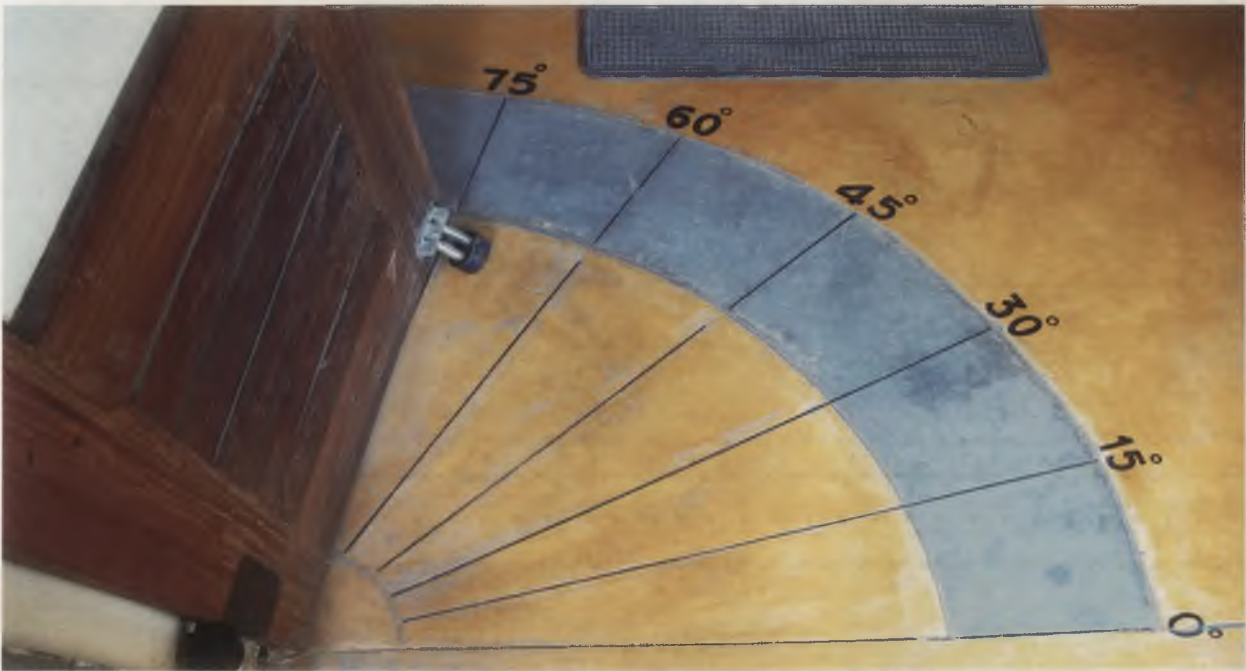
Design variations of Angles Around Us

Door Angle Protractor to see the swing of door shutter on the floor.

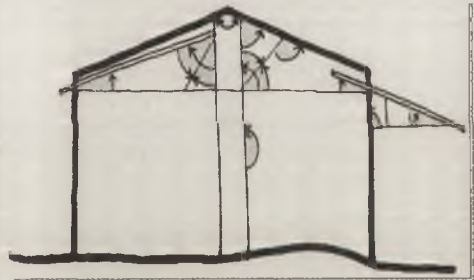
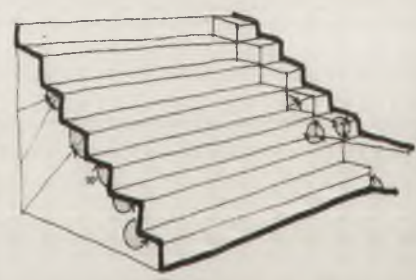
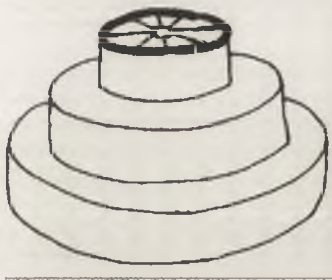


Door angle protractor can be made at one of the entrance doors to classes that have angles in their curriculum. Care should be taken to properly align the angles with the swing of the door. Use road paints and if possible engrave the angular lines on the floor for longevity.





Highlighting Naturally Occurring Angles in Buildings on floors, steps, walls and roofs.



These can be highlighted near the corners, sloping roofs, gable ends of the roofs to make children realise that angles are actually all around. The trick is really to realise their presence all around.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Angles Around Us are useful for all grades from IV to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Facilitating understanding

- Experiencing angles in the static physical environment such as corners of buildings, its elements like rooms, floors, steps, roofs, benches, etc.
- Experiencing the change in angles through the movement of built elements such as the door or cupboard shutter.

- Recognising angles as 90, greater or lesser than 90.
- Recognising that the angles within a circle add up to 360, by using the built learning aids like the bench.
- Using aids provided in the building as tools for measuring or comparing angles.
- Looking at angles within different shapes in the built environment.

How to make Angles Around Us ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Carefully check that in which grades these ideas will be applicable.
3. Door Angle Protractor can be simple for lower grades (IV & V) and more complex for higher grades (VI onwards). Check the alignment of the door shutter with that of the protractor precisely. Angle reading must be clearly visible to children while using the protractor by moving the shutter.
4. Make sure that angles marked are precise.
5. Protractor must ideally be engraved on the floor along with painting for longer life.
6. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. For painting on the floor, use road paints. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Angles Around Us

Item of BaLA design work	Unit	Rate
Door Angle Protractor Marking a protractor, engraving with suitable tool on the floor (fine chisel or stone cutting hand held machine) on the markings given and painting on floor with suitable colour road paint, as per design on stone/ cement / tile floor.	Number	Rs. 500
Angle on Window Grill Fabricating Angles on the existing window grills.	sqm	Rs. 400

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Angles Around Us

- Door Angle Protractor (Painted) Painting work
- Door Angle Protractor (Engraved) Civil work
- Highlighting Naturally Occurring Angles in building - Painting work



03. Balances

What are Balances?

*Light as a feather
Or heavy as a rock
This balance will tell whether
things weigh alike or not.
Down for the heavy things
Up for the light
For those that are balancing
The weights are just right.*

Balances provide **tools** that children may use either to **weigh** different **objects** or **compare** weights of objects or other children. Thus, abstract concepts of lighter, heavier and equal weights may become experiential and meaningful to them. It can be used to provide concrete experiences to support text book learning. In the built environment, it could either be a balance on the wall, which can also be used to hang personal belongings or a play equipment like the Seesaw.

Design variations of Balances

Seesaw Balance provided in outdoor play space which can be used in play activity.



Tyre Seesaw and Tyre Flipper give an idea about the lever arm and balance. It is fun as well as learning. These can be made in the outdoor environment of schools.

Use waste discarded non-radial tyres for the purpose. Here car / auto rickshaw tyres are used.



How will these BaLA ideas help children ?

Balances are useful for all grades from I to VIII. Teachers may decide to introduce more complexity in ideas for higher grades.

Physical, finer motor and sensory

- Developing finer motor and eye-hand co-ordination to use the balance accurately and with precision.
- Using visual and tactile perceptions to estimate relative weights of different objects.

Facilitating understanding

- Estimating the relative weights or heaviness and lightness of objects made of different materials, and then assessing the accuracy of the estimates.
- Understanding the concepts of heavy and light by comparing weights of different objects.
- Understanding that an object can be lighter than some objects and at the same time heavier than others.
- Measuring weights by using standard and non-standard measures in the balance provided.
- Being able to express the weight of an object through different standard units of measurements, and in this way learning the conversion of units through concrete experiences.
- Relating the above learning experiences to daily life situations.

Social and emotional

- Learning through sharing and interaction in non-threatening ways.
- Building positive self images through success in understanding and using weights.

How to make Balances ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. If there is an existing play equipment like a seesaw, it can be simply modified with graduation or dimension painted on its flat broad for children to also understand the concept of lever arm (i.e. the farther you are from the fulcrum, the lesser force is needed to lift the object on the other side). When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used.
3. Paint the lever arm distances on the Seesaw log for clarity to children.
4. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Balances

Item of BaLA design work	Unit	Rate
Seesaw Balance		
Fixing waste tyre on timber log as shown along with complete fittings to make the seesaw fully functional	Number	Rs. 1000

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters, No. = Number.

Which skill will be needed to make Balances

- See-Saw balance - Carpentry Work



04. Symmetry Around Us

What is Symmetry Around Us ?

*I looked in the mirror and I did see
That my left side matched my right exactly.
I folded squares, circles and triangles
And the alphabets A, B, C, D, E.
So, I could get exactly matching parts.
The magic of symmetry!*

Symmetry is inherent in our surroundings. It is visible in various built elements like doors and windows, classrooms, and sometimes even in the whole building. There are umpteen examples of symmetry in nature, in the leaf and flower patterns, bodies of insects or the arrangement of leaves.

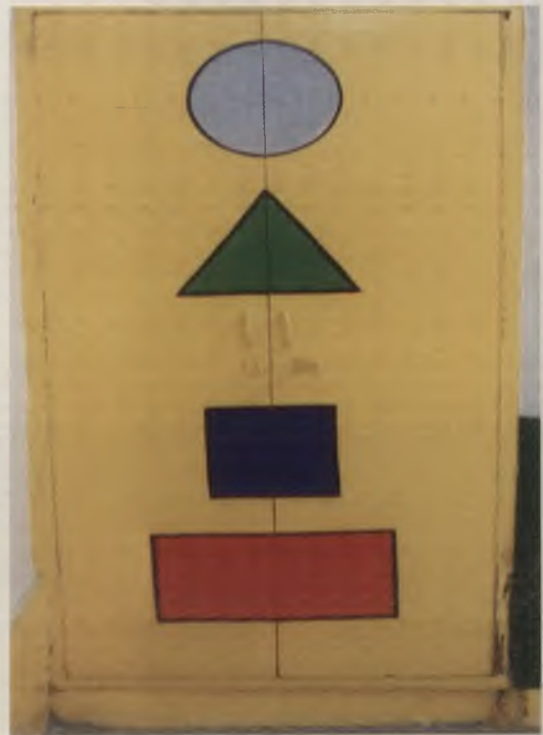
Symmetry Around Us is an attempt to take symmetry out of the pages of a textbook into the child's real world and provide an array of rich and varied experiences of symmetry around us.

Design variations of Symmetry Around Us

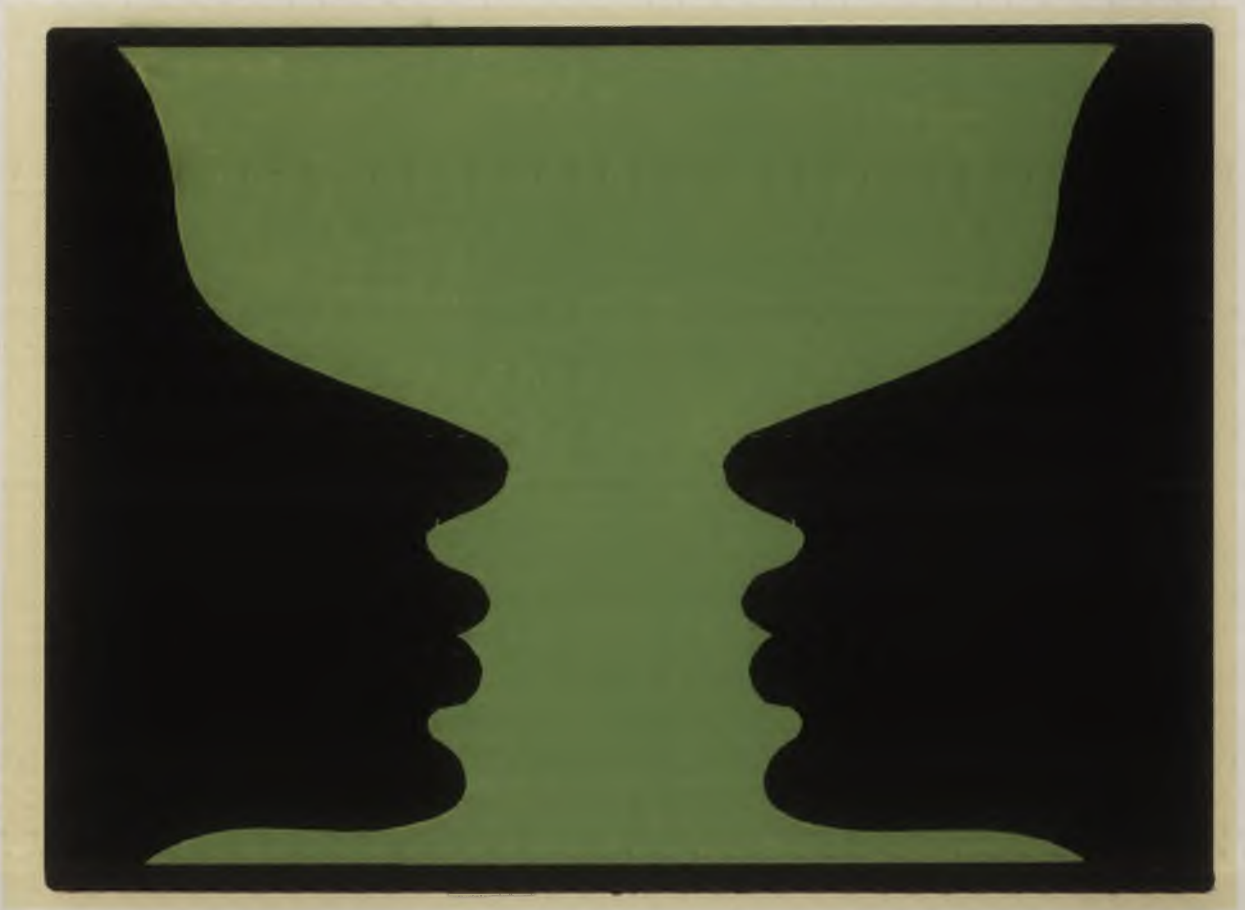
Symmetry in the Built Elements like in Double door and window shutters.

Symmetry in Geometrical Shapes shown on wall and floor tiles of different shapes.

Symmetry in Traditional Motifs and Patterns depicted for different uses across the school.



The symmetrical shapes of geometry, traditional motifs, illusions, patterns can be painted along the vertical line between the two shutters as shown. When the shutter is opened, the symmetrical halves are revealed to the children. Complex geometrical shapes and patterns can be used for higher grades.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Symmetry Around Us are useful for all grades from 1 to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

Using visual and tactile perceptions and to experience symmetry in real life.

Facilitating understanding

- Experiencing and observing figures and shapes that show symmetry through the design ideas provided or which are already existing in the built space and the natural world.
- Experiencing symmetry through mirrors.
- Distinguishing between figures and shapes that show symmetry and those that do not.
- Learning to draw lines of symmetry.

- Experiencing lateral inversion through symmetry.
- Predicting what a folded symmetrical figure will look like when unfolded.
- Being able to represent symmetry in different ways, pictorially, through art, models or writing.

Social and emotional

- Learning through sharing and interaction in non-threatening ways
- Experiencing opportunities for creative expression and aesthetic appreciation.

How to make Symmetry Around Us ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Choose a variety of Symmetrical shapes simple to complex to very complex ones for different grades. Some simple shapes can be from objects, plants, animals seen in every day life while complex ones can be from geometry and patterns. Explore these through text books, encyclopaedias, etc. For early grades, even some non-symmetrical shapes can be painted to explain the difference between symmetry and asymmetry.
3. Asymmetrical shape may also define a new shape when cut along the line of symmetry i.e. a rectangle cut into two squares, or a circle cut into two semicircles, or an equilateral triangle cut into two isosceles triangles.
4. Always define a natural line of symmetry i.e. the meeting joint between two shutters of door / almirah is a natural line of symmetry.
5. Make sure that the painter maintains the precision in painting shapes while defining the natural line of symmetry.
6. Make sure that Symmetrical shapes are located at child accessible height.
7. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Symmetry Around Us

Item of BaLA design work	Unit	Rate
Symmetry Figures on surfaces		
Symmetrical Figures to be painted on the surface of the door / almirah shutters as per designs chosen.	sqm	Rs. 210

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Symmetry Around Us

- Symmetry in the Built elements - Painting work
- Symmetry in Geometrical Shapes - Painting work
- Symmetry in Traditional Motifs & Patterns - Painting work

05. Invert Images

What are Invert Images?

*It's b from here while d from there!
The thumb on my left hand is on the right
How come in the mirror it changes sides ?*

Young children often get confused between the right shoe and the left shoe or between **b** and **d**. To lessen these confusions, the built environment can provide settings which can help children to understand the mystery behind the inversion they see. **Invert images** provide fun experiences of lateral inversion through inverted images in built elements such as grills or mirrors. The grills can be accessed from both the sides to make children realise how the same image looks inverted when looked at, from the other side. Similar experiences help children understand the change in an image when one is looking at it from the other side or viewing its reflection in a mirror. Mirrors can also provide to enjoyable experiences of reflection to the children.

Design variations of Inverted Images

Inverted Images in Mirrors to see one's own inverted image or of an object.



Invert images can be easily understood with mirrors placed adjacent to each other on perpendicular walls. Children will need to bring an object or an image on a piece of paper and observe its lateral inversion by keeping it along the plane of the mirror. They can experiment with it on their own. The mirrors must be located at a height that is child accessible and safe,

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
2. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Invert Images are useful for all grades from I to III. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Using visual, tactile and spatial perceptions, to experience lateral inversions in the real world.

Facilitating understanding

- Observing and recognising inverted images through concrete experiences, such as through reflections in the mirror or water.
- Identifying objects, figures, shapes, words or alphabets from their inverted images.
- Looking at inverted images in examples of symmetry in the natural world and in the built space.
- Predicting what the inverted image of simple objects or geometrical shapes would look like.
- Understanding through concrete experiences, how the appearance of objects and figures would look from the point of view of a person facing you.

Social and emotional

- Learning through sharing and interaction in non-threatening ways.
- Experiencing fun and enjoyment.

How to make Invert Images ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Choose a variety of shapes for invert images simple to complex to very complex ones for different grades. Explore these through text books, encyclopaedias, etc.
3. A symmetrical shape may also define a new shape when cut along the line of symmetry i.e. a rectangle cut into two squares, or a circle cut into two semicircles, or an equilateral triangle cut into two isosceles triangles.
4. Make sure that Invert Images are located at child's accessible height.
5. Make sure that the painter / metal fabricator maintains the precision in painting / making shapes.
6. Metal fabrication must be smooth, all edges and corners properly rounded with no sharp ends, all welding splinters removed so that it is safe for children to use.
7. Many ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Invert Images

Design variation	Item of BaLA design work	Cost / Unit*
Inverted Images in Mirrors	Providing and fixing acrylic mirrors on a wall	Rs. 125 / Sqm.

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.
 Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Invert Images

- Inverted Images in Mirror - Carpentry work

06. Visual Illusions on Walls

What are Visual Illusions on Walls?

Optical illusions play tricks on your brain.

They say, " Hey, just try and look again.

Something different is happening here."

Is it taller or shorter, thinner or fatter,

What you see or don't see, you need to explain.

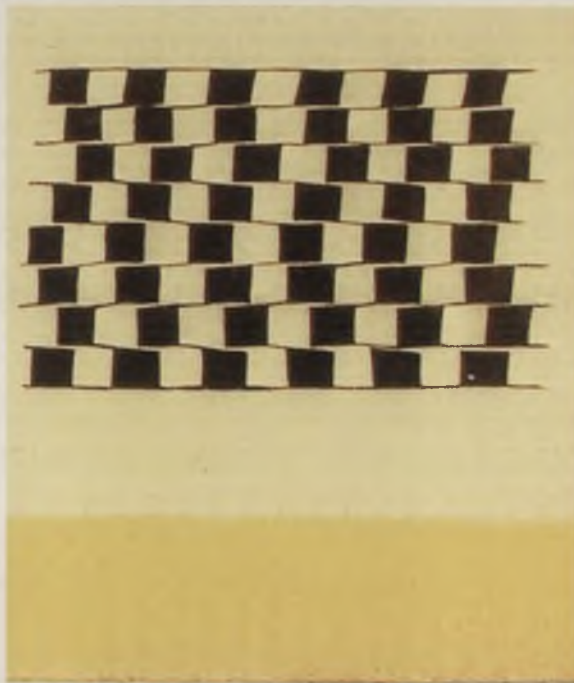
Children are fascinated (or confused!) by the tricks that visual illusions in the real world play on them. Mirages create images of water on a tarred road on a hot summer day, which magically disappear as soon as you get close to them.

Visual Illusions on Wall attempts to create such interesting opportunities for children, through which they experience the interplay of movement and visual perception. Such experiences stimulate natural curiosity and may provoke children into probing further and trying to explore their causes.

These can be made on walls that remain visible for a **time that is enough to register the illusive magic**, during a walk or a casual stroll. The built space offers several such opportunities, in a school environment.

Design Variations of Visual Illusion on Walls

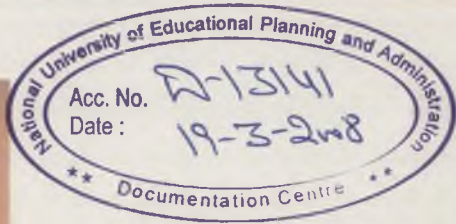
Deceptive Illusions that make the child discover the deception that is created.



Are the horizontal lines parallel?

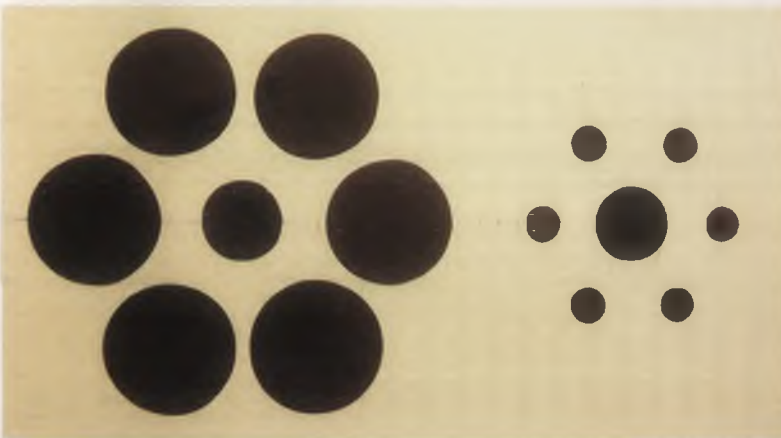
Is the hat taller or wider? These illusions are interesting ways to engage children in finer observations and measurement.





Deceptive illusions

So the figures inscribed in the circles are not squares. Aren't they? Let's find out



Which of the circle in the centre of the two figures is smaller? Let's measure it.



Dual Illusions that make a child see more than one image in a seemingly singular image.



Dual illusions



Dual illusions are ways to understand that there can be more than one ways to look at things around. They can be painted on walls, pillars, etc.



Impossible Illusions that allow a child wonder if the object is possible to make at all ?



The impossible illusions make children visualise two dimensional visuals in three dimensions and explore the possibility if they can actually exist in the real world. These must be painted at child accessible heights so that children can physically interact with them at their own pace and will.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B -Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Visual Illusions on Walls are useful for all grades from I to X. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Experiencing visual illusions in the design idea, to sharpen visual perception (and deception!)
- Experiencing the interconnection between visual perception and movement.

Facilitating understanding

- Experiencing a variety of visual illusions through the design ideas.
- Connecting with experiences of illusions in real life, such as in the visual experiences of mirages, rainbows, and clouds.
- Recognising the visual illusion related to the change in the size of an object with the change in distance, for example an aeroplane.
- Experiencing divergent and lateral thinking, by looking at the same image in different ways.
- Learning to think and do things in different ways.

Social and emotional

- Experiencing opportunities for peer interaction.
- Experiencing fun and enjoyment.
- Developing a sense of belonging by associating school with enjoyable experiences.

How to make Visual Illusions on Walls?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Choose a variety of Visual illusions simple to complex to very complex ones for different grades. Explore these also through text books, encyclopaedias, etc. Specifically use Deceptive or Dual illusions for lower grades and Impossible illusions for higher grades. These can mostly be made in the corridors and open spaces.
3. Some Visual Illusions require distance for a particular observation to be made by children. Locate such illusions on staircase landing, end of corridors, etc. so that there is sufficient visual expanse for children to see it and observe.
4. Make sure that Visual Illusions are located at child's accessible height.
5. Make sure that the painter maintains the precision in painting shapes while keeping control over the size.
6. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Visual Illusions on Walls

Item of BaLA design work	Unit	Rate
Visual illusions on walls These have to be painted on the locations & the surface of the wall.	Number	Rs. 250

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Visual Illusions on Walls

- Deceptive Illusion - Painting work
- Dual Illusion - Painting work
- Impossible Illusion - Painting work



07. Colour Teasers

What are Colour Teasers?

*A little red and a little blue
and that is how you make the purple hue
Some red and some yellow
makes an awesome orange glow*

Children's world and imagery is full of colours. However, this is not reflected in the environment of most schools, which are surprisingly devoid of colour. At the same time, it is not important to know just one RED but to also know the range of REDS and their possibility to create various secondary colours like PURPLES and ORANGES.

Colour Teasers allow children to experience the mystery of colours through the interplay of light and movement in stationary as well as moving parts of a building. These can create interesting and varied visual experiences to heighten children's perception and understanding of colour. There is no need to colour the entire building with bright colours and shades. Colours can appear in small focussed pockets across the school and provide effective visual experiences. The movement of sunlight can create moving patches of colours within the indoor, if planned consciously. In any case, it does not cost more to paint a bright warm yellow, if one was already painting a wall in a cold dull grey.

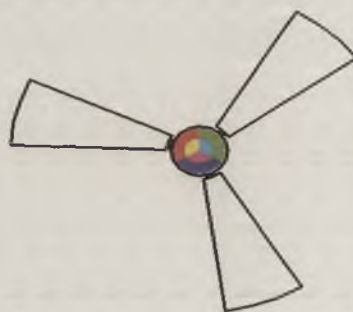
Design variations of Colour Teasers

Fan Colour Wheels of different types that revolve within the class to create amazing patterns.





Various colourful discs can be painted on the central circular portion of the ceiling fans. For smaller grades these can graduate from Primary colours, secondary colours, VIBGYOR to more complex forms as shown here.



Panel of Colour Shades to see the shades of same colour together in a border or a frame.



These panels of colour shades can be made either by painting or by putting tiles of such shades in the corridors. A strip about 10 to 15 cm high and spread across the length of the corridor may be made with seriation of colours as shown.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Colour Teasers are useful for all grades from I to X. Teachers may decide to increase complexity in ideas for higher grades.

Visual and sensory perception

- Experiencing the interplay of light, colour and movement.
- Experiencing a number of shades within the same colour.
- Experiencing changes in colours and colour patterns with change in the speed with which the colours move on a disc.

Facilitating understanding

- Understanding how colours change with the intensity of light.
- Providing opportunities to overlap colours to arrive at new ones.
- Linking some of the visual experiences to the concepts taught in class, for example, understanding that light is made of seven colours.

Social and emotional

- Experiencing fun and enjoyment.
- Providing opportunity for group interactions.
- Providing opportunities for creative interactions and usage.

How to make Colour Teasers ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Choose a variety of Colour Teasers simple to complex to very complex ones for different grades. Some simple shades can be formed from colour mixing of primary colours, then, secondary colours, etc. Explore these through text books, encyclopaedias, etc.
3. Use the central disc of the fan to paint colour wheels / colour spirals and not its blades. Use enamel paint.
4. Use transparent glass colours to paint on window glass panes. Paint on that side which is less likely to be scratched.
5. For Colourful Sun Catcher, if there are roofing sheets, without false ceiling, a small panel of size 200x200mm can be made with 4mm thick polycarbonate sheet and painted suitably with transparent glass colour. This panel can be fitted with adequate water proofing sealant along its periphery for joining with roofing sheet.
6. Make sure that the painter maintains the precision in painting shapes
7. Make sure that the final effect of the Colour Teaser is easily visible to a child.
8. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated rate of making Colour Teasers

Item of BaLA design work	Unit	Rate
Fan Colour Wheel Painting the rotary disc of the fan in different colours.	Number	Rs. 50
Window Colour Panel The ordinary sheet glass fixed in the window panes can be painted with glass paints in primary & secondary colours according to the class.	Number	Rs. 100
Panel of Colour Shades Making colour panels of size 10cmx10cm to be painted in different shades & tones of the same colour.	sqm	Rs. 75

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Colour Teasers

- Fan Colour Wheel Painting Work
- Panel of Colour Shades Painting Work & Civil work

08. Map Your World

What is 'Map Your World'?

Where is your classroom? In my school

Where is your school?

In my neighbourhood

Where is your neighbourhood?

In my city

Where is your city?

In my country

Where is your country?

In the big wide world!

'How can I possibly fit in the drawing of my big school into such a small page of my note book?' This is the dilemma faced by many young children. The skills for mapping and map reading do not come naturally to children. These skills need to be taught through carefully planned experiences and activities. The three-dimensional built space around us offers a practical way to develop these skills. Mapping is all about trying to represent the three-dimensional world on to a confined two-dimensional space. This means discovering ways in which large spaces and huge objects that we see around us in the built space can all fit into the tiny pages of a notebook in exactly the same ways in which they are arranged in the real world.

Map Your World uses the various unique possibilities that the built and physical space offers to explore this concept. Through providing a variety of graded mapping experiences, it attempts to develop different mapping skills, for example, understanding directions and scales of measurements or aerial views. It begins with the mapping of children's immediate surroundings, which can actually be a tool for them to become aware of different distances between objects and spaces and how these can be represented onto a map. It moves on to learning to map more complex and much larger geographical areas which are not within the child's direct experience for example, a village, a city, a country, etc). The intention is that by the time children are dealing with maps of India and the World, in class V, these become meaningful exercises, which are rooted, in the concrete experiences of the real world and at same time to equip the children with the important life skill of mapping.

Design variations

Map of the Classroom on the wall or a table top within the classroom of class I.



The actual map of classroom is to be painted here on the teacher's table with correct orientation and direction for children to relate to a simple, nearby, familiar and 'concrete' environment around

Map of the School on floor in the outdoors or common spaces to be used by all children.



Map of School can be painted on a central platform from where the entire school is visible. It must clearly show the real directions (North, South, East West), and must be oriented exactly the way the school is oriented. This will also enable the children to relate to a slightly complex, nearby, familiar and 'concrete' environment around. Using road paints and if possible engrave the map on the floor for longer life.

Map of the City/ District / State on the wall in the classroom of class III or in the corridor nearby.

Map of the Country on the wall in the classroom of class IV or in the corridor nearby.

Map of the World on the wall in the classroom of class V or in the corridor nearby.



These must be painted on walls, with correct scale and proportions at the locations mentioned above. If possible a scale for distance can also be painted (not shown here) for children to estimate and measure various distances on the map. The map of India can also be made on wall near the Activity Map in Brick and Sand (see below).

Me and My World on a wall in the central location to be used by all children.





Me and my world allows the child to discover, understand and relate to the world around from her immediate surroundings to the distant world in a concrete way. It must be located in corridors, or large staircase landing. But proper natural light must be ensured on it and a height that is accessible for children. In addition to the complete visuals from neighbourhood, city, country, continent and the world in one concentric set of visuals, another visual can be made with some blank portion and writable surface so that children also make their own visuals, as shown above.

Activity Map in Brick and Sand in the Activity Space for Play with Mud and Sand.



The Activity Map in Brick & Sand is to be made in outdoors. Here children can make their own plains, plateau, hill, valley, river in the sand and understand lessons of geography in a better way. This space must be located outdoors and must clearly show the real directions (North, South, East West), and must be oriented exactly the way the real India is oriented.

Where can you see these ideas in Delhi ?

You can see some of these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B- Block, Savda Ghevra
2. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Map Your World are useful for all grades from I to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Facilitating understanding

- Understanding that larger spaces and objects can be represented in smaller spaces like maps through the use of scales. For example, 6 meter of length in a classroom represented as 60 centimetres on a 1:10 scale.

- Understanding that the placement of different objects in relation to each other on the map is the same as landmarks found in the real world. This is called spatial relationship. For example, the tree will be to the left side of the gate, whether it is on the map or in real life.
- Locating places or objects on a map by following the horizontal and vertical reference grid lines.
- Understanding the directions such as North, South, East, West, which are indicated on the map.
- Understanding that the orientation of places is related to the orientation of the map and being able to locate places accordingly.
- Learning to represent objects from a top view, as is often done in a map.
- Developing the skill of representing objects as legends and symbols on a map.
- Developing route cognition by identifying clear landmarks to follow a map or give directions to reach a place.
- Learning to give and follow directions on a map.
- Developing mapping skills by creating maps of different spaces, like the classroom, school, etc.

Social and emotional

- Reinforcing a sense of identity and belonging by mapping and locating familiar areas.
- Expressing creatively through making 3-dimensional models and maps.
- Developing a life skill.

How to Map Your World ?

1. Ask the drawing teachers, geography and science teachers to work together to make these ideas.
2. Make a precise, but simple line map of classroom for grade I. Show distinctly, the wall, the doors, the windows and storage area in the map. This can also be painted on teacher's table.
3. Neighbourhood / Colony / City / State maps must be bold, simple, but precise and also show the directions clearly. When made on the horizontal surface, make sure that their orientation perfectly aligns with the actual directions.
4. When made on floors, the maps must ideally be engraved on the floor along with painting for longer life. Use contrasting colour road paints for better visibility and resistance to abrasion on floor.
5. Me and My World must be made on the wall at a location in corridor that is large enough and visible to all children. Ask the teachers to decide what significant features of the school, neighbourhood, city, state, country, continent, and the world they would like to depict in the visual.
6. Make sure that each design variation of Map Your World is easily accessible to children.
7. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather-proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Map Your World

Item of BaLA design work	Unit	Rate
Map of the Classroom For painting the map of classroom on table's top, the map is to be painted by a painter as required.	Number	Rs. 200
Map of the School For painting the map of school on the wall, the surface on which it is painted would be similar to that of a writing surface. The map on the floor of a platform may first be engraved with 8 to 12 wide & 6 to 8 mm deep lines on the floor and then painted with a contrasting colour using Road paint.	sqm	Rs. 620
Me and My World For painting the map on the wall, the surface on which it is painted would be similar to that of a writing surface. The maps can either be printed maps as per the entire satisfaction of engineer-in-charge.	Number	Rs. 2500

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.
 Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Map Your World

- Map of the Classroom - Painting work
- Map of the School - Painting work
- Map of the District / State - Painting work
- Map of Country - Painting work
- Map of World - Painting work
- Me & My World - Painting work
- Activity Space to play with Mud & Sand - Civil Work



09. Planetary Orbits on the Ground

What are Planetary Orbits on the Ground ?

*Twinkle twinkle little star
How I wonder what you are!
"What are these twinkling stars? What are planets?
Do they move? How?
Why does winter change into summer?"*

“What are these twinkling stars? What are planets? Do they move? How? Why does winter change into summer?”. These are questions that fascinate every young child, but are not so easy to answer.

Planetary Orbits on the Ground captures the fact that children enjoy revolving around poles or anything that allows circular motion. In using this, children can actually become planets and move along the orbits, which this design idea allows. Since this idea uses the natural inclination of children to move around circular objects, the space around flagpole or pillar is a suitable location. Accordingly, the shape of the orbits would be circular and not elliptical. They can experience the rotatory and revolutionary movements of planets through the actual movements of their own bodies. This could become an experiential base for children to internalise and relate to, while dealing with more advanced ideas of planetary movements in their text books.

Design variations of Planetary Orbits on the Ground

Simple Planetary Orbits with nine concentric circles around a pole in open ground.



Children have natural behaviour to revolve around a round pole. Here, this natural behaviour can be used to make them understand planetary motion and orbits. Orbits in the form of these concentric circles / ellipsis are painted with road paint on a platform. This platform can be already existing or made afresh. The central pole must be sturdy. If possible, the orbits and the shapes of the planets must also be engraved for longer life.

Planetary Orbits with Twelve Divisions and four sections of different surface textures in the open. The above shown orbits can also have twelve radial divisions (not shown above) to depict 12 months in the earth's year and understand the change in seasons.

How will these BaLA ideas help children ?

Planetary Orbits are useful for all grades from I to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory development

- Using body movements to experience rotation and revolution, and understanding the difference between them.

Facilitating understanding

- Relating the movements of rotation and revolution to that of planets.
- Understanding that planetary bodies move around the sun in paths called orbits.
- Understanding that one complete revolution is equal to one calendar year.
- Experiencing the twelve months in one calendar year through the divisions provided.
- Understanding the four seasons through the variations in the materials used in the four sections.
- Since the orbits of different planets are not equal, so the length of time that one revolution takes for each planet is different.
- Understanding that some natural phenomena occur as repeated cycles in a continuous flow.

Social and emotional

- Experiencing fun and enjoyment.
- Using the format provided for playing jumping, number and other games.

How to make Planetary Orbits on the Ground?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Make nine concentric circles on a flat even platform that is at least 6m x 6m. If possible, engrave these circles on the surface and later use road paint of contrasting colour to make them.
3. The circles are to be subdivided into four parts with thick lines and further into twelve parts in thin lines.
4. Erect a perfectly vertical sturdy metal pole with rounded top using a mason's plumb bob at the centre of the concentric circles. This pole can also be the flag pole of the school.
5. These orbits can also be made on soft ground with bricks as shown in photographs.
6. Some aspects of this idea will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Planetary Orbits on the Ground

Design variation	Item of BaLA design work	Cost / Unit*
Simple Planetary Orbits (on platform)	Engraving and painting the concentric circles on an existing platform complete with erecting a 50mm dia. MS pole in the centre	Rs. 1500 / Number
Simple Planetary Orbits (on ground)	Providing and fixing vertical brick on edge circles on ground with radius of smallest orbit = 0.64 m and biggest = 6.01 m	Rs. 5000 / Number
Planetary Orbits with Twelve Divisions	Providing and fixing vertical brick on edge circles on ground with radius of smallest orbit = 0.64 m and biggest = 6.01 m, along with sand and mud in-fill as per design.	Rs. 6500 / Number

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Planetary Orbits on the Ground

- Simple Planetary Orbits - Civil work and Painting work
- Planetary Orbits with twelve Divisions - Civil work and Painting work

II. Understanding the Passage of Time in our Daily Life

10. Time Devices

What are Time Devices ?

What is the time?

Who ran the fastest?

How long did it take?

Why did the shadow of the wall move through the day?

Time is often a difficult concept for us to understand. It is more so for young children. Children come from varying backgrounds, and may have different perspectives to comprehend time and ways to measure it. This design idea has attempted to address some of the different ways of understanding and measuring time.

The **Time Devices** in the built environment use different bases for measuring time ranging from the movement of shadows in the sundial to the flow of sand in an hourglass. These devices are neither electrically operated nor mechanically sophisticated and can be made with rudimentary materials in the schools. By incorporating these in the building, children are provided with concrete experiences and opportunities to actively manipulate and link time to their daily life experiences. This is not possible through textbook representations. Children can experience these varying types of time devices through play or a variety of enjoyable activities.

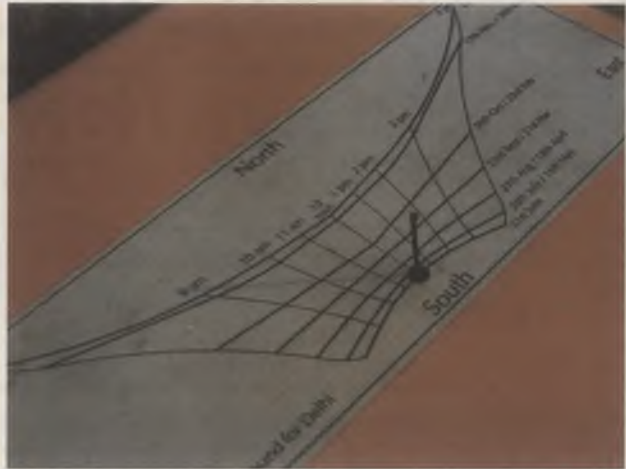
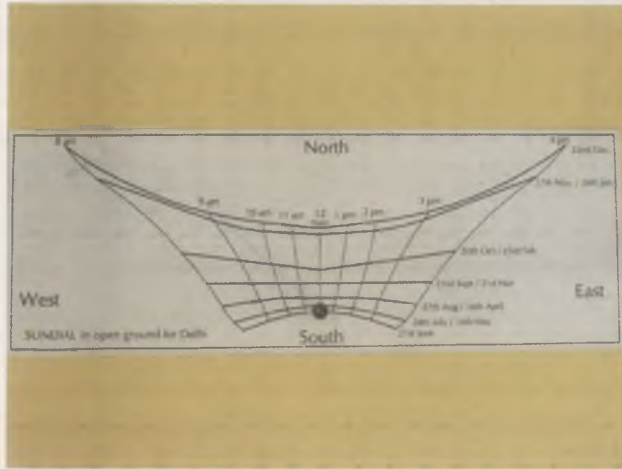
Design variations of Time Devices

Wall Clock with manipulative hands and writing surface to conduct time related activities.



These wall clocks are to be made in classrooms. The dial is painted white with markings in black and red as shown. Provide a darker colour writable surface around (shown in dark yellow here, it can be black or dark green also) for children and teachers to write events related to time for better understanding. The clock hands are in metal flats and fixed using a good quality rowel plug. The hands must not be sharp or pointed for child safety.

Sundial on the Ground in outdoor spaces to see the day time throughout the year.



Sundials are to be made on open platform in the outdoors with a 1 meter high pole to be erected at the centre, near the southern face of the platform. Thereafter, readings have to be taken as given below and shadow of the pole marked on the platform such that the marking may stay for a year. Later after several such reading are taken, the lines will need to be joined with painted lines. These lines will be painted with road paint of suitable contrasting colour.

Where can you see these ideas in Delhi ?

You can see some of these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B- Block, Savda Ghevra
2. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Time Devices are useful for all grades from I to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Sensory Perception

- Visually perceiving the movement of shadows or the flow of sand to experience the passage of time.

Facilitating understanding

- Experiencing and identifying different ways of measuring time.
- Actually experiencing different units of time, like one-hour, ten-minutes, one-minute, in concrete ways and through this, understanding different lengths of time.
- Using timers for comparing the time taken by different children to do a range of activities, such as racing between fixed points, doing ten sums and so on.
- Appreciating standard and non-standards measures of time, for example identifying the time of the day with familiar daily sounds or from the length of shadows.
- Linking time spans to real life activities such as yesterday, next year, 10 seconds later, etc.
- Linking the passage of time to natural phenomena such as the movement of the earth around the sun.
- Providing opportunity to do textbook related time tasks in concrete ways, with proper understanding.

Social and emotional

- Learning through fun and enjoyment.
- Opportunity for interaction.

How to make Time Devices?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Wall clocks with writable surfaces around the dial must be made in each classroom.
3. Sun dials can be made in open ground with clear east, south and west sides on a flat even platform. Make nine concentric circles on a flat even platform that is atleast 9m x 4m.
4. To make the sundial, first ensure the correctness of the true north with a compass and sun shadows. The platform with side 9m long will be along West-East axis and that 4m along North-South. On this, erect a perfectly vertical 1m high (1 m above the platform top level) sturdy metal pole with rounded top using a mason's plumb bob on the southern edge of 9m side at its centre.
5. Readings of shadow of this pole will have to be taken for one whole year by teachers at students on following dates, at every hour interval to make the dial: 21st June, 28th July, 27th August, 23rd September, 20th October, 17th November, 22nd December, 26th January, 23rd February, 21st March, 16th April, 16th May. For each hour, i.e. 7am, 8am, etc. till 6pm on these dates (one date in each month) and establish the shadow of the tip of the 1m long pole on the platform. Once the entire set of such readings is complete in one year, the dial can be painted by joining these points to make the dial.
6. If possible, engrave these dial lines on the surface and later use road paint of contrasting colour to make them.
7. Components of this idea will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost making Time Devices

Item of BaLA design work	Unit	Rate
Wall Clock Construction of round shaped wall clock on the wall surface of 60 cm diameter over a writing surface made by cement plaster in two layers. To be made as chalkboard surfaces. The hour & minute hands of the clock made of mild steel flats (18mm wide, 4mm thick & length 75mm & 125mm long respectively), pivoted at its centre with arrangement as shown in the figure. Hours and minutes are to be painted/ written outside the movement zone of the minute hand. Beyond this 125mm wide circular border is to be provided as writing surface.	Number	Rs. 400
Sun Dial Engraving and painting the Sun dial as per design on an existing platform complete with erecting a 50mm dia. MS pole in the centre	Number	Rs. 1750

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs.= Indian Rupees, Sqm. = Square meters

Which skill will be needed to make Time Devices

- Wall Clock Painting work/ Civil work Carpentry work
- Sundial on the Ground Civil work and Painting work

11. Calendars on Walls

What are Calendars on Walls ?

How many days are there in a week?
How many weeks are there in a month?
Days, weeks, months and years
They do confuse us, Oh dear!

Daily life events and experiences that children may have vary tremendously in terms of time. Some events happen within a minute or two, others take an hour, while still others take a day, month, year or even longer. It is difficult for young children to comprehend the passage of time, particularly over longer time spans since it is abstract and so varied. One way, in which this complexity of large time spans can be made more comprehensible for young children, is to get them to actively interact with a calendar and relate it to their different daily life experiences. This can be enhanced through time related visuals, depicting seasons, social and other events.

Calendars on walls have a permanent reusable wall surface made for this purpose. This has many advantages. Children can actually create their own calendar in the frame provided; they can colour or write on it to understand the system of a calendar. A border around the calendar can provide time related visuals to reinforce the children's understanding. Since these calendars would be physically accessible, there are several possibilities of interacting with them in interesting ways to understand different time spans in a child's daily life.

Design variations of Calendars on Walls

- Calendars for Classroom

Long Calendar is a linear format depicting three months.



Depending upon the space available in the classroom, these calendars can be made square or linear. The calendars are painted with blank grid and children are supposed to perform their activities as shown here. The square calendar can also have a clock. The border around the calendar can be used to depict seasons, as shown above.

Square Calendar with Clock depicts three months along with a clock

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B- Block, Savda Ghevr
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Calendars on Walls are useful for all grades from I to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Facilitating understanding

- Using the calendar to understand different time spans such as days, weeks, months, years and relating these to daily life.
- Understanding the time required for doing different activities; understanding the rudimentary concept of time management.
- Classifying life events and experiences into daily, weekly, monthly or seasonal activities.
- Developing life skills such as making daily plans, weekly timetables and so on.
- Understanding natural phenomena such as day and night, seasons or climatic and weather changes and relating them to the calendar.
- Experiencing the cyclic nature of the calendar.
- Relating the calendar to real life experiences such as making weather or temperature charts.
- Reinforcing language and vocabulary related to the passage of time, such as before, after etc.
- Promoting number sense and mathematical skills by relating such activities to the calendar.
- Using the calendar for recording the frequency of events and presenting the information collected, by making bar-graphs or pictographs.
- Relating social, cultural and school events to the calendar.
- Reinforcing cultural and aesthetic appreciation through visuals in calendar.

Social and emotional

- Experiencing opportunities for peer interaction.
- Experiencing learning in non-threatening ways through fun and enjoyment.
- Developing a sense of belonging and a positive self-image, through experiences that are connected to one's daily life and the real world.

How to make Calendars on Walls?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Calendars are to be located in all classrooms. For most classes, Long Calendar for three months is recommended.
3. First make the chalkboard writing surface as base for the Calendar grid. Then make the blank Calendar grid for three months over this surface. Teacher and children are supposed to write and rub over this Calendar grid for classroom activities. The border along the calendar can be used to illustrate a point or give a title to an activity, etc.
4. In grades I to V, the Wall clock can also be combined with Calendar. This is called Square Calendar with clock.
5. Use matt finish green board paint to paint the base of the calendar writing surface after the surface is cured with water for 15 days and is dry.
6. Paint the blank calendar grids with white/ off white/ light green.
7. Make a duster and chalk keeping niche near the calendar for ready accessibility of such materials during use of calendar activity.
8. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Calendars on Walls

Item of BaLA design work	Unit	Rate
Calendars for Classroom Construction of long calendar is similar to that of plain writable surface including border. The composition of 3 months is painted by a painter on a writing surface.	Number	Rs. 610

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Angles Around Us

- Calendars for Classrooms - Civil work and Painting work



12. Cycles Around Us on Circular Built Elements

What are Cycles Around us on Circular Built Elements?

*Round and round and round I go
Some journeys end, some onwards heave ho!*

Children have a natural tendency to swing around the built elements like circular columns, pillars, and flagpoles in a cyclic movement. Children can also be intrigued by the fact that such circular planes have no beginning or end. At the same time, teachers are struggling to find ways to illustrate cyclic events that exist in nature. These facts have been combined together in this design idea, which attempts to visually represent cyclic events on circular columns, poles and other circular planes of built elements.

Circular surface of pillars and columns can be used to visually present concepts and ideas, which exist as continuous cycles in the real world. Some of the cycles, like a Food Chain have a beginning and end, while others such as the cycles due to the planetary movements like phases of the moon, exist as spirals that are endless. These can provide interesting physical and visual stimulation to the children. They can also spark the children's curiosity and make them look for a host of other similar cycles in their physical and experiential world.

Design variations of Cycles Around us on Circular Built Elements

Continuous Cycles with Beginning and End on circular surfaces which are of limited vertical height, and can have a representation of only a single cycle, such as circular base of a flag pole.

Continuous Cycles without Beginning or End on circular surfaces that offer a continuous vertical circular plane like a circular column or pillar, on which a cycle can be represented as a spiral.



Various cyclic concepts such as the water cycle, germination of a seed, phases of the moon, the seasonal cycle, etc. can be painted on the curvilinear face of the circular columns. This can be done in schools that have such columns in the corridors. Children are likely to move around such pillars, hence make sure to make the platform around it also respond to this need.

How will these BaLA ideas help children ?

Cycles Around Us are useful for all grades from I to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory development

- Physically and visually experiencing cycles while going through circular motion.

Facilitating understanding

- Becoming aware of cycles in the real world / natural phenomena.
- Understanding some cycles that have a beginning and end, and others that continue endlessly in a spiral such as planetary motions and seasons.
- Understanding cyclic time.

Social and emotional

- Having fun

How to make Cycles Around Us ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Cycles Around Us on Circular Built Elements

Item of BaLA design work	Unit	Rate
Cycles painted on circular surfaces For the making of cycles around us, the visuals can be painted with enamel paint on the vertical circular surface.	Number	Rs. 300

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Cycles Around Us on Circular Built Elements

- Cycles around us on Circular Built Elements - Painting work



III. Dealing with Numbers

13. Tangram shapes on Walls

What are Tangram shapes ?

*All we need is a square
Cut in seven parts, with some care
Apply your mind and make wonderful shapes
Lo and behold...
see the magic, as it unfolds
This is the age-old game of Tangram*

Tangram tiles are based on the geometric puzzle of seven pieces: Tangram. Tangram is a thousand-year-old puzzle from China. A square is cut into seven geometric shapes. These seven pieces could be arranged in thousands of ways to create human figures, animals, geometrical shapes, alphabets and so on. The essential condition in a Tangram puzzle is that, to make any shape all the seven pieces must be used. That geometry can be fun and one can see geometrical shapes in the objects and people that surround us, is realised by the teachers for a long time. But very often, because of preoccupation with several other tasks, such realisations do not materialise into an activity with children. Tangram immediately releases the geometrical shapes and their property to combine with others from the confines of the formal book to a world of visual enrichment and creativity. After understanding the underlying principal of a Tangram puzzle to make any object, children can evolve their own shapes and forms.

Tangram shapes either as painted shapes or tiles cut in shapes on the walls is an innovative use of waste square tiles to create a visual stimulus. Tangram shapes let the puzzles and their solutions readily accessible to the children and teachers in the physical space that surrounds them. For tiles, very often waste or leftover ceramic tiles in an assortment of colours and sizes are available with tiles dealers at highly discounted prices. Such square tiles can be sorted and bought, to be cut into Tangram shapes. While repairing or laying a floor or a patch in a wall, such tiles can be used. Using a Tracing Tile with Tangram shapes engraved on it, children can make their own pieces of the puzzle with waste chart paper.





Tangram shapes can be painted on walls and large pillars, especially in the corridors. Whole range of shapes that can be made with Tangram can be painted. Remember to make a square without divisions, one with seven Tangram shapes with numbers on it and one of the shapes for children to understand that it has been made with these geometrical shapes. The complexity of its use can be decided by the teachers from identification of simple shapes to determining area of whole shapes and that of its parts. It will be useful to provide a small cubby hole to keep duster and chalk near a Tangram shape board.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B- Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Tangram Tiles are useful for all grades from I to V. Teachers may decide to increase complexity in ideas for higher grades.

Visual and spatial perception

- Enhancing spatial perceptions through experiencing the various orientations of a given shape.
- Enhancing the power of observation and visual discrimination while trying to recreate a given figure.

Facilitating understanding

- Understanding of basic geometrical shapes.
- Understanding the interconnections between geometrical shapes.
- Problem solving and logical thinking to try and evolve the given shapes and figures by using the seven given pieces.
- Developing creative thinking.

Social and emotional

- Fostering imagination and creativity.
- Providing opportunity for sharing and working together.
- Developing aesthetic appreciation.

How to make Tangram Tiles ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Tangram Tiles on Floors and Walls

Item of BaLA design work	Unit	Rate
Tangram Tile For making tangram tiles on wall, cutting square ceramic glazed tiles into seven pieces and fixing it on the wall, in the patterns as shown in the figure, in cement mortar 1:4 (1 part of OPC 43 grade: 4 parts of fine sand).	Number	Rs. 50

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Tangram shapes on Walls

- Tangram painted on wall Painting work
- Tangram shapes on tiles Civil work



14. Fraction Aids

What are Fraction Aids?

Fractions in the wall, fractions in the grill

Fractions to look at, fractions to fill

They're hiding on the floor, and in tile patterns too

So many types of fractions, simply waiting for you!

The mere word “Fractions” seems to bring up associations of being difficult and confusing, for children. Teachers seem to be struggling for ways to make them simple, while children seem to be groping in the dark, unable to understand them. In most schools, the abstract concepts related to fractions continue to be beyond the grasp of a large number of children. The built space offers various possibilities of experiencing fractions in concrete ways.

Fraction Aids offers a range of varied concrete experiences of fractions, in ways that children would enjoy and understand. Trying to understand how many equal parts of a whole object you have is so much easier when you can actually see and feel the 'whole' object and its various equal 'parts' or 'fractions'. The built space offers several opportunities for doing this. Whether it is the tiles on a wall or floor, sections of a grill, paved sections of a circle on a ground, or even leaves in a natural setting, fractions can be experienced in several real ways. This makes them easier to understand.

Design variations of Fraction Aids

Fractions on metal Grills for classes III, IV and V.



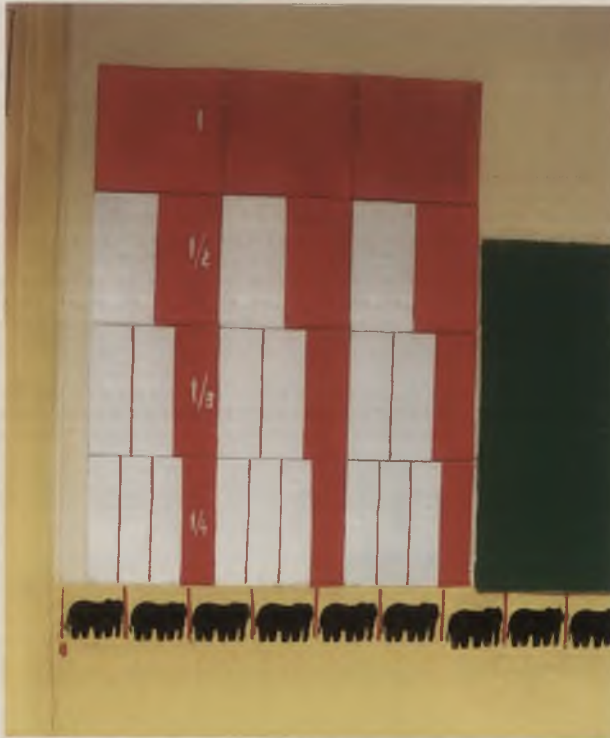
Fractions of varying complexity can be made on the window grill or the railings. It can be simple fractions starting with whole to $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, and so on to give a child a concrete depiction of the concept. Make sure to make them at a child accessible height.

Fractions on Walls to help children of class IV and V understand equivalent fractions.



These are some more interesting ways to depict fractions. The one on the left can be used to also understand fractions.

on the right has squares. Each smaller square has a area that is half of the larger one immediately next to it. Interestingly it is a ceiling plan of a shikhar of a temple from Hampi in Karnataka.



Fractions of varying order of complexities can be made in the corridors to suit the particular age and grade. The ones shown here can be either painted or made using ceramic tiles.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B- Block, Savda Ghevra
2. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Fraction Aids are useful for all grades from III to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Identifying fractions through the tactile experience of different textures on the ground, or the visual experience of different colours in the tiles.
- Understanding fractions through physical activity.

Facilitating understanding

- Identifying fractions as equal parts of different figures, objects or shapes.
- Identifying different fractions such as halves, thirds, fourths as equal parts of a given whole, and being able to distinguish between fractions and a whole.
- Visually observing and comparing fractions to tell which are bigger, smaller and equal, and arranging these in an ascending or descending order.
- Adding and subtracting fractions with the same and different denominators, first through concrete experiences with the built design ideas (the Fraction Wall, Fraction Grill or Tiles) and then expressing these as number sentences.
- Understanding fraction concepts such as equivalent fractions, reducing to the simplest forms.
- Understanding the diversity of fractions that are experienced in daily life such as in a scale, in a clock, in a cyclic calendar.
- Understanding fractions adequately, in order to represent them in different ways, i.e. orally, pictorially, in numbers, and in real life situations.
- Experiencing fractions by playing related games using the design ideas like the Fraction Disc or the Fraction Tiles.
- Developing vocabulary related to fractions and using it with comprehension.

Social and emotional

- Learning through sharing and interaction in non-threatening ways.
- Building a positive self-image through successful experiences of understanding fractions.

How to make Fraction Aids?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.

- For grills, the windows with only horizontal security bars will be ideal. On these, the whole length of the horizontal bar can be treated as one whole, while its internal partitions marked as fractions. Use different enamel colours to highlight this. The fraction numerals should also be written on the side for clarity.
- Fraction on wall tiles will be made by cutting 200x200 mm ceramic tiles of different colours and assembling them on exposed wall surface as per design, as shown. The fraction numerals should also be written on the side for clarity. Higher grade children can use this for understanding concepts of LCM, etc.
- Fraction on floor tiles can be done with tiles cut to geometric shapes and inlaid on floor at 40 to 50cm centre to centre along the corridors.
- Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Fraction Aids

Item of BaLA design work	Unit	Rate
Fractions on Wall Tiles Construction of fractions on wall by arranging leftover assorted ceramic glazed tiles to illustrate fractions in a horizontal row. The ceramic tiles are to be fixed by cement mortar 1:4 (1 part of OPC 43 grade:4 parts of coarse sand). The first row from the top has tiles of a specified length. The tiles in second row are exactly half the length of the tiles in the first row. The third row has three tiles fitting into the same length.	sqm	Rs. 450
Fractions on Window Grill Fractions on the existing window grills using paint.	sqm	Rs. 50
Fractions on the existing window grills using MS flat.	Number	Rs. 20

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sq.m. = Square meters

Which skill will be needed to make Fraction Aids

- Fractions on Metal Grills (Painting) Painting work
- Fractions on Metal Grills (MS Flat) Fabrication work
- Fractions on Wall (Painted) - Painting work
- Fractions on Wall (Tile) Civil work and Painting work



15. Magic Squares on Floor and Walls

What are Magic Squares ?

Can you make a square where

You add up the rows

Add up the columns

Add up the diagonals

Lo and Behold!

Out comes the magic sum

It's always the same!

Magic fascinates children. There are immense possibilities of magic with numbers. If the magic and trick behind it are gradually disclosed, this could become an engrossing way to initiate children to the magical world of numbers. Using and making a Magic Square is one such way.

This age old fascinating mathematics puzzle can be simply made available to the children within the built space of the school. The design variations can address different levels of complexity, so that they can be used by children of different ages. A Magic Square in the built environment is just a small grid of 3 x 3 (9) or 4 x 4 (16) squares placed at child accessible locations where they can be played with, or discussed in a small group. The square formats for these can also be used in a variety of other ways. Such square formats can be made while repairing the wall plaster or a floor.

Design variations of Magic Squares on Floor and Walls

3x3 (9) Magic Square in spaces used by younger children (preferably of classes II and III).

4x4 (16) Magic Square in spaces used by older children (preferably of classes IV and V).





Magic squares are fun ways to interact with mathematics. A sample of such squares can be made with numbers filled in for children to identify patterns in numbers. Some blank squares must be left around for children to make and again remake their own magic squares. These can be made in corridors, outdoors, alcoves, etc.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Magic Squares are useful for all grades from I to V. Teachers may decide to increase complexity in ideas for higher grades.

Facilitating understanding

- Developing creative thinking by using the 3x3 or 4x4 grid to create a variety of magic squares or different games.
- Appreciating number patterns and expressing them visually.
- Developing problem-solving abilities.
- Developing strategies and logical thinking.
- Enhancing attentiveness and concentration.
- Reinforcing addition and subtraction in a fun way.

Social and emotional

- Developing the patience and perseverance to complete the magic square.
- Developing skills of co-operation and sharing. Related settings & design ideas to Magic Squares on Floors & Walls

How to make Magic Squares?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Magic Squares on Floor and walls

Item of BaLA design work	Unit	Rate
Magic Square Construction of a filled magic square and an adjoining blank grid of total size 30x30cm, the construction of base is same as mentioned in ruled writable surface including making engraved small squares in side of the magic square, painting the chalkboard surface, painting of lines and writing numbers in the filled up magic square.	sqm	Rs. 450

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Magic Squares on Floor and Walls

- 3x3 (9) Magic Square Civil work and Painting work
- 4x4 (16) Magic Square - Civil work and Painting work



16. Number Lines

What are Number Lines ?

*Two and three gives five
Take four from five, you get one.
So many numbers on my number line,
So many easy ways to do my sums !*

Children count or encounter numbers while playing with or manipulating real objects. As they grow older they begin to see numbers in the form of written symbols. This transition gets even more evident as they go to the school. The shift in dealing with numbers by using actual objects, to doing number work mentally, or by using number symbols, can be difficult for young children. The number line is a tool that facilitates this shift. By moving forward on the number line boxes while adding, or moving backward while subtracting, children are helped to visually understand the mathematical operations that they are doing. The number line also helps them to understand the progression of numbers and the order in which they are arranged.

A Number Line, as depicted in this design idea, is a sequential arrangement of numbers in ascending or descending order. It could be made on a wall, on the ceiling, floor, steps or wherever linear movement of the eye or body is naturally possible. Numbers can be painted, embossed or engraved on tiles or stone slabs that are arranged in eye-catching, linear formations. Such Number Lines become useful aids for teaching and learning various mathematical operations, in concrete ways that children enjoy and can understand. Since they are accessible all the time children can see, touch or feel them, and thus learning becomes more experiential. They may use the number line to play games, or even jump on the numbers in different ways to arrive at given different totals or combine numbers in different ways.

Design variations of Number Lines

Floor Number Line Tiles and Panels: Number Line on Paved Floor and Stepping Stones as Number Line in corridor, semi-open and outdoor spaces.





Number lines are interesting ways to understand numbers in different ways. As stepping stones, children just love to jump on them. This can be used understand counting, ascending or descending numbers, even or odd numbers, etc. As stepping stones, they must ideally be engraved and painted with road paint for longer life. On steps, they can be painted on the treads in different ways.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Number Lines are useful for all grades from I to III. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Exercising the body by jumping, hopping and running.
- Learning through body movements.

Facilitating understanding

- Facilitating counting by understanding that each number has a unique place or order, for example the number 2 is after 1, before 3 and between the numbers 1 and 3, and so on for each number.

- Moving forwards and backwards on a linear number line, to do adding or subtracting of numbers or moving up and down if the number line is on steps, and in the process understanding addition and subtraction.
- Understanding number patterns and multiples by counting in 2s, 3s, 4s, and so on.
- Developing and improving computational skills by using the number line as a visual support.

Social and emotional

- Using the number line for playing various games.
- Generating interactive learning situations.
- Building a positive self-image by being able to achieve success in doing number work.

How to make Number Lines ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Number Lines

Design Variation	Item of BaLA design work	Cost / Unit*
<ul style="list-style-type: none"> • Number Line Caterpillar • Number Line Train Number • Number Line in a row of Children 	10 x 10 cm Ceramic Tiles on Wall Plaster with painting of shapes and painting of numerals. with 0.3 m high band and 3.33 m wide (1 sqm area)	Rs. 330 / Rm.
<ul style="list-style-type: none"> • Number Line on Paved Floor • Stepping Stones as number line 	Paving Stones, 4cm thick and 30 x30 cm size with base concrete	Rs. 335 / Sqm.

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Number Lines

- Floor Number line tiles and panels Civil work and Painting work



IV-Ways of Interacting with Language

17. Prewriting Aids

What are Prewriting Aids?

*Ten little fingers want to do well,
Where do they go to gain some strength?
Ah, see those alphabet patterns in the window grills,
Move little beads along and build finger movement skills,
Follow alphabet patterns made in lines on the walls,
Prepare little fingers to learn Prewriting,
even when they are small.*

Prewriting is an activity that requires the fine motor co-ordination of finger muscles. The finger muscles of young children need to be strengthened and developed for this purpose. Very young children initially use the movement of the shoulder for scribbling and drawing. As they grow older this movement shifts from the shoulder to the elbow then slowly, with practice, to the wrist and finally to the fingers. To develop finely controlled Prewriting movements, children need to learn to freely move their fingers and wrists in a predetermined and controlled way, and at the same time they also need to develop suitable finger grips for holding their pencil. It is only after children attain mastery over both these skills that they are able to write alphabets properly. Developmentally, this happens naturally by the age of around six or seven years when most children are ready to do Prewriting tasks that require small, controlled strokes, such as Prewriting within small spaces or between closely spaced lines, like those in a note book. However, to arrive at this level of competence, children need to go through a process of initially using large free space to scribble, gradually moving to broadly spaced lines, and finally to the note books. A school building can bridge the gap between the curricular need of Prewriting alphabets and the developmental process of acquiring finger and wrist movements required for writing. It offers exciting possibilities of learning manipulation of fingers and also provides a varying range of spaces for this purpose.

Prewriting Aids use different built elements to provide a variety of ways and spaces for little ones to practice wrist and finger movements required for writing. By using these aids, young children can copy and create patterns that are inherent in different alphabets. They also provide patterns with grooves on a wall for children to trace with their finger movements, or rings that can be moved along patterned window grills. Notebooks can be very restrictive for very young children to write in. The space they offer is confined and not adequate for the gross movements that these young children make while trying to write. However, the building offers readily available, accessible surfaces that provide the larger surface area required by children to be able to practice Prewriting movements freely. This design idea therefore tries to combine fun while children develop the muscle control and skills required for writing.

Design variations of Prewriting Aids

Prewriting Patterns on Wall Surfaces to practice finger movements for writing alphabets.



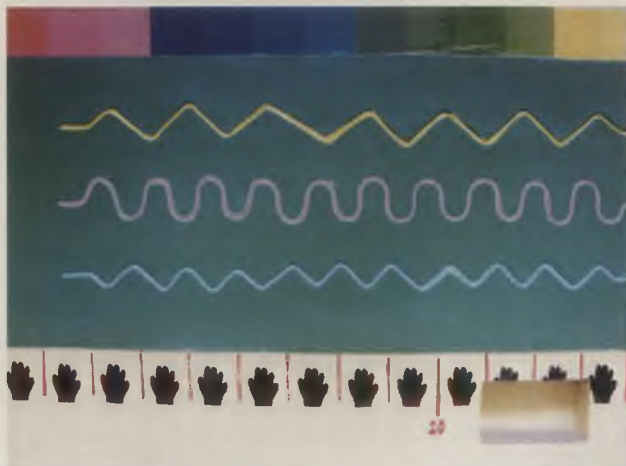
These are writing surfaces for children to develop their little hands for writing alphabets. A painted guide on the top will help them to practice various shapes. The spacing of the ruled lines must be 10 to 15 cm, as desired.

Prewriting Patterns on Window and Railing Grills for moving beads to practice wrist movements.



These metal window security grills or railing can be made at the time of new construction. The shapes have been worked out to prepare the gross and fine motor movement of the shoulder, elbow and wrist to prepare for writing various alphabets. Modification in existing grill needs to be done only upto the child accessible heights.

Grooved Prewriting Patterns on Walls to trace and strengthen finger muscles.



These grooves can be made in the corridors, where children are likely to touch the wall surface while naturally moving. The grooves are smooth and round in shape so that little fingers are not hurt during movement. These can be painted in different colours.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)
2. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Prewriting Aids are useful for all grades from I to II. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Developing and strengthening finger muscles.
- Developing the skills of finger and wrist movement within a confined space.
- Developing finer motor and eye-hand co-ordination.
- Developing visual discrimination by relating the finger movement patterns to the shapes of different alphabets.

Facilitating understanding

- Understanding the directionality required for Prewriting, for example in the case of Hindi and English it is left to right, while for Urdu it is right to left.
- Learning appropriate grip (pencil grip) for Prewriting.
- Learning alignment by making patterns within ruled spaces.
- Learning appropriate spacing within and between patterns, which would later transfer to words and alphabets.
- Using the patterns for recognising and Prewriting different alphabets.

Social and emotional

- Developing motivation to write and associating Prewriting with fun.
- Appreciating beauty and taking a pride in presenting beautiful Prewriting.
- Developing aesthetic appreciation through the range of cultural motifs and patterns on which some of the Prewriting patterns are based.

How to make Prewriting Aids ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Locate these in grades I and II classrooms only.
3. For window grills, 10mm dia. MS rods / Bright Steel rods shall be bent to designed shapes complete with assembly along with steel / wooden beads, edge grinding, rounding, cleaning the surface of splinters.
4. These will be painted (metal portion) with metal primer (wooden portion) with wood primer and finally painted with suitable bright coloured enamel paint in two or more coats.
5. Ensure that the movement of beads is smooth.

6. For pre-writing grooved patterns, the grooves will be made on the top coat of a plain writable surface plaster by punching the specimens of pre-Prewriting grills on the setting top coat. This will need to be neatly finished for smooth finger movement of the children. To be painted in bright enamel colours after curing.
7. Style of all text painted should be similar to that given in the text books and not artistic type.

The estimated cost of making Prewriting Aids

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Prewriting Patterns on Window Grills Providing and fixing 10mm dia. MS rods. 	sqm	Rs. 1400
<ul style="list-style-type: none"> • Prewriting Patterns on Wall Surfaces Construction of Prewriting pattern on wall surface after removing old plaster and raking out of joints upto 1cm. Then ruled writable surface is to be constructed as mentioned in the item of ruled writable surface & painting of visuals on top. 	sqm	Rs. 450
<ul style="list-style-type: none"> • Prewriting Grooved Patterns on Walls Prewriting Grooved Patterns on wall surface are made with two layers i.e. base coat of 12mm in cement plaster 1:4 (1 part of OPC 43 grade: 4 parts of finely sieved sand of particle size not more than 1mm) applied over a nailed chicken wire mesh (24 gauge). The base coat is allowed to dry for about 12 hours. The next coat of 12mm thickness is applied in 1:2 (1 part of OPC 43 grade: 1 part of fine stone dust + 1 part of fine sand). while the plaster is wet, guide lines with indigo dust or chalk are made to make the grooved patterns. The tracing film with its guidelines is aligned accordingly to transfer the patterns. After the tracing film is removed, 18mm wide and 3mm thick mild steel flat with a 'U' tip is used to make the grooves. After the groove is made, cement and marble dust in 1:1 in the form of slurry can be applied on this groove to smoothen the surface. 	sqm	Rs. 550

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Prewriting Aids

- Prewriting Patterns on Wall Surfaces Civil work and Painting work
- Prewriting patterns on Window & Railing Grills Fabrication work and painting work
- Grooved Prewriting Pattern on Walls Civil work and Painting work



18. Writing and Displaying Surfaces

What are Writing and Displaying Surfaces?

Boards to look at, read and learn

A place to share all that you've done

Pin up pictures, write, paste and draw

Share interesting ideas with everyone!

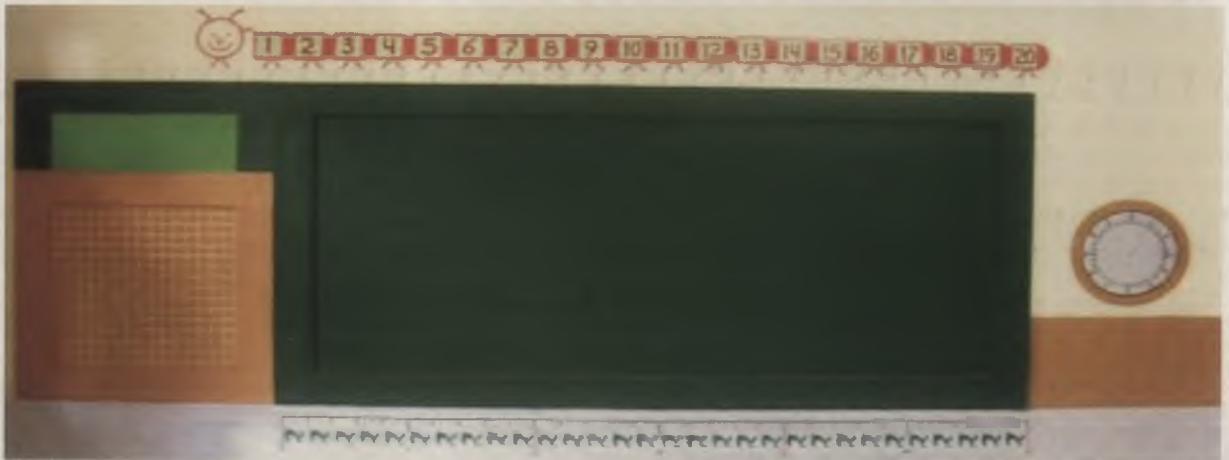
The transition from home to school for a young four or five year old child includes a shift from a spoken mode of communication to one that largely engages with written words. This can be quite threatening for several children, who have limited exposure to printed material of any kind at home. We know that reading and writing are complex processes with which children or adults engage actively to construct some meaning. Within schools, it is likely to happen best when the environment is non-threatening. Children have lots to share and express, provided they feel free and comfortable to do so. However, most reading and writing in a school, happens within pre-determined curricular frameworks, often disconnected from the child's world. Children often read and write about things that are unfamiliar and not meaningful to them. To compound this, the focus is on reading and writing “correctly”. There isn't enough space or opportunity for the children to share their own ideas and free written expressions. Children tend to get caught up with the techniques of reading and writing in regulated and mechanical ways, so that these activities become a struggle. An environment in which children enjoy writing and reading has to be consciously designed in a school. This is especially so for a large number of children who come from oral traditions where the written word is not the natural form of communication. Scribbling, drawing and writing on different surfaces is a part of children's natural growing up behaviour. A literacy environment can be designed to enhance this natural behaviour. Such an environment needs to ensure ample opportunity to write, read, look at written words and share what is written, in friendly interactive ways that children enjoy and that are linked to their daily life experiences. To do this, it is essential to create spaces for free and interactive written communication of this sort.

This design idea addresses this need. The wall surfaces have been treated in special ways, so that they offer suitable surfaces for writing, drawing and displaying. These wall surfaces and boards can be dispersed in various locations to either create interactive spaces or become part of an existing interactive space. Here children can freely express themselves through writing, as well as, share information or their work, by pasting or pinning up written material and art work.



Design variations

Chalk Board on Walls for classrooms, based on anthropometrical data of children of different ages.



The main chalk board should be such that it can be used the teachers as well as the children. It need not always be black in colour it can be dark green, as shown. The surface must be perfect balance of smoothness and roughness such that it is comfortable to write with chalk.

Pin-up Boards on Walls for classrooms and other settings.

Ruled Writing Surfaces on Walls



Pin-up boards are important display surfaces for children to communicate in different ways exhibit creativity, share their work, see other's work, feel inspired and so on. The high density foam rubber sheets are glued to a wall surface with rubber solution and a writable border made on all sides.





Ruled writable surfaces are especially useful for children who are learning to write a new language. Depending upon its usage for English or Hindi, the ruled lines can be painted on existing chalk boards or on new boards. Care should be taken to make some boards that are at a child friendly height. The height of rules can be decided by the teachers. The pattern and colour of ruled lines must be same as that in the note books to avoid any confusion.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Writing and Displaying Surfaces are useful for all grades from 1 to X. Teachers may decide to increase complexity in ideas for higher grades.

Visual and tactile sensory perceptions

- Experiencing visual and tactile stimulation.

Facilitating understanding

- Developing a range of reading skills through a supportive print environment that displays a variety of written material for the children.
- Developing a range of writing skills in non- threatening and enjoyable ways.
- Experiencing a rich exposure to a wide variety of ideas and information both written and pictorial, and through this enhancing thoughts, ideas and language skills.
- Learning to express and share ideas and experiences through writing and drawing in a variety of creative ways.
- Developing the skills of interactive communication through the written or pictorial form, including the skills of critical appreciation.
- Learning the skills required for displaying material effectively.

Social and emotional

- Being motivated to read and write without being afraid of making mistakes, through a supportive and non-threatening environment.
- Promoting a sense of self-worth as well as motivation to achieve better standards of work through comparison with some of the displayed work, which does not happen if the work is just confined to notebooks.
- Learning to appreciate diversity in ideas, experiences and expressions, and through this, developing mutual respect and tolerance for others.
- Promoting aesthetic appreciation.

How to make Writing and Displaying Surfaces?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Follow the specifications given below.

The estimated cost of making Writing and Displaying Surfaces

Item of BaLA design work	Rate /sqm
<ul style="list-style-type: none"> • Plain writing surfaces / Chalk Board on walls Construction of writable surface on the existing wall after removing the existing plaster from the wall and raking out the joints upto 1cm. The surface should be constructed in two layers i.e. base coat of 12mm thick cement plaster in 1:6 (1 Parts OPC of 43 grade : 6 parts of sieved coarse and of size not more than 1mm) applied over a nailed chicken wire mesh(24 gauge), finishing coat 6mm thick with pigmented cement plaster 10 : 16 : 4 (10 Part OPC of 43 grade or less : 16 parts finely sieved marble dust : 4 parts of colour cement pigment). The board should be finished in one go and there should not be any discontinuity in between including making border etc. complete & as per the entire satisfaction of Teacher / Supervisor-in-charge. Suitable matt finish chalk board paint of colour similar to that of cement pigment to be applied over fully cured (upto 15days) and dried surface to be applied in two or more coats as per the entire satisfaction of Teacher / Supervisor -in-charge. 	Rs.450
<ul style="list-style-type: none"> • Ruled writing surfaces on walls Construction of ruled writable surface as per the procedure mentioned in writable surface. In addition to that the markings of perfectly horizontal ruled lines is to be made 10cm apart. The ruled lines should be engraved slightly. A contrasting colour to the base can be neatly enamel painted to make the lines. The lines must be of consistent thickness not more than 8mm. Visuals painting on the writing surface is also to be made complete as per the entire satisfaction of Teacher / Supervisor -in-charge. 	Rs.500
<ul style="list-style-type: none"> • Pinup Board with rubber sheet Construction of pin-up board is similar to that of writable surface except the finishing coat is done only on the border. The 15mm thick GP rubber sheet of shade and density to the satisfaction of the Teacher / Supervisor -in-charge to be cut to snugly fit within the border. On the plain cement plaster surface 15mm thick GP rubber sheet to be pasted with rubber solution adhesive of Fevicol SR brand or equivalent that will be evenly applied on both the surfaces that are to come in contact. After the adhesive is dry, the sheet to be pressed against the wall. 	Rs. 600

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

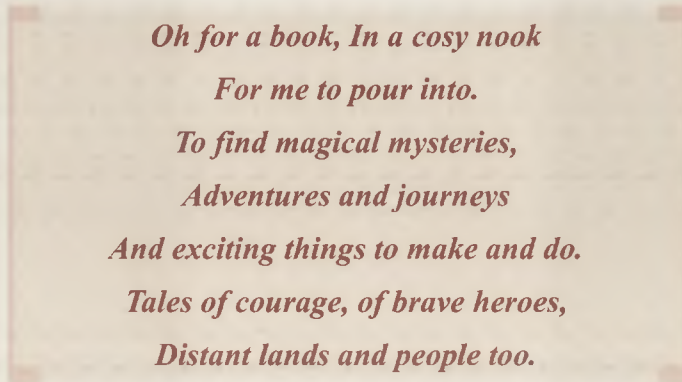
Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sq.m. = Square meters, No. = Number.

Which skill will be needed to make Writing and Displaying Surfaces

- Chalk Boards on Walls - Civil work and painting work
- Pin-Up Boards on Walls Civil work and carpenter
- Ruled Writing Surfaces on Walls Civil work and painting work

19. Book Corners

What are Book Corners?



For young children suitable books can provide windows into a wide and fascinating world. They can lure children into wanting to read, while relating to the stories or pictures in their own ways. For a large number of children such experiences with books are not possible. At home many children have little or no opportunity to interact with books, other than their textbooks. Hence reading activities tend to be largely confined to the confines of the curriculum. However, such reading experiences are limited and often disconnected from the child's real life experiences or fantasies. Children have varied interests, abilities and experiences. A carefully selected variety of story books, picture books or information books can not only entice children into wanting to read, but can also tap the inner resources that the children have. This makes their experiences with books pleasurable and exciting. There is need for a conducive reading environment in a school for this to happen. It is essential to carefully design the informal, child friendly and fairly unstructured settings (other than the school library) where children can freely interact with books and at the same time learn to care for them. Book Corner can be in the classroom or outside it. In the classroom it may be slightly more structured and formal (or teacher directed). Outside the classroom, this can be a specially created space that provides a segregated, quiet area with the right ambience for children to enjoy reading at their own pace and in their own ways.

It also tries to provide an easily accessible and lockable storage for some books. There may be a few such manageable pockets dispersed in various locations, so that children can discover settings of their own choice. To motivate children to read books, such settings are an essential component of the literacy environment within any school.

Design variations of Book Corners

Classroom Book Corner that can display 10 to 20 books along a classroom cupboard.



Classroom book corners are useful. A lockable almirah can be used to keep the books and projects relevant for that class and its shutter can be modified to double up a display for books. The curtain spring can be fixed on the shutter with screws and washer up to the child accessible height and the display of projects and books can be changed by the teacher every day. Children can read the books on their own in structured or non-structured time in the class.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)

How will these BaLA ideas help children ?

Book Corners are useful for all grades from 1 to X. Teachers may decide to increase complexity in ideas for higher grades.

Physical, finer motor and sensory

- Finer motor co-ordination required for carefully turning pages.
- Developing directionality, for example left to right progression in the case of reading in Hindi English and most other Indian scripts. And right to left progression in the case of Urdu.

Facilitating understanding

- Developing a variety of effective reading strategies in non-threatening and fun ways.
- Learning to read with understanding.
- Learning to locate facts and information.
- Building vocabulary.
- Sharing what one has read (in a logical order) through a variety of verbal, pictorial or written forms.
- Learning to select books for different purposes, for example for referencing, reading stories, riddles, jokes, etc.

- Relating to simple forms of different text types such as poetry, stories, prose, drama, etc.
- Expanding horizons through a range of literary and other book experiences.

Social and Emotional

- Reading for pleasure, and building bonds with books.
- Learning to care and share books and putting them back in order.
- Learning to take responsibility for looking after the books.
- Playing a variety of language games.
- Building imagination through fantasies and learning to express in creative, socially acceptable ways.

How to make Book Corners ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. This is a low cost display provision design classroom library to display the books. The books can be stored and locked in the shelves behind. Provision must be made to display atleast 20-30 books at a time.
3. Alternatively, the classroom book corner can be developed in any of the storage unit shutters by fixing spring wire at appropriate distance along the shutter at child accessible height.

The estimated cost of making Book Corners

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Cupboard Library <p>Cupboard Library can be made on the outer surface of the cupboard shutter with 'L' shaped, metal slats supporting the rows of books & 'C' shaped MS flats on the top to prevent the books from falling. The size of the MS flats should be 0.4cm thick & 2cm wide. The clear vertical spacing between the support and securing flat may be about 12cm, & between the supports may be about 30cm. These MS flats should be fixed on cupboard shutter using G.I bolts & nuts. After that, finishing coat of Enamel paint should be applied after applying metal primer.</p>	Number	Rs. 50

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Book Corner

- Classroom Book Corner Carpentry work



20. Play with Words

What is Play with Words?

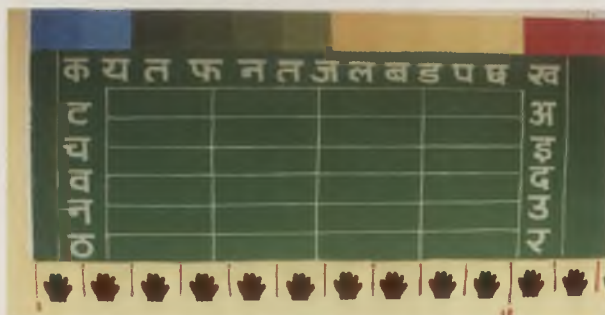


A large part of learning to read and write happens unknowingly, simply by being exposed to letters and words in the environment. Children tend to learn alphabets, words, grammatical structures or connections between words by simply looking at them over and over again. If the learning environment provides spaces where words are visually accessible to children all the time, children are likely to learn them much faster and in non-threatening ways. There is the added advantage of being able to self-correct, since children can compare what they have written to the original words that they copied from. It also provides a support to children who are beginners, or to children who have problems with spellings or reading. They can have access to words in the immediate vicinity to refer to as a resource. It also provides a space to interact with written words or letters in a variety of ways. This may encourage children who are otherwise afraid to venture into reading or writing, since it helps them to achieve success.

These design ideas are intended to be like helpful friends for children who are struggling with reading and writing. The Word Organiser provides a space for children to interact with words in a variety of ways. Through this, children may understand relationships between alphabets and words by matching, sorting, and classifying them. This idea also assists children in dealing with grammar in creative and fun ways. The Word Wall with Alphabet Border and Labelling Around Us can be used to generate and reinforce vocabulary and make it visually accessible for usage as well as for variety of language games. These design ideas serve as useful facilitators in building a conducive literacy environment.

Design Variations

Word Wall with Alphabet Border as a literacy resource within the classroom and other settings.



The word wall with alphabets is to encourage children to use letters surrounding a table to form words in the boxes given. These can be made in the classroom or immediately outside in the corridor. The letters are chosen by the teacher (and they need not follow the alphabetical order, which is the usual tendency) based on the grade where they are made. E.g. for grade I and II, the matras in Hindi may be avoided and only those letters chosen that can form a variety of three letter words. For higher grades, more complex matras may be given with the alphabets. Remember to be consistent with the lettering of the alphabets (with the text book) and provide a cubby hole / tray/ small shelf nearby to keep chalk and duster.

Word Organiser on Wall to facilitate language work in classroom and other settings.



These are two types of word organisers they can be used for Hindi as well as English. The one on the left is for match the words activity. The one shown on right is useful to understand the grammar of a sentence (e.g. noun, verb, adjective, etc.) in either language. These are made as writable surfaces a chalkboard can be modified to be used like this. These can be in classrooms / corridors at child accessible heights.

Labelling Around Us to associate familiar objects and spaces with printed words in the school. Labelling of simple objects like window, door, directions like East, West, North, South, spaces like classroom, corridor, etc. in different spaces in Hindi & English can be provided for better exposure of the children to the text.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Play with Words are useful for all grades from 1 to V. In case needed, they are useful for learning English also for higher grades. Teachers may decide to increase complexity in the usage for higher grades.

Physical, motor and sensory

- Being able to visually separate shapes, letters and forms that look alike, which is an essential skill for reading.
- Learning to separate similar sounds which is required for reading.

Facilitating understanding

- Learning to identify and read different words.
- Learning to make new words by combining alphabets, in different ways.
- Reinforcing and enriching vocabulary, for example, by matching words to their meanings or pictures.
- Understanding different usage of the same word.

- Understanding grammatical forms and structures of words, for example, prefixes, suffixes, different parts of speech, opposites, synonyms, etc.
- Using words to create sentences.
- Reinforcing spellings.

Social and emotional

- Creating opportunities to learn in interactive and fun ways.
- Enhancing language fluency by providing accessible words to facilitate a variety of social interactions within and outside the classroom, particularly for second language learners and children with learning difficulties.
- Motivating reading and writing by providing a supportive and non-threatening environment.

How to make Play with Words ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, wheather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Play with Words

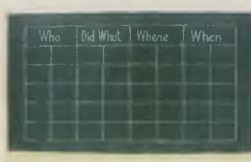
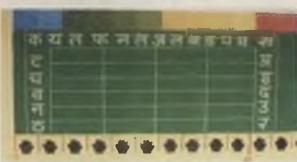
	Unit	Rate
<ul style="list-style-type: none"> • Word Wall with Alphabet Border Construction is similar to that of Ruled Writable surface, having painted alphabet border as specified for each class and fine engraved lines for making divisions for writing. 	sqm	Rs. 450
<ul style="list-style-type: none"> • Labelling of Objects and Spaces Providing and fixing of a set of 15 numbers 10x10 cm cut ceramic tiles in cement mortar 1:4(1 part of OPC 43 grade: 4 parts of fine sand) with painted alphabets. 	set	Rs. 100

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Play with Words

- Word Wall with Alphabet Border Civil work and Painting work
- Word Organiser on Wall Civil work and Painting work
- Labelling Around Us Painting work



21. Visuals Around Us

What are Visuals Around Us?

Visuals create a spark for the child's imagination.

When a child discovers a face in a cloud,

Or finds patterns in a floor design

The child looks, shares, narrates, experiences,

and a whole world opens up!

Children need visual stimulation for the development and enhancement of their language and thought processes. Many schools offer surprisingly little variety, or nothing at all, in terms of interesting, child friendly visuals. Considering the fact that for generations, visuals of folklore, mythology, traditional and religious motifs have been an integral part of homes, community buildings and spaces, today's bland architecture of cement, RCC, steel and glass has almost lost links with this rich tradition. Thus, learning happens in a very depleted and colourless environment in fairly insipid ways. It is absolutely vital that schools provide a visually stimulating environment for children to learn in, since it directly effects the quality of learning. The value of this qualitative learning is several times more than the nominal cost incurred on it. Carefully selected visuals can become an essential part of a stimulating learning environment. They can provide a rich resource base for conversation, for creative expression, aesthetic appreciation, written activities, for number work etc. They may also be used to reinforce a link with the social and cultural experiences and backgrounds of children, in ways that children can connect with their cultural roots and feel a positive sense of identity within the school. In addition to this visuals can also provide glimpses into a wide range of other art and cultural forms. Children can thus learn to appreciate cultural diversity and develop a sense of aesthetic appreciation.

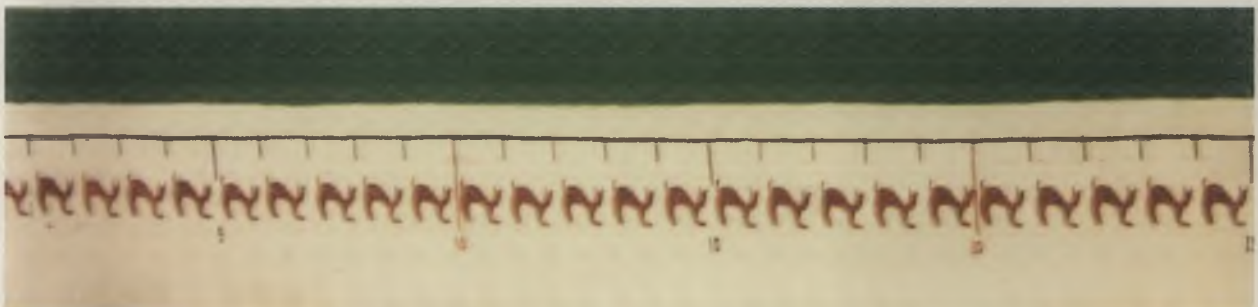
This design idea offers examples of are a range of interesting and child friendly images, motifs, designs and art forms. Some may be painted while others can be created with different materials, textures and colours. Children will find them arranged or placed in a variety of settings, where they provide learning resources and stimulate aesthetic and sensory experiences.

Design Variations of Visuals Around Us

Folk Art forms in single picture or as series of pictures.

Traditional Motifs as single motifs or on borders along other design ideas.

Line Drawings in single picture, as series of pictures or on borders with other design ideas.





It is important to expose children to richness of the folk and tribal art, motifs from across the country. It allows them to relate to a wide variety of visual material, other than that given in the text books. Children can make stories around them, or make their own forms and explore their visualising and creative skills. Such motifs can also be painted on chalk boards for children to make their own forms. These can be painted on walls in classrooms and corridors.

Kolam Designs on the floor and the wall.



Kolam designs from Southern India are interesting ways to relate geometry, mathematics and creativity. While some Kolam patterns can be painted, others can be made by the children on the dot boards. Some Kolam designs can be made near the Dot boards for children to perform self-directed activities.

Visual Patterns and Tessellation on the floors and walls and on borders with other design ideas.
Shape Images on Window Grills as part of the window security grill.



Tessellations and other visuals material will require a painter of high skill. They help children to identify patterns as well as illusions. These can be painted on walls in corridors.



This is geometrical shape image of a man. These can be integrated while making new window security grills.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Visuals Around Us are useful for all grades from 1 to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Experiencing rich visual stimulation.
- Using the visuals, patterns and motifs to trace, copy or for finger movements and tactile experiences.

Facilitating understanding

- Developing the power of observation.
- Learning to creatively express ideas through different art forms.
- Stimulating curiosity, imagination and experiencing a rich resource for the development of language and thought through a range of activities such as weaving stories based on these visuals.
- Developing number sense by using visuals to count, compare for more, less, greater and so on.
- Experiencing visual reinforcement for the learning of different concepts.

Social and emotional

- Social interaction and communication through visuals, which can be used for playing games, having discussions, story building, etc.

- Experiencing opportunities for connecting visuals with the children's own experiences and backgrounds.
- Developing an aesthetic appreciation through a variety of art forms and images.
- Developing a cultural identity and experiencing self-worth through visuals connected to their own contexts.

How to make Visuals Around Us ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Select suitable Traditional Motifs / Artistic Visuals / Visual illusions for a wall based on requirements of a grade. After deciding, the wall surface should be prepared.
3. Over this, an artistic painter to paint the visuals
4. To be done in weather proof paints in corridors and outdoors.

The estimated cost of making Visuals Around Us

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Folk Art & Motifs visual <p>The pictures could be engraved or painted. Pebbles, coloured stones, broken ceramic & stone tiles, small pieces of mirrors or ropes may be used to create it. Care should be taken that the materials are not sharp & can be effectively embedded so that they do not project out from the surface of the plaster. In case of engraving the picture, the construction process is similar to that of Prewriting Grooved Patterns on walls otherwise it can also be painted.</p>	sqm	Rs. 630
<ul style="list-style-type: none"> • Kolam Designs <p>Construction of kolam design on the existing wall after removing the existing plaster from the wall and raking out the joints upto 1cm. The surface should be plastered in cement mortar 1:4 (1 part of OPC 43 grade:4 parts of finely sieved sand) having thickness 18mm. An interesting visuals could be engraved with cement & marble dust slurry on the plastered surface. After grooving, broken bangles & ceramic tiles may be used to create an interesting Kolam design.</p>	sqm	Rs. 800

All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Visual Around Us

- Folk Art Painting work
- Traditional Motifs Painting work
- Line Drawing Painting work
- Kolam Design Civil work & Painting work
- Visual Patterns and Tessellation - Painting work
- Shape Images on Window Grills Fabrication work and painting work

V - Doing and Learning

22. Activity Boards and Surfaces on Walls

What are Activity Boards and Surfaces on Walls?

Activity boards for fun learning times.

Create new figures or make designs.

Thumb prints that come alive.

New patterns to make, and pictures to find.

Find figures hidden in alphabet shapes

Use squiggly lines and drawings make

Imagination is all that it takes

There is no single, unified learning process. Each child brings a unique combination of experiences, skills and perceptions while exploring or using an activity or material. It is because of this that the same activity can be performed in different ways by different children, so as to make it understandable and meaningful to its individual user. Open-ended activities, within a school, that allow divergent use are important for reinforcing the diverse natural learning processes of children. However, most curriculum related school activities are convergent in nature. By confining children to structured classroom activities, natural processes of learning may get hampered. Often schools do not provide sufficient additional opportunity for natural learning behaviours and activity.

Activity Boards and Surfaces offer a range of wallboards, that provide spaces for open-ended creative experiences with a variety of shapes and patterns that the children find in their world. The shapes can range from those of leaves, alphabets, thumb prints or regular geometrical figures to irregular squiggles. This kind of active engagement through fun provides a multiplicity of active learning experiences of language, art, geometry, appreciating nature or sensory perceptions, in non-threatening and enjoyable ways. They are placed in settings that are informal in nature, with borders that provide a visual guidance for using them. In many existing schools, the wall upto a height of about 1.5 meters from the floor needs repair inputs. Invariably, the plaster in this 'repair-zone' will have to be redone. Activity Boards and Surfaces lie in this same child accessible zone and can, thus, be integrated with the repair work.

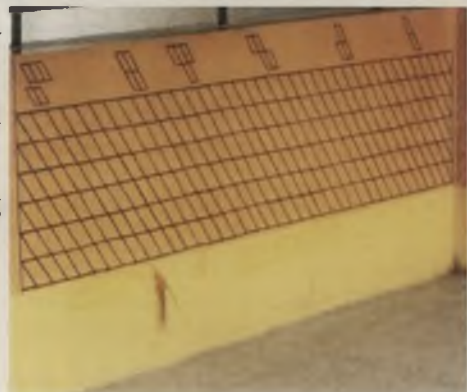
Design Variations of Activity Boards and Surfaces on Walls

Geometrical Patterns Board for locating patterns within a grid.

Hidden Shapes Board for discovering the shapes of hidden objects.

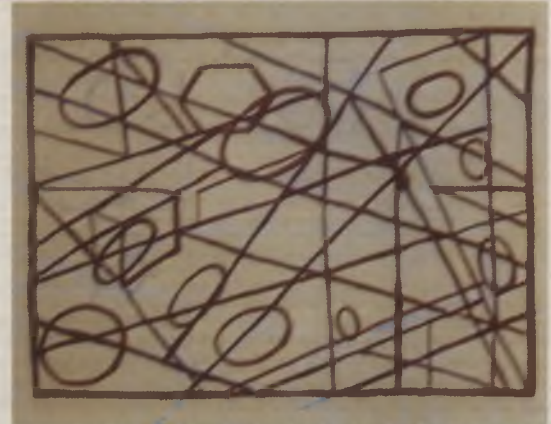
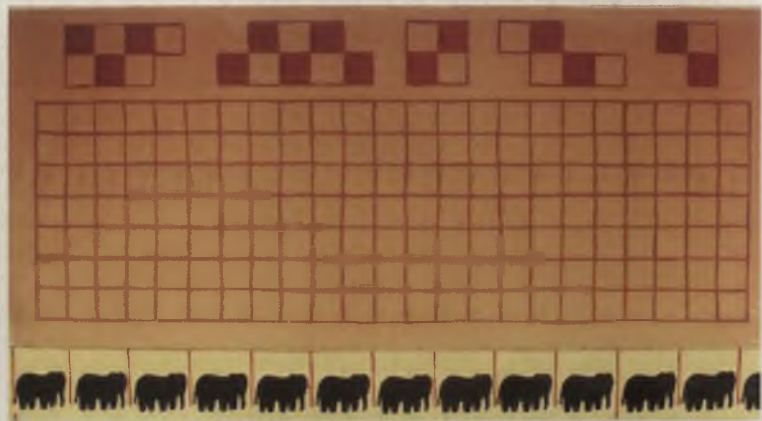
Squiggles Board to be used as starting points for making drawings.

The geometrical pattern board allows children to identify and make new patterns. These are wiring surfaces with grids of different kinds painted on them. The painted border of some patterns on the top acts like a guide to the children.





This allows the young children to make squiggles so crucial for pre-writing exercises. For older children, these shapes initiate a creative exercise to make their own shapes and form and derive meaning from them. The hidden shapes board has hidden shapes in the 'jungle' of several shapes and children have to simple identify them.



Thumb Prints Board to be used for making animals people and other figures.



The pre-painted 'thumb-prints' on this board allow the children to make their own creative shapes and form in several different ways. They can even do this in their notebooks later.



Alphabet Shapes Board to be used for making drawings of objects and figures.



In early age, these alphabet shape boards help children recognise and remember the alphabets in Hindi or English with letters. This is especially useful for grades I and II. These can be made in classrooms or corridors, at child accessible heights.

Shape Poem Board to write poems on objects of related shapes.



These geometrical shapes painted on different chalkboards in different locations can be used to either draw shapes around them by adding figures in and around them. They can also be used to write a poem about that shape which is drawn. It allows children observe inward and outward from a given shape and explore or create new ideas with a given form.

Children's Wall to be used as a free space for creative expression in many ways.



Children's walls are meant for children to express their thoughts, creativity, observations, ideas and share it with others. They help in developing language and expression. These must be made in outdoors, where other children can also watch, or in corridors.

Where can you see these ideas in Delhi ?

You can see some of these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Activity Boards & Surfaces are useful for all grades from 1 to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Developing fine motor skills.
- Drawing and pattern making.
- Developing visual discrimination, for example by locating hidden figures.

Facilitating understanding

- Using existing alphabet or other shapes to create a variety of shapes and figures.
- Using shapes to build associations with objects of that shape through poems.
- Acquiring drawing skills.
- Discovering the relationship between visual patterns and number patterns.
- Enhancing visual and spatial perception, for example by finding hidden shapes in a pattern.
- Using geometrical shapes to create patterns and tessellation.
- Expressing creatively in different ways, like making pictures from thumb prints/ alphabets.

Social and emotional

- Providing opportunity for a range of creative expression through a variety of activities.
- Developing interpersonal skills by doing these activities in small groups.
- Learning through fun.

How to make Activity Boards and Surfaces on Walls?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. These are to be located in classrooms and corridors as per need. First make the chalkboard writing surface as base for the Activity Boards. Then make the various activities suggested over this surface. Teacher and children are supposed to write and rub over these activities. The border along the calendar can be used illustrate a point, and act like a guide for usage.
3. Use matt finish green board / yellow board paint to paint the base of the activity board writing surface after the surface is cured with water for 15 days and is dry.
4. Paint the various activities over these with contrasting colours.

5. Make a duster and chalk keeping niche near the activity boards and surfaces for ready accessibility of such materials during activity.
6. Style of all text painted should be similar to that given in the text books and not artistic type.

The estimated cost of making Activity Boards and Surfaces on Walls

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Geometrical Patterns Board Construction procedure is similar to that of Ruled Writable surface except the markings of lines, as the lines are to be marked in the form of grids as required & upto the entire satisfaction of teacher-in-charge 	sqm	Rs. 670
<ul style="list-style-type: none"> • Hidden Shapes Board Construction procedure is similar to that of Ruled Writable surface expect that the hidden figures are to be painted by an artistic painter as required & upto the entire satisfaction of teacher -in-charge 	sqm	Rs. 670
<ul style="list-style-type: none"> • Squiggles Board Construction procedure is similar to that of Ruled Writable surface expect that the squiggles are to be painted by an artistic painter as required & upto the entire satisfaction of teacher -in-charge 	sqm	Rs. 670
<ul style="list-style-type: none"> • Alphabet Shapes Board Construction is similar to that of Ruled Writing surface. The visuals are to be painted on 15cm high border & upto the entire satisfaction of teacher -in-charge. 	sqm	Rs. 515
<ul style="list-style-type: none"> • Shape Poem Board Construction is similar to that of Ruled Writing surface having engraved shapes & painting them. 	sqm	Rs. 670
<ul style="list-style-type: none"> • Thumb Prints Board Construction procedure is similar to that of Ruled Writable surface. Thumb patterns are to be painted on 15cm wide border with enamel paint by an artistic painter as required & upto the entire satisfaction of teacher -in-charge. 	sqm	Rs. 515
<ul style="list-style-type: none"> • Children's Wall Construction procedure is similar to that of Ruled Writable surface. The wall should have an all weather, exterior grade paint for treatment by the children complete as per entire satisfaction of teacher in charge 	sqm	Rs. 400

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Activity Boards & Surfaces on Wall

- Geometrical Pattern Boards on Wall Civil work and Painting work
- Hidden Shape Boards Civil work and Painting work
- Squiggles Board Civil work and Painting work
- Thumb Prints Board Civil work and Painting work
- Alphabet Shape Board Civil work and Painting work
- Shape Poem Board Civil work and Painting work
- Children's Wall Civil work and Painting work

23. Dot Boards on Floor and Walls

What are Dot Boards on Floor and Walls ?

Dots, dots and still more dots

Join them and look at what you've got.

Numbers, shapes, straight and slanting lines

Games that you play while creating designs.

Moving to the left, moving to the right

Learning directions is such a delight!

Drawing and scribbling are natural behaviours for children. However, learning to draw regular shapes or outlines of specific objects in a realistic way, requires skill and practice. For most children these are acquired skills, which are learned through especially structured activities in the art, geometry, social studies or science classes within a school. Trying to copy or draw such shapes / outlines on a blank paper or slate can be a daunting task for a young child. It becomes easier if there are some guidelines within which children can do these drawings. Regularly spaced dots that are arranged in rows and columns provide useful reference points for children to draw alphabet number and geometrical shapes, outlines of familiar objects, symmetrical images, patterns, following directions and playing games based on dots, etc. The dots that are arranged in staggered rows serve as useful guides for drawing three-dimensional objects.

Dot Boards on Floors and Walls provide surfaces, which have dots arranged either as regularly spaced dots or as staggered dots. The dots can either be painted, engraved, embossed or occur as protrusions which can be used as pegs. These dot boards can be used in a multiplicity of ways for doing a variety of drawings activities mentioned above and doing activities related to mathematics, language and art. They may also provide different ways of reinforcing concepts and textbook learning that children have gone through. They can also provide a range of fun activities. In many existing schools, the wall upto a height of about 1.5 meters from the floor needs repair inputs. Invariably, the plaster in this 'repair-zone' will have to be redone. Dot Boards on Walls lie in this same child accessible zone and can, thus, be integrated with the repair work. Similarly the floor repair may be integrated with provision of Dot Boards on Floors.

Design Variations of Dot Boards on Floors and Walls

Dots in Straight Rows can be used for drawing two-dimensional figures by classes I to III.

Dots Staggered in Straight Rows can be used for drawing three-dimensional figures by classes IV onwards.



These are dots painted (and if possible, slightly engraved) on chalkboard surfaces. These must be made along with the main chalk board in each classroom for use by teachers and smaller version to be used by children within the classroom. These are useful for all grades.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Dot Boards are useful for all grades from I to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Practising finger movements by joining dots.
- Developing finer motor and eye-hand co-ordination.
- Enhancing visual and spatial perceptions through the close observation of object or shape outlines and trying to recreate them on the dots.

Facilitating understanding

- Using the dots for drawing various regular shapes, including alphabet shapes, as well as, for drawing outlines of predetermined, real objects.
- Using the dots for exploring numbers and developing mathematical skills such as counting in 2s, 3s, 10s, comparing lengths or making dot patterns based on multiples.
- Constructing 2-D and 3-D geometrical shapes on the staggered dots.
- Drawing symmetrical and asymmetrical figures and shapes on the regular or staggered dots.
- Exploring geometrical concepts like drawing different angles by using the dots or turning a closed shape like a rectangle through different angles and drawing it.
- Drawing laterally inverted image of a given shape by using the dots.
- Following directions by counting and moving on the dots as instructed, this may include following directions like moving across a specified number of dots towards left or right, North or South etc. to make a predetermined image.
- Exploring creativity through drawings and patterns made by joining the dots.

Social and emotional

- Reinforcing cultural and aesthetic appreciation through traditional, cultural and religious motifs provided as borders, which may be copied on to the dots by children.
- Using the dots to have fun like playing different games.
- Providing opportunities for creative expression.

How to make Dot Boards on Floors and Walls?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Dot boards are to be located in all classrooms. For most classes, one large Dot board for teachers and smaller dot boards for children are recommended for grades I to III. For higher grades, Dot Boards with staggered dots to be made.
3. First make the chalkboard writing surface as base for the Dot board. Then, while the top finishing is still setting; make the guidelines to locate the dots precisely. While this top coat is about to set, engrave the dots on the surface using a custom-made punching tool.
4. The border along the Dot Board can be used to illustrate a point or give a title to an activity, etc.
5. Use matt finish green board paint to paint the base of the Dot board writing surface after the surface is cured with water for 15 days and is dry.
6. Paint the Dots in perfectly rounded shape with white/ off white/ light green.
7. Make a duster and chalk keeping niche near the calendar for ready accessibility of such materials during use of Dot board activity.
8. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Dot Boards on Floors and Walls

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Dot Board <p>Construction is similar to that of Plain Writable surface having engraved dots at the time of finishing coat, including painting the dots. In this case cement pigment to be added for the top coat. Visuals are to be painted on 15cm high painted border.</p>	sqm	Rs. 460

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Dot Boards on Floor and Walls

- Straight & Staggered Dot Board Civil work and Painting work

24. Grid Boards

What are Grid Boards?

*North, South, East and West,
What is the way to learn them best?
Hidden words are such fun,
Where can I hide them from everyone?
Numbers, words, graphs, maps or art,
Working out areas or making a chart.
Grids on the floor or grids on the wall,
provide fun ways to learn them all.*

Children build a deeper understanding of what they have learnt within the classroom or outside, if they get opportunities to apply that learning in a variety of ways. Grids made in the built space may offer this possibility. They provide a defined framework with multiple uses, within which children can do a range of activities, some of which may address various core learning areas. For example, they offer an alternative way of reinforcing or learning art or other skills, concepts such as shapes, directions, numbers, for enhancing language and vocabulary, to name a few. This is important since children need to have varied experiences of the same concept or idea to grasp it better. In addition to this grids offer a space for a variety of fun activities.

Grid Boards have a matrix of equal sized squares arranged in ten rows and ten columns. They can be made on the wall, floor or glass windowpane. Since such grids are in the built space they have the added advantage of being available for children to use at all times. They can be used for interactive and interesting, teacher directed or independent mathematics, language, mapping, art, and skill development activities. In many existing schools, the wall upto a height of about 1.5 meters from the floor needs repair inputs. Invariably, the plaster in this 'repair-zone' will have to be redone. Grid Boards on Walls lie in this same child accessible zone and can, thus, be integrated with the repair work. In several cases the floor of a platform needs to be repaired or relayed. A Grid board on floor could be integrated with such construction. Several windows may have broken glass panes, or for better natural light, new glass windows need to be introduced. In all such cases, a small Grid Board may be printed on the glass used for the window. It can even be printed on existing glass panes.

Design Variations of Grid Boards

Wall Grid Boards in indoor, semi-open and outdoor settings.





Grid boards are very useful for all grades. They can be used by the teachers and children for maths, language, science, geography, drawing work, patterns, etc. The grids are painted on the chalkboard. One main Grid board must be made along the main chalk board in each classroom, while smaller grid boards for children can be made on the other walls. The lines must be painted, but if possible little engraving of these lines will go a long way.

Floor Grid Boards in semi open or outdoor raved settings.



Floor grid board of different sizes can be made for playing several games like snakes and ladder, chess, etc. These are also used by children to make their own stapu. Care should be taken to use road paint for painting.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)
3. Navayug School, Mandir Marg, opposite Birla Mandir (NDMC)

How will these BaLA ideas help children ?

Grid Boards are useful for all grades from 1 to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Developing spatial perceptions by using the grid lines to locate different figures or shapes on the grid.

Facilitating understanding

- Understanding numbers, and their properties, as well as practising mathematical concepts and operations such as square numbers, odd and even numbers, multiplication, geometrical shapes, area and so on.
- Doing language activities for strengthening alphabet learning, vocabulary, grammar and listening comprehension.
- Doing mapping exercises and following directions.
- Learning to plot bar graphs and line graphs.
- Drawing and reproducing figures and shapes.
- Using the grid squares for drawing, pattern making, and tessellation.
- Doing subject related classification activities.

Social and emotional

- Associating learning with fun.
- Experiencing opportunities for peer interaction.
- Experiencing opportunities for creativity and innovation.

How to make Grid Boards?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Grid boards are to be located in all classrooms. For most classes, one large Grid board for teachers and smaller Grid boards for children are recommended.
3. First make the chalkboard writing surface as base for the Grid board. Then, while the top finishing is still setting; make the guidelines to locate the grids precisely. While this top coat is about to set, engrave the grids on the surface using a fine string or a thin steel plate.
4. The border along the Grid Board can be used to illustrate a point or give a title to an activity, etc.
5. Use matt finish green board paint to paint the base of the Grid board writing surface after the surface is cured with water for 15 days and is dry.
6. Paint the Grids in perfectly consistent lines with white/ off white/ light green.
7. Make a duster and chalk keeping niche near the calendar for ready accessibility of such materials during use of Grid board activity.
8. Style of all text painted should be similar to that given in the text books and *not* artistic type.

The estimated cost of making Grid Boards

Item of BaLA design work	Unit	Rate
• Wall Grid Boards		
Construction is similar to that of Ruled Writable surface having grid by engraving Vertical & horizontal lines as required. Same as dot board, cement pigment to be added for the top coat.	sqm	Rs. 450

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Grid Boards

- Wall Grid Boards Civil work and Painting work
- Floor Grid Boards Civil work and Painting work

25. Tracing Surfaces

What are Tracing Surfaces?

Alphabets, leaves or number shapes,

To trace and use in many ways.

Feel them, print them

or trace them out.

Discover these shapes

in the world about.

In a context, where any given resource must be optimally utilised and not wasted, certain elements of the built environment can be developed so that children can make their own learning material by using it as a sort of duplicating 'machine'. Worksheets and activity sheets facilitate the designing of interactive, child friendly exercises or activities that cater to the needs and interests of different groups of young learners. The reason why such worksheets are hardly used, particularly in the case of schools with large class sizes and limited monetary resources, is that they do not have the duplicating facilities required for creating them.

Tracing Surfaces can become a unique way to make such educational materials in the school itself. Simple shapes and outlines like maps, money, geometrical shapes, alphabets or numbers, leaf shapes, outlines for origami, etc, may be engraved on ceramic tiles. These can be fixed at accessible locations on the walls, platforms or other horizontal surfaces so that they are available to children at all times. Children can transfer the shapes on to the paper by pressing it against the engraved lines on the tiles. These lines can act as guides for paper folding or provide shapes for colouring or other classroom activities. There is no need for a

pencil, rubber, or even scissors for doing this. All that is needed is some notebook-sized paper. These tracing tiles can become an accessible, dependable, and low cost, duplicating medium available within the school. In a large school building repair or construction programme, fabrication of such tiles is economically viable.

Design variations of Tracing Surfaces

Tiles for Tracing Regular and Irregular Shapes to use for classroom and other activities.



The tracing tiles have shapes embossed on them which children can duplicate on their notebooks by simply rubbing a crayon. This duplicating at no cost, without a photocopying machine.



Tracing from Window Glass for tracing outlines of resources like Grid Boards, Outline Maps, Angle Protractors and Scales from classroom windows.



This is another way to trace maps, and shapes from the window glass pane. An art / drawing teacher will have to first identify which shapes need to be duplicated most by children. Then these can be made using permanent ink marker on the window. The shape should be made on that face that children will not touch (e.g. the outer face if the window glass tracing has to be done from inside) for longer life.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NPMiddle Co-ed School, Sangli Mess, near India Gate (NDMC)

How will these BaLA ideas help children ?

Tracing Surfaces are useful for all grades from 1 to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Using the sense of touch to experience regular and irregular shapes.
- Enhancing fine motor skills through tracing, folding and cutting.
- Developing the visual skills and eye hand co-ordination required for tracing.

Facilitating understanding

- Using the figures traced for reinforcing the understanding of different concepts and learning areas in a variety of ways.
- Providing maps, shapes or other outlines to duplicate for worksheets or other teaching learning materials and activities, both for self-learning, as well as, for teacher directed activity.
- Relating different shapes and outlines to the objects that they represent.
- Using two-dimensional shape formats for folding and creating 3-dimensional objects.

Social and emotional

- Providing experiences for fun and enjoyment.
- Providing opportunity to use the tracings in a number of creative ways.

How to make Tracing Surfaces ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Tracing Surfaces

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Tiles for Tracing 		
The proposed size of the handmade tracing tiles is 15cmx15cm, having thickness 12mm. The handmade ceramic tiles are to be fixed by cement mortar 1:4 (1 part of OPC 43 grade:4 parts of coarse sand) on the flat surface of a platform or a built up seat, depending on the availability of space, they must be at least 30cm apart from each other. The handmade ceramic tiles having the design as specified.	Number	Rs.125

*All costs indicated are based on market rates of materials & labour at New Delhi in 2001.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Tracing Surfaces

- Tiles for Tracing Regular and Irregular Shapes Civil work
- Tracing from Window Glass Painting work

VI. Fun and Learning

26. Board Games on Floor and Seats

What are Board Games on Floor and Seats?

*A few lines on the floor
A couple of seeds
A dice that you throw
Is all that you need,
For fun and games galore
Such a wonderful treat!*

Indigenous board games provide an important context within which children learn to follow rules, develop strategies, innovative techniques and at the same time learn to win or lose with dignity, all of which are important life skills. While such games need to be an integral part of any school, the reason they are not is because it is difficult to look after them. It is also not always possible for schools to provide sufficient numbers of such games for all the children.

Board games on floor and seating spaces along corridors or in the outdoors can provide a viable solution to these problems. Such permanent and accessible spaces can be used for creating formats of familiar board games. Teachers can select the games based on the criteria evolved by them. Locally played indigenous games can thus become an integral part of the school's physical environment. These have the advantage of being available to children at all times, including after school hours. There is no worry about them being broken or lost. All that children need is some seeds, or natural materials and a dice, and the games are there to be played! A simple alternative accessible dice has also been suggested, so the children don't need to go looking for one!

Design variations of Board Games on Floor and Seats

Indigenous Board Games selected on the basis of their popularity, fun and learning value.

Flat dice to be combined with board games so that they are ready to be played.





Board games are to be ideally engraved and painted with road paint on building edges like outer edge of a veranda, plinths, platforms, where children are likely to sit and play. Depending upon the game and its requirements, it must be located according to group size that is likely to play.

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)

How will these BaLA ideas help children ?

Board Games are useful for all grades from I to VIII. Teachers may decide to increase complexity in ideas for higher grades.

Physical, motor and sensory

- Developing eye-hand co-ordination, by throwing the dice appropriately and moving the seeds or counters within the squares.
- Developing finer motor skills required for manoeuvring the counters within small spaces or making moves within defined paths.

Facilitating understanding

- Developing logical thinking, problem solving and decision making techniques through strategies for playing different games.
- Learning to make, understand and follow rules.
- Learning to innovate, by finding and using alternative materials that are available in the environment, or by creating new games within the existing formats.
- Practising computational skills while calculating scores.
- Developing an understanding of spatial relationships through a variety of geometrical shapes inherent in the board games.

Social and emotional

- Developing a team spirit by, learning to follow rules, to share materials, to wait and take turns and to play in a friendly way within a group.
- Learning to take responsibility, by ensuring that the format for the board game is used carefully and not destroyed or spoiled in any way.
- Developing a sporting spirit by learning to win and loose with dignity and in the process learning to express negative emotions such as anger or disappointment in socially acceptable ways.
- Developing positive associations with the school, as a fun place.

How to make Board Games ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Board Games on Floor and Seats

Item of BaLA design work	Unit	Rate
Board Game including Flat Dice The board games is constructed within a panel of size 60x60cm. The panel is casted in two layers of 25mm & 15mm thickness, respectively. The bottom layer of 25mm has 1:2:4 cement, sand & 6mm down size stone aggregate. The top layer 15mm has 1:2(1 part of OPC 43 grade : 2 parts of fine stone dust) with floor colour pigment added @ not more than 15% by dry volume of the total mix prepared for this layer. While the layer is wet, the lines can be engraved, if needed. The panel could be coloured with matching enamel paints after 15 days of casting it.	sqm	Rs. 420

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Board Games on Floor and Seats

- Indigenous Board Games - Civil work and Painting work
- Flat dice - Painting work



27. Stapu Frame and Goltara

What is a Stapu Frame?

*All sorts of times are happy times
For little kids like me
Both jumping times and hopping times
Are always full of glee.
I'll jump into one, I'll jump over one
Then I'll jump over two and three
I'll go over the land, over the hills
Till I finally get to the sea !
(A traditional rhyme)*

Stapu is one of the favourite games of children. It is known by different names and is played in a range of ways in different parts of the country and around the world. Interestingly, the children could use stapu grids in many ways. This design idea explores how this game can be used in other creative ways. Since for each use, the grid may be different, and also children might still want to make their own grid before playing 'their own' stapu, only an outer frame is proposed.

A stapu frame can be created with the outline boundary made of standard unit sized (like 10 x 10 cm) tiles. The frame provides for a guide for making a variety of stapu grids and other similar games. It also provides a benchmark scale for measuring, mapping, doing fraction exercises, or for having fun and creating patterns. Such a frame can be made in the classroom floor, or in the outdoors where there is some paving and soft play area.



Stapu frames are generally for children to play by hopping on squares in their own different ways. While Stapu frames are rectangular in nature, the Goltara has three concentric circles subdivided radially into 10 parts as shown. A guide to use this for mathematics or language activities can be painted on a nearby wall. These are to be painted with road paint on the floor. For longer life, ideal would be to engrave the shape also.

104	131	37	300 mm
144	159	256	300 mm
164	71	412	300 mm
324	576	177	300 mm
31	531	47	300 mm
676	2	841	300 mm
400 mm	400 mm	400 mm	

These numbers to be painted on floor stapu. The game is to identify either of following:

- A. Even numbers
- B. Odd numbers
- C. Prime numbers
- D. Square numbers

Note: Students may jump diagonally or to left but not on their right.

100	256	900	300 mm
144	289	784	300 mm
196	324	676	300 mm
275	529	729	300 mm
169	576	841	300 mm
121	675	961	300 mm
400 mm	400 mm	400 mm	

Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra
2. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)

How will these BaLA ideas help children ?

Stapu Frame and Goltara are useful for all grades from I to V. Teachers may decide to increase complexity in ideas for higher grades.

Physical, Motor and sensory development

- Developing eye-hand co-ordination through throwing the stone into the boxes and not on the lines.
- Exercising the body muscles through hopping and jumping, and developing body muscle control.
- Developing spatial perceptions by jumping into the right spaces and not on the lines.

Facilitating understanding

- Using the stapu format for creating innovative board games, and verbal games.
- Measuring and drawing the stapu format, to make equal size partitions.
- Learning to make and stick to rules.
- Experiencing fractions through measuring half, quarters and so on.
- Using the stapu format for measurement or mapping experiences by using it as a bench mark scale.

Social and emotional

- Learning social skills and group behaviour through playing a group game.
- Experiencing fun and enjoyment

How to make Stapu Frame & Goltara ?

1. Ask the drawing teachers, mathematics and science teachers to work together to make these ideas.
2. Most ideas will need to be painted. When painting in exterior spaces, make sure that exterior grade, weather proof paints are used. All text painted should be similar to that given in the text books.

The estimated cost of making Stapu Frame on Ground and Floor

Item of BaLA design work	Unit	Rate
<ul style="list-style-type: none"> • Stapu Frame Making stapu frame by fixing and arranging 10cm x 10cm coloured glazed tiles in rectangular shape with overall outer dimension 3.2m x 1.7m including fixing tiles in cement, dismentting of existing surface and making good the same etc. 	Number	Rs. 2000

*All costs indicated are based on market rates of materials & labour at New Delhi in 2007.

Key to abbreviations used: Rs. = Indian Rupees, Rm. = Running meters, Sqm. = Square meters

Which skill will be needed to make Stapu Frame on Floor

- Stapu Frame Civil work and Painting work
- Goltara Painting work



28. Mirrors on Wall

Mirror,

Mirror on the wall,

Who is fairest (tallest, weirdest, shortest, fattest, thinnest.....) of them all?

Mirrors can be fun. They also teach us a lot of things like concepts of left and right, image inversion, reflection etc. They can be introduced in the building fabric quite simply but it has an immense potential in terms of providing the children with an educational toy.

The mirrors shall be made up of Acrylic / Polycarbonate sheets so that they are unbreakable. They shall be fixed vertically on a wall which has a wide open space in front so that the children can move back and forth in front of the mirror observing the changes that occur with the movement. The mirror strip should be atleast 60cms wide and 120cms high and shall be fixed atleast 30cms above the ground level. The mirror can be given concave or convex shape by giving shape to the plaster underneath, on which this sheet is to be fixed. These sheets shall be fixed over the wall with screws and rubber washers. The sheet shall be atleast .5cm thick. A variety of mirrors showing different types of distortions in reflections can be provided. So you can have a mirror in which you look tall, or short, or fat, or thin and so on.



Which skill will be needed to make Mirrors on wall

- Mirrors on Wall Carpentry Work and Painting work

29. Pipe Phone Railing

With little innovation a mundane and uni-functional building element like a hollow pipe railing can be converted into an interesting and lively pipe phone. The only input such a device needs is a minor but careful detailing. First and foremost, any hollow pipe which is to be used horizontally, like in railings, seat backs etc. can be improvised to become a pipe phone. It should be at least 7.5 cms in diameter, and the length can vary to suit its basic function. Both the ends should be left hollow and care should be taken to eliminate all the obstruction in the length of the pipe. The edges should be carefully made blunt so as to prevent accidental injuries to the child. Small offshoots can project from the main pipe to enable the other children be a part of the fun. Care should be taken to see that these offshoots are so placed that they do not create a problem if a child leans against the railing, height of the pipe phone will have to correlate to the requirement of the railing, but in case it is too high (more than 100cms) the pipe can be bent downwards at right angles from the ends till a height of about 90 cms or so and similarly if it is too low (less than 60 cms), then it can be bent upwards till it reaches a height of 80-90 cms.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)

Which skill will be needed to make Pipe phones

- Pipe phone Railing Fabrication work

30. Mystery Wall

What is a Mystery Wall?

How many children are standing behind that wall ?

Four ? No.

Eight ? Yes.

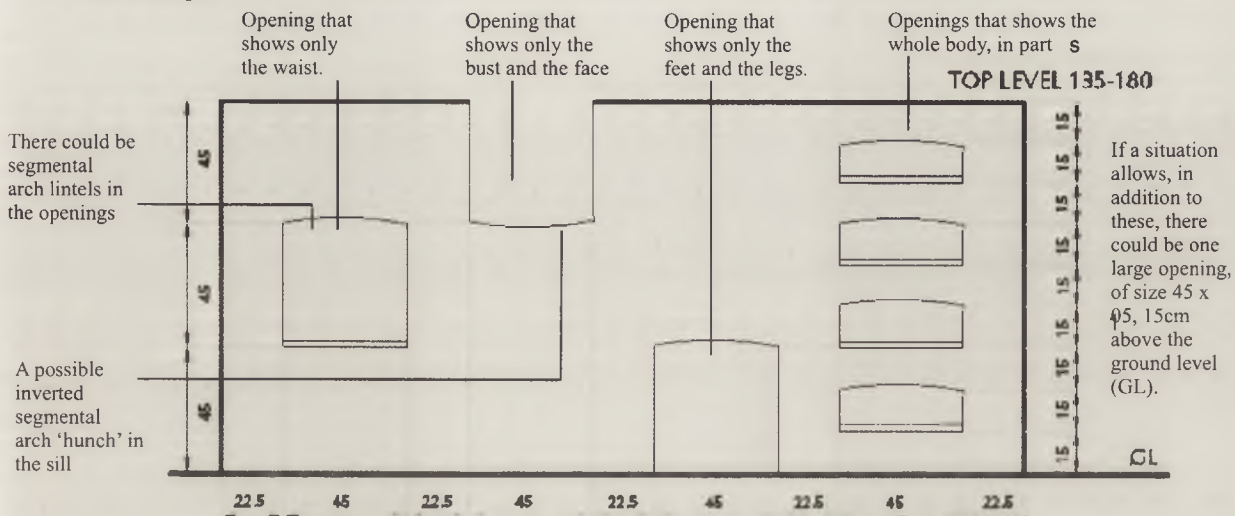
In how many different ways can you disappear? Just give the children a Mystery Wall and they will immediately prove all your guesses to be wrong! Children have a natural tendency to play Peek-a-boo. While it a game and a realisation about object-permanence for the very young ones, as they grow older this may turn to Hide and Seek or I Spy. They have amazing capacity to squeeze themselves to virtually any shape and size, that is difficult for adults to achieve.

The Mystery Wall has a composition of openings, which are placed in such a way that to a child standing on one side, only certain parts of the child standing on the other side are visible, making it an interesting, humorous setting. These openings at various levels can be used to put small artefacts or belongings, or be used to peep and hide behind. Occasionally, children may also climb on it and pretend play to use it as a ride.

Design and location of Mystery Wall?

The entire wall can be 22.5cm wide (in brick) or 34cm wide (in stone) and about 135 to 180cm high. The length can be in a module of about 3 meters each. This length and height is based on the observation of behaviour of children along walls. Walls of this size are likely to be used most for peek-a boo and Hide and seek, if it is located appropriately.

The size and location of various openings are shown. These are based on the anthropometric dimensions of the average school going children to maximise the effect. Horizontally, their locations may be interchanged. However, vertically, their location may not be changed. Children are likely to hold all the corners (or the ends) and edges while peeping from behind the Mystery Wall. Hence the finish of the corners must be slightly textured to provide comfortable grip. The edges within the opening jambs and at the ends must be rounded (and not sharp).



Elevation of a Mystery Wall

These openings will not make the wall totally opaque to light. In fact, it can be an effective visual screen that also allows light to partially pass through. When placed as a parapet wall along corridors, it will allow natural light in the corridor as well as in the adjoining classrooms. It can also be used as a screen near toilets. It can be used as partition wall between two outdoor spaces also. It makes the structural back-bone of the Space for Exploration and Discovery. The Mystery Wall may be located as shown. Subject to the conditions shown above, it can also be used like a screen between two spaces. It could even be used as a partition wall, if absolute visual and acoustical privacy is not an issue. Such walls may be made along courtyards and semi open spaces. It may also be delineate different outdoor spaces.

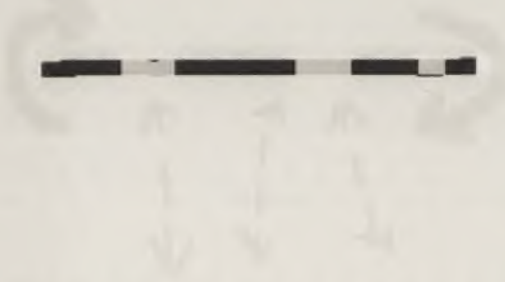
When in outdoors, children are likely to climb up and jump from the wall. Hence suitable fine sand must be laid for their safety. The sand for this purpose must be carefully chosen, to adequately cushion the impact of any fall. The depth of the dune must be 30 to 45 cm. The sand particle size (80% of the sand particles must fall in this size) must be 0.25 to 1.5 mm in diameter, with rounded shape (sand with elongated shape, or crushed stone dust, gravel or shingle, especially Badarpur sand must not be used). It is important for sand to be kept free from dirt, debris, broken glass, weeds, etc.

The modules of Mystery Wall may not be continuous and entry / exit points between any two modules may be designed to suit a particular situation. The wall could ideally be made using bricks in Rat-trap bond, or English bond. In stone wall, it must be made in coursed rubble masonry. The openings could have segmental or jack arched lintels.

These openings at multiple heights can be that of a counter window, open shelves, seat or work surface area, etc.

This side of the wall may face a corridor. The space on this side may be at least 150 cm wide.

Both the ends of the wall must allow physical movement to move around the wall.



Plan for locating the Mystery Wall

This side of the wall may face an expanse, like an open field, playground or any other open space.



Where can you see these ideas in Delhi ?

You can see these BaLA ideas in the following government schools in Delhi:

1. NP Middle Co-ed School, Sangli Mess, near India Gate (NDMC)

Which skill will be needed to make Mystery Wall

- Mystery Wall Civil work

31. Tyre Play Ground



This section is a tribute to Late Jimmy Jolly who has made several playgrounds like these around the world. All the design ideas presented here were developed by him. An ardent supporter of creating spaces for children to play and enthusiastic about this work, he died in May 2001.

What is Tyre Playground?

Imagine a safe, stimulating space for make believe adventure... for climbing , swinging , building, imagining ... where branches become horses, boxes and pipes become houses or hideouts and tyres taken on new forms! A place that also allows quiet moments for dramatisation or playing with sand. This could be a special place to be have fun with friends, where little dreams can come true! There is a scarcity of play equipment in most of our primary schools. These can be made by using old discarded tyres (Delhi has plenty of them), timber logs (available at junk dealers), few rudimentary hardware fittings and fine sand and a bit of imaginative labour.



How will these BaLA ideas help children ?

Tyre playgrounds are useful for all grades from I to X. However, separate playgrounds within the open space available must be made for primary, middle and secondary school children.

- Experiences for gross motor, physical and sensory development.
- Experiences of make believe and fantasy through imaginative play and dramatisation
- Experiences of emotional release, for example, releasing aggression through vigorous play.

- Learning to channelise emotions in socially acceptable ways
- Experiences of fun and enjoyment.
- Building a sense of belonging and interest in one's school.
- Building up a sense of achievement and a positive self-image.
- Learning sharing and co-operation, for example, learning to take turns on the swing.
- Learning group behaviours such as being fair and abiding by rules.
- Learning to care and be sensitive to the needs of others, for example older children looking after younger ones.
- Learning habits e.g. learning to use materials carefully and looking after them.

Which skill will be needed to make Tyre Play ground

Tyre Play Ground Fabrication work and Carpenter work



VII. Making some School Components inviting for Children

32. School Library

What to do in School Library?

School library is an important component of any school. It is important that this becomes a vibrant hub of acquiring and disseminating knowledge rather than a dull dusty array of closed almirah stacking reading material that is not even visible to the children. Almirahs, book cupboards and bookshelves should not be closed (unless books are very expensive such as Encyclopaedia Britannica).

To attract children to this library, as a first step it is important to paint the library and its furniture in vibrant but harmonious shades. The following items can be painted:

1. Library walls and ceiling.
2. Library doors, windows, grills, fans.
3. Library furniture including almirahs cupboards, bookshelves, tables, chairs, benches, etc.



You may use the following shades in the library to paint its various walls- the colours are selected for warmth, vibrancy as well as harmony. Use Oil bound distemper (OBD) of any reputed make for painting walls. If it has four walls they can be painted as follows:

- Wall A (Chalkboard side wall) Yellow Marigold.
- Wall B (Door side wall) Mango Mood.
- Wall C (Rear wall) Sunny Yellow.
- Wall D (Window side wall) - Orange Vision.

The library may also be provided with varied kind of seating low and high, soft and hard, to cater to different seating preferences and requirements of children based on age. Books for younger children should be placed within their reach.

Where can you see this idea in Delhi ?

You can see this idea in the following government schools in Delhi:

1. Government Sarvodaya School, President's Estate
2. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra

The estimated cost of painting

Item of BaLA design work	Unit	Rate
Distemping with Oil Bound Distemper (OBD) of approved reputed brand and manufacture for new work (two or more coats) and including priming coat with preparation of base, cement primer coat to give an even shade. Rate inclusive of labour and material.	sqm	Rs. 75
Painting with synthetic enamel paint of approved reputed brand and manufacture of required colour to give an even shade on metal or wood. Two or more coats on new work over an undercoat of suitable shade with base of good quality wood / metal primer of reputed brand. Rate inclusive of labour and material.	sqm	Rs. 120

Which skill will be needed?

- Only Painting work



33. Computer Aided Learning (CAL) Room

What to do in a CAL Room?

Technology for children may be overwhelming, especially for kids who may not have any exposure to it. Under Delhi Government Schools, CAL rooms are being set up in a child friendly way by making the technology simple and child friendly. It is important that the environment of this room reflect the various characters of the CAL package to children, even before they interact with them in the virtual world. For this, the door and the walls of the rooms can be painted using the theme of the CAL as shown here.

Where can you see this idea in Delhi ?

You can see this idea in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B-Block, Savda Ghevra

The estimated cost of painting

Item of BaLA design work	Unit	Rate
Distemping with Oil Bound Distemper (OBD) of approved reputed brand and manufacture for new work (two or more coats) and including priming coat with preparation of base, cement primer coat to give an even shade. Rate inclusive of labour and material	sqm	Rs. 75
Painting CAL toons of approved type on already evenly painted wall surface of size upto 60cm x 120 cm. Rate inclusive of labour and material	Per visual	Rs. 250

Which skill will be needed?

Only Painting work. For CAL toons, an artistic painter will be required.



34. Science Laboratory

What to do in a Science Laboratory?

Science labs are important spaces in any school. Yet very often the physical environment of the lab itself may not be inviting and vibrant enough for the children. Let us use this opportunity to make the science lab an exciting place for the children to be. Use your own imagination to paint the various components of the lab. You can paint the following items:

1. Science lab walls and ceiling
2. Science lab doors, windows, grills, fans
3. Science lab furniture including almirahs, tables, chairs, desks, benches, etc.

If you have a dynamic drawing teacher or an creative painter, under the guidance of a good science teacher, you can also paint the solar system on the ceiling, or paint various phenomena of science like solar eclipse, etc. on some prominent wall of the lab.

The estimated cost of painting

Item of BaLA design work	Unit	Rate
Distemping with Oil Bound Distemper (OBD) of approved reputed brand and manufacture for new work (two or more coats) and including priming coat with preparation of base, cement primer coat to give an even shade. Rate inclusive of labour and material	sqm	Rs. 75
Painting with synthetic enamel paint of approved reputed brand and manufacture of required colour to give an even shade on metal or wood. Two or more coats on new work over an undercoat of suitable shade with base of good quality wood / metal primer of reputed brand. Rate inclusive of labour and material	sqm	Rs. 120

Which skill will be needed?

Only Painting work. For science related visuals, an artistic painter / science teacher will be needed.

35. Doors and Windows

What to do in Doors and Windows?

Most of our schools have been made by government agencies. Very often, their engineers may have little understanding of what children may like in a school. As a result, most of the doors and windows are painted in very dull depressing colours like dark grey, dark blue or green, dark brown so that they hide stains, etc. This is not only depressing; it also reduces the reflected natural light in the interior of the classrooms. It might be worthwhile to paint the doors and windows in lighter, brighter pastel shades as shown here to improve the physical environment.

Where can you see this idea in Delhi ?

You can see this idea in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra

The estimated cost of painting

Item of BaLA design work	Unit	Rate
Painting with synthetic enamel paint of approved reputed brand and manufacture of required colour to give an even shade on metal or wood. Two or more coats on new work over an undercoat of suitable shade with base of good quality wood / metal primer of reputed brand. Rate inclusive of labour and material.	sqm	Rs. 120

Which skill will be needed?

- Only Painting work



36. Furniture

What to do in Furniture?

Good, comfortable, attractive furniture for school children that is appropriate for their age and activity requirement is essential, especially for high efficiency and performance. In case your present furniture is good and suitable, you may assess if it can also be made attractive and pleasant by painting it in colours that are not distracting. Ideally, fixed desk and bench should be avoided altogether. Before painting the furniture surfaces must be properly smoothed or if minor repairs are required, they should be undertaken. Painting in pastel shades also makes the classroom interior more pleasant and better lit (due to higher internal reflection of natural light). In case such pastel shades are used for painting door and window, it may be desirable to continue the same colour scheme for painting furniture. This will bring the whole classroom environment in colour harmony.

Where can you see this idea in Delhi ?

You can see this idea in the following government schools in Delhi:

1. Government Co-ed Middle School, J. J. Colony, B Block, Savda Ghevra

The estimated cost of painting

Item of BaLA design work	Unit	Rate
Painting with synthetic enamel paint of approved reputed brand and manufacture of required colour to give an even shade on metal or wood. Two or more coats on new work over an undercoat of suitable shade with base of good quality wood / metal primer of reputed brand. Rate inclusive of labour and material	sqm	Rs. 120

Which skill will be needed?

- Only Painting work



PART - C

1. FUNCTIONS AND POWERS

I. General

II. Role and Functions of VKS Members and Officers

2. CONSTITUTIONAL GUIDELINES

3. FINANCIAL GUIDELINES

I. General

II. Funds Bifurcation

III. Purchasing

IV. Furniture and Other Repairs

V. List of Works

VI. BaLA interventions

VII. Forms

VIII. Methodology for Expenditure

4. ADMINISTRATIVE GUIDELINES

a. BaLA inputs

b. VIP references from VKS Functionaries

c. Strengthening of Supervision

d. Half Yearly Report

e. General Administrative Matters



1. FUNCTIONS AND POWERS

I. General

- a. **The VKS shall be involved in all the activities and programmes of the school including: -**
- i. Improvement in the academic performance of the students.
 - ii. Improvement in co-curricular activities of the students.
 - iii. Up keep and maintenance of the school building and improvement in cleanliness.
 - iv. Implementation of students "welfare schemes".
 - v. Implementation of the Mid Day Meals scheme.
 - vi. Ensuring proper water supply & electricity and sanitation in the school.
 - vii. To ensure completion of admission process in time.
 - viii. Introduction of new subjects/ activities.
 - ix. Functioning of libraries and laboratories.
 - x. Supervision of sports, vocational education and IT in schools.
 - xi. Monitoring of action taken on its own decisions/recommendations.
 - xii. Any other task that the Department may entrust to the VKS.

b. Note:

Members of the VKS should contribute for the Welfare of the Students/ School by submitting POSITIVE SUGGESTIONS.

The VKS in its meetings should not merely point out deficiencies in the school but should also suggest ways and means to rectify/remove them so that the Head of the School may immediately take action for their redressal with the concerned authorities.

In the interest of schools/student welfare, the VKS can grant permission to tie up with any private sector, school organization etc. However it shall be ensured that this will only be done to further student's interests and in no way shall any part of the school premises be used by the out side agency for its own purpose. The approval of the DDE shall also be taken.

II. Role and Functions of VKS Members and Officers

a. Chairman

- i. To accord approval for the date and time of the monthly VKS meetings.
- ii. Preside over monthly VKS meetings.
- iii. To ensure smooth proceeding of VKS monthly meetings.
- iv. To cast vote and make arrangements for votings (if voting is needed for passing any proposal during the meeting).
- v. To help to solve the School's problems in consultation with other members of the committee.

- vi. To provide support to the Convener in dealing with concerned outside agencies like PWD/DSIIDC, MCD, Horticulture, DVB and DJB etc.
- vii. To ensure timely submission of a copy of minutes of VKS meetings to the Directorate.
- viii. To make arrangements for preparing and timely submission of the annual report.
- ix. To attend the meetings called by the Directorate or CM's Office, and to take part in discussions.
- x. To perform other functions as a member of the VKS.
- xi. Any other responsibilities entrusted by the Directorate.

b. Vice-Chairman

- i. To perform all the functions of the Chairman in the absence or vacancy of Chairman.
- ii. To perform the functions as a member of VKS.
- iii. Any other responsibilities entrusted in future by the Directorate.
- iv. To cast his/her vote for smooth passage of a proposal if such a necessity arises during a meeting.

Important:

In case both Chairman and Vice-Chairman have not been nominated then the concerned Zonal EO or DEO shall exercise all powers of the Chairman.

c. Convener

- i. To make arrangements for monthly meetings after getting the date, time and agenda of the meeting approved by the Chairman.
- ii. To place the problems, working report and action taken report before VKS during the meetings
- iii. To make arrangements for providing a copy of the Directorate's circulars/ orders / memorandums regarding VKS to each and every member of the VKS during the meeting.
- iv. To initiate follow up action with regard to the proposals passed/approved by VKS.
- v. To assist the chairman in smooth proceedings of VKS monthly meetings as per agenda.
- vi. To cast his /her vote for smooth passage of a proposal if such a necessity arises during a meeting.
- vii. Helping to solve the problems of the school (s) in consultation with the VKS members.
- viii. Dealing with concerned outside agencies like PWD, MCD, Horticulture, DVB and DJB etc.
- ix. To make arrangements for getting the minutes approved and signed by the members of VKS.
- x. To ensure timely submission of the copy of minutes of VKS meetings to district and VKS Cell, Directorate of Education.
- xi. Make arrangement for preparation and timely submission of the half yearly report.
- xii. To attend the meetings called by Directorate or CM's Office and to take part in discussion.
- xiii. To perform the other functions as a member of VKS.

- xiv. To initiate action on all circulars, orders etc issued by the Directorate in respect of VKS.
- xv. To make use of financial powers delegated, and responsibilities given to him /her by Directorate of Education.
- xvi. To make arrangements for allocation and utilization of VKS fund in time and as per proper procedure and provisions.
- xvii. To make the records available to VKS and supervising officers for inspection like vouchers, stock registers, purchase procedure file, minutes register, circular file etc.
- xviii. The Convener shall provide full cooperation and assistance to the Committee and use the school budget and staff to facilitate the Committee's functioning.
- xix. To prepare and issue identity cards to VKS members with his / her signature with prominent mention of validity period.
- xx. To provide the copy of circular / orders regarding VKS to all VKS members in the meeting.
- xxi. Any other responsibilities assigned to him/her by Directorate.

d. Co-convener

- i. To communicate the problems/suggestions regarding his /her school (Shift) to the Convener and ensure its inclusion in the VKS meeting agenda.
- ii. To perform all the administrative functions, other than financial powers, of Convener in the absence or vacancy of Convener.
- iii. To perform all functions as a member of VKS.
- iv. Any other responsibilities given to him/her by Directorate.

e. Member

- i. To attend VKS monthly meetings.
- ii. To take active part in discussions and put up suggestions in the meeting.
- iii. To cast vote, if need be {(other than the concerned JE (who does not have voting rights)}.
- iv. To co-operate in VKS works while dealing with other agencies like PWD, DJB, DVB, Horticulture and MCD etc.
- v. Any other responsibilities assigned to him/ her by Directorate.

f. District Authorities

- i. To monitor smooth functioning of VKS through District Nodal Officer (VKS).
- ii. To inspect VKS meeting minutes register, works done out of VKS funds, process purchase procedure file and funds utilization during school inspection and submit inspection report.
- iii. To arrange at least one quarterly meeting with all Chairmen (VKS) of that District.
- iv. To make inquires of CM/VIP reference regarding VKS and submit the report to VKS Cell, Directorate of Education.
- v. To provide support to VKS in dealing with other agencies like PWD, DVB, Horticulture, DJB, MCD etc.
- vi. To ensure implementation of departmental circulars/orders regarding VKS in schools.

- vii. To monitor timely utilization of VKS funds.
- viii. To attend meetings regarding VKS at higher level and, if necessary, at school level also.
- ix. Any other responsibilities assigned by the Directorate.
- g. VKS Cell, Directorate of Education**
- i. To monitor smooth functioning of VKS at state level.
- ii. To put up proposals for change/ new constitution of VKS.
- iii. With the approval of the competent authority issue circulars, orders, and memorandums regarding VKS.
- iv. Execute necessary changes in nomenclature of VKS as per guidelines.
- v. Monitoring follow up action regarding CM/VIP references regarding VKS.
- vi. Monitoring of VKS funds/ timely allocation and utilization.
- vii. To monitor VKS quarterly meetings through District Nodal Officer.
- viii. To conduct inquiries on VKS complaints through district authorities and submit reports.
- ix. Attend/ organise meetings, workshops and seminars regarding Bhagidari.
- x. All administrative work related to Bhagidari and VKS.
- xi. Execution of necessary policy changes related to VKS through district authorities.
- xii. Execute and circulate VKS policy changes with prior approval of the competent authority.
- xiii. Any other work assigned by the Directorate.

2. CONSTITUTIONAL GUIDELINES

- i) VKS shall meet regularly at least once in a month.
- ii) This will preferably be the first Saturday of the month. Meetings should preferably be held at any time between 11 a.m. and 3 p.m. However the VKS may decide to meet more than once in a month, if necessary. It can also meet at a time convenient to it.
- iii) The minutes of each meeting will be recorded by the Convener.
- iv) A copy of the minutes will be submitted on line alongwith a hard copy to District Office and VKS Cell, Directorate of Education.
- v) The Convener will also furnish an Action Taken Report on each point/decision taken by the VKS in the previous meeting and record it in the minutes.
- vi) The Chairman shall preside over meetings. In his absence Vice-Chairman and in the absence of both, the VKS shall elect a member to preside over the meetings.
- vii) The quorum for the Vidyalaya Kalayan Samiti would be attendance of 60% of the members. Thus the quorum for each meeting will be as follows: -

Sl. No.	School Campus	No. of members in the Vidyalaya Kalayan Samiti	Quorum
1.	One School VKS:	17	09
2.	Two School VKS:	24	13
3.	Three School VKS:	30	16
4.	Four School VKS:	34	18

- viii) All decisions to undertake minor work/repair will be taken by the VKS. A decision in this regard will be valid only if the VKS has a quorum and a majority of the members constituting the quorum vote for a particular item of repair. The number of members to validate a decision would be as follows: -

Sl. No.	No. of members in the Vidhyalaya Kalyan Samiti	Quorum	No. of Members required to validate a decision
1.	One School VKS:	17	09
2.	Two School VKS:	24	13
3.	Three School VKS:	30	16
4.	Four School VKS:	34	18

- ix) A register would be maintained for keeping the record of the minutes of the meetings of Vidyalaya Kalyan Samiti.
- x) In all meetings, the planning/action to be taken in future will be discussed and finalized by majority of the members present in the meeting.
- xi) The VKS must satisfy itself that all works have been carried out as per need/work order and that the quantity and quality is as per the work order. The VKS will certify the same in writing and this certificate will form part of the records of VKS and will be open for inspection.

3. FINANCIAL GUIDELINES

I. General

- i. **Wherever cleaning, sanitation etc. have been outsourced, no expenditure shall be made out of VKS funds for the cleaning of school building/ school campus and sanitation.**
- ii. VKS funds will be placed at the disposal of the Convener.
- iii. All VKS works/purchases during the financial year shall not exceed Rs.4 Lakhs and no part financing will be made from any other funds.
- iv. VKS expenditure shall not exceed Rs.1,00,000/- in every quarter of the financial year. In other words the total amount of Rs.4,00,000/- shall be spent @ Rs. 1,00,000/- per quarter.
- v. Surrender of VKS funds, or demand for excess VKS funds, shall not be allowed.
- vi. In case of emergent situation, the Convener may get a work executed and ex post facto approval may be obtained from VKS as early as possible. The expenditure on such items should be limited annually to 5% of the total VKS allocated funds i.e. Rs. 20,000/-.
- vii. All civil and electrical repair work exceeding Rs. 50,000/- shall be got done through PWD/DSIIDC.
- viii. An expenditure up to Rs. 200/- can be incurred for every VKS meeting for tea/snacks.
- ix. All District DDEs will ensure that each Convener is allocated funds by the end of April of every year and it is properly utilized as per guidelines.
- x. No permanent/part-time employee will be deployed out of VKS funds.

II. Funds Bifurcation

- i. All Conveners are authorized to spend Rs. 4 Lakhs per annum per school building with the approval of the VKS.
- ii. Breakup for VKS funds i.e. Rs. 4 Lakhs will be as follows:-
 - w. Rs. 1.5 Lakhs will be for maintenance. **(THIS SHALL BE SPENT AS PER THE TERMS AND CONDITIONS IN THIS ORDER).**
 - x. Rs. 0.5 Lakh will be for purchase/repair/replacement of dual desk. **(THIS SHALL BE SPENT AS PER THE TERMS AND CONDITIONS IN THIS ORDER).**
 - y. Rs. 2.00 Lakhs will be for the new project BaLA.
 - z. Convergence with the above heads/bifurcation can be done by EO/DEO concerned with the approval of concerned DDE.

III. Purchasing

a. General

- i. The Convener will certify on the bill that VKS has accorded administrative approval and after completion of work, VKS has inspected the work and found it satisfactory.
- ii. A copy of the minutes of the VKS meeting need not be attached with every bill. A certificate from the convener shall be given on each bill.
- iii. Conveners are authorized to incur expenditure up to Rs. 15,000/- per item at a time without calling quotations however the approval of the VKS is required and a Certificate on the bill as follows has to be given:
 “I ... am personally satisfied that these goods purchased/repairs done are of the requisite quality and specification and have been purchased /got repaired from a reliable supplier/contractor at a reasonable price/rate.”
- iv. However, an expenditure in excess of Rs. 15,000/- per item at a time would be incurred only after observing codal formalities as per provisions of GFR.
- v. Individual sanction issued by the Convener with the approval of the VKS will not exceed Rs. 15,000/.
- vi. Sanction for more than Rs. 15,000/- will be issued with the certificate on bill by the Convener that the approval of the District DDE concerned has been obtained for the work.
- vii. Only those electrical and electronic items shall be purchased which have the ISI mark.
- viii. The expenditure on glass fittings / window panes shall not exceed Rs. 10,000/- of total funds allocated in a year.
- ix. Replacement/Purchase of Black Boards/ Book Shelves/Text Book Storage/Teachers-Table & Chairs and Science Lab Equipment will not exceed Rs. 15,000/- per year totally for all items taken together.
- x. Purchase of publications, books, journals and periodicals shall not exceed Rs. 2000/- of the funds allocated for the year.
- xi. Expenditure on printing and binding (Library Books) will not exceed Rs. 5000/- per annum.

b. Dual Desk

- i. The Convener will check the allotment of dual desks to his/her school on the MIS (website) and will also confirm the same from CARETAKING BRANCH (HQ).
- ii. For purchase of dual desks the Convener will certify that the schools have not received any supply of dual desk through central purchase or the supply of central purchase is less than the requirement.
- iii. In case the desks are being supplied through central purchase by the Directorate, the amount available for purchase of desks will be used for repairing of existing dual desks.
- iv. While purchasing dual desks from local market/other than central purchase the rates will not be more than that of Tihar Jail & the specification will also be as per Tihar Jail.

v. **Specification of Desks**

- a) Rates shall be same or lower than that prescribed by Tihar Jail.
- b) Only desks seating 2 children shall be purchased. Desks for single child and 3 children shall not be purchased.
- c) Individual, separate chairs only shall be purchased. No benches or chairs joined to desks shall be purchased.
- d) The Convener will take into consideration the requirement of students' height, age etc. while purchasing the desks.
- vi) Before making any purchase the information on the Departments website uploaded by the Additional Director (Estate), Directorate of Education shall be checked.

c. **Fans**

- i. Replacement/Purchase of Ceiling Fans/Exhaust Fans/Flood Lights will not exceed Rs. 15,000/- per year totally for all items taken together.
- ii. Purchase/Replacement of fans will be of ISI marks and at the approved rates prescribed by DGS&D. The list of firm's rates etc. shall be placed on the MIS (website) by the Estate Branch on 1st April of each year.

d. **Purchases of Home Science Lab Equipments**

- i. Purchasing of OTG (oven, toaster, grill), mixer grinder, food processor and utensils can be made out of VKS funds.
- ii. Expenditure for installation of gas connection, cylinders and gas stoves can be made out of VKS funds.
- iii. These items must be purchased with ISI mark.
- iv. Expenditure for purchasing / repair of above items shall not exceed Rs. 10,000/- per year.
- v. This expenditure of Rs. 10,000/- per annum will be for every school, and is meant to ensure that even the Boys' schools have this basic equipment. Each HOS shall be responsible for this.

IV. Furniture and Other Repairs

- i. Obsolete, surplus or unserviceable stores can be disposed of upto Rs. 5000/- at a time in respect of VKS articles.
- ii. The expenditure on repair / replacement / purchase of desks shall not exceed Rs. 50,000/- take to purchase out of funds allocated in a year.
- iii. The expenditure on repairs of furniture other than desks shall not exceed Rs. 15,000/- of funds allocated in a year.
- iv. Major furniture repair other than dual desks exceeding Rs. 15,000/- per year of funds allocated shall be got done out of separate Non-Plan funds.
- v. Work register will be maintained like stock register and the bills for work/labour will be entered into work register.

V. List of Works

- | | |
|--|--|
| <p>a. Minor Civil Works/repairs</p> <p>i. Repairing of leaking taps.</p> <p>ii. Repairing of WC, Rain Water pipe, sewer line, cleaning of manhole and leakage of pipelines.</p> <p>iii. Repairing/replacement of glass panes/FRP sheets in windows and doors.</p> <p>iv. Replacement of water taps.</p> <p>v. Replacement of waste pipe in washbasin/sinks.</p> <p>vi. Replacement of broken lid of PVC water tanks.</p> <p>vii. Change of valve in the PVC water tanks.</p> <p>viii. Periodical cleaning of ceiling/roof.</p> <p>ix. Normal cleanliness of school.</p> <p>x. Normal cleaning of toilet block, and urinals.</p> <p>xi. Removal of malba.</p> <p>xii. Cleaning of sewers/blockages.</p> <p>xiii. Filling of earth, brick layering & Horticulture work.</p> <p>xiv. Repair of boundary wall, gate and tube well.</p> <p>xv. Patching of floor.</p> <p>xvi. Providing and Fixing of GI pipe in water line.</p> <p>xvii. Providing and fixing of seat in toilet.</p> <p>xviii. Providing and Fixing of cistern in toilet.</p> <p>xix. Fixing of water tapes.</p> <p>xx. Purchasing of Phenyl, tejab, Brooms, Duster, pochee etc.</p> <p>xxi. Paint on Black Board.</p> <p>xxii. Repairing of classrooms walls, Stage etc.</p> <p>xxiii. Repairing of classrooms gates with fixing of kabja, kunda.</p> <p>xxiv. Fixing Iron Sheet in gates.</p> <p>xxv. Fixing of inter lock in gates.</p> <p>xxvi. Providing and fixing of economical tiles.</p> <p>xxvii. Painting work.</p> <p>xxviii. Welding work.</p> <p>xxix. Repair/renovation of window.</p> <p>xxx. Purchase/Replacement of PVC Water Tanks.</p> <p>b. Horticulture Works: -</p> <p>i. Cover of Lawn with bricks.</p> <p>ii. Use of composed khad in lawn.</p> <p>iii. Soil dumping for plantations.</p> | <p>iv. Plantation.</p> <p>v. Purchase of flowerpot.</p> <p>vi. Position After Changes.</p> <p>c. Minor Electrical works/repairs</p> <p>i. Tubes, chokes, starters, switch/sockets including repair and replacement.</p> <p>ii. Replacement of lamps/tube light.</p> <p>iii. Hylam sheet replacement.</p> <p>iv. Repairing of DBs including replacement of MCB.</p> <p>v. Fan blades repairing including minor repairs of fans.</p> <p>vi. Providing security light/ replacement of security lights/flood lights.</p> <p>vii. Wiring in classrooms.</p> <p>viii. Fixing of switch, Board etc.</p> <p>ix. Repairing of fans.</p> <p>x. Motor windings.</p> <p>xi. Fixing CFL Tubes.</p> <p>d. Other works</p> <p>i. Hiring of water tankers.</p> <p>ii. Repair of furniture like dual desks.</p> <p>iii. Purchase/repair of bulletin boards/ Comminuted board.</p> <p>iv. Repair of public address system.</p> <p>v. Repair of electrical/electronic devices like TV, DVD, VCR, VCP, VCD player, Tape recorder, 2 in 1, Audio CD player, aqua guard water cooler, Fridge, Electric motor, Water pump, computer, printer, duplicating machine, type writer, etc.</p> <p>vi. Providing and fixing of security net.</p> <p>vii. Providing and fixing of mosquito net.</p> <p>viii. Providing and fixing of iron Patti in windows.</p> <p>ix. Paint on stage etc.</p> <p>x. Repair of furniture other than dual desks.</p> <p>xi. Wooden work</p> <p>xii. The above list is only illustrative in nature. Work of similar nature for infrastructure improvement may also be undertaken by the VKS.</p> <p>xiii. Purchase/Replacement of medical/ first aid facility</p> |
|--|--|

VI. BaLA Interventions

- Rs. 2,00,000 (Two Lakhs) under VKS is available for BaLA interventions
- All instructions in this manual pertain equally to BaLA interventions works (including the painting work)

VII. Forms

WORK REGISTER

Name of School with ID No. _____ Page No. _____

Name & Nature of work _____

Sl. No.	Date	Vr. No	Particulars of work	Days or Vol. of work	Rate	Amount	Sign. of Office Incharge	C/S. of HOS
1	2	3	4	5	6	7	8	9

While payments for repairing work/labour work, a voucher as per the provisions of GFR is compulsory be maintained and attached with the bills as per the following proforma: -

PAYMENT VOUCHER FOR VKS WORK (IN TRIPLICATE)

Name of School _____ School ID No. _____

Payment Voucher No. _____ Date: _____

Paid Rs. _____ (Rupees in word) _____

to Sh. /Smt. /Ms. _____ Address _____ Phone No. if any _____ for following work/works carried out in the school.

Sl. No.	Particulars of work	Days/Volume Of work	Rate	Amount	Remarks
1	2	3	4	5	6

Certified that, above mentioned work/works have/has been carried out satisfactorily and the entry has been made in work register at Page No. _____

Signature

Name _____

(Incharge VKS)

Counter signed by HOS

VIII. Methodology for Expenditure

a. Definition of Minor Repairing Work

“The work costing less than Rs. 50,000/- at a time will be treated as minor work for VKS purpose. Beyond this limit will be treated as major work and may be executed by PWD/DSIIDC except furniture and dual desk repairing.”

b. Imprest Money

Imprest money of Rs. 5,000/- will be maintained by the Convener as per the provision of GFR/Central Account Manual, Volume-I, Para 10.12 as follows: -

- i. Initially Imprest Money amounting to Rs. 5000/ will be drawn from PAO.
- ii. Petty expenditure from Imprest money shall be limited upto contingent & emergent requirement and not as a regular practice.
- iii. Petty Cash Expenditure Vouchers will be entered into stock register/ work register.
- iv. These Expenditure Vouchers of Imprest money will be sent to PAO with required bills maintained for Imprest money to recoup the Imprest money.
- v. The amount of Imprest put standing on 31st March each year should be entered in the money column next year in main cash book.
- vi. Only Convener is empowered to accord approval for incurring expenditure from Imprest money.
- vii. Expenditure from Imprest money may only be incurred in such cases where the amount can easily be recouped by drawing through contingent bills.

c. Transfer of Convener

1. In case of transfer of the Convener it shall be compulsory to hand over/take over the documents listed below:
 - i. VKS Minutes register.
 - ii. VKS Codal formalities file.
 - iii. VKS Stock registers (Consumable and Non-Consumable).
 - iv. VKS Bonchers file.
 - v. VKS work Register.
 - vi. VKS Correspondence file.
 - vii. Cash in Hand.
2. In case no handing/taking over is done it will be the responsibility of the successor/present Convener to produce these documents to inspecting staff/Audit team.
3. In case of the non-production of the documents responsibility will be fixed and necessary action, as deemed fit will be initiated as per the CCS (Conduct) Rules.

c. Audit

1. Wherever there are complaints of any nature against utilization of funds by VKS, EO concerned should look into the matter during visit/ inspection.

2. In case of serious lapses the matter should be put up to DDE for necessary decision as to whether or not special audit is to be conducted.
3. Wherever utilization of VKS funds is less than 25% of the allotted budget, the EO concerned must inspect the same closely and look into reasons for non-utilization of funds by VKS.
4. It is to be especially seen whether necessary maintenance of building is being ignored or neglected.
5. The audit report and inspection reports of the VKS shall be sent directly to the VKS Cell.
6. Wherever an expenditure of Rs. 3.90 lakh or more has been incurred from the funds of VKS the same has to be got audited.
7. Routine audit of VKS will be conducted by the following team:-
 - i. EO / DEO Concerned Zone.
 - ii. AAO/JAO of Concerned Distt.
 - iii. AO/OS (Admn) of Concerned Distt.
8. Special audit will be conducted by the Audit Branch, Dte. of Education.

4. ADMINISTRATIVE GUIDELINES

a. BaLA Inputs

- i. All 'BaLA' works require the administrative approval of the VKS.
- ii. When sending proposals to the District, different proposals of 'BaLA' will ideally be put up in one file only.
- iii. The proposals will be put up with estimated cost of the work.
- vi. Top priority will be given to the 'BaLA' proposals while processing the file at District level.

b. VIP References from VKS Functionaries

- i. Duty of convener shall be promptly to write as per decision of VKS.
- ii. Convener to ensure purchase and liaisoning with particular authority as decision of VKS.
- iii. Identity card will be issued to the member of VKS under the signature of convener with prominent mention of validity period.
- iv. Quarterly District Authorities will meet VKS Chairmen members listen to their problems and try to sort them out at District level.
- v. Nodal officer (VKS) are required to take follow up action at higher level and providing support to convener in dealing with concerned outside agencies like PWD, MCD, Horticulture, DVB, DJB etc.
- vi. No member including Chairmen will use the name of VKS on their visiting cards/ letterheads.
- vii. On the receipt of VIP references /complaints, VKS Cell will send them to concern District DDE for investigation and the report received will be put up further.

c. Strengthening of Supervision

- i. DDEs should regularly and compulsorily meet VKS members /Chairpersons quarterly.
- ii. EOs also should meet VKS member/ chairperson quarterly.

d. Half- Yearly Report

By the 10th of October every year, the VKS shall submit a full report of its activities including financial, to the Education Department, for the period till 30th September. For the period 1st October to 31st March, the report shall be submitted by 20th April every year.

e. General Administrative Matters

- i. All VKS conveners will submit the copy of VKS meeting minutes and Funds Utilization Report every month to the Zonal Office and the same will be monitored by DDE concerned who will send the brief consolidated report in respect of all school buildings under his/her jurisdiction to ADE (VKS).
- ii. Separate records in respect of VKS funds will be maintained like voucher file, bills file, cash book, quotation files, stock register etc. and will be made available to Inspecting Officers at the time of their visit of the school.
- iii. Proper follow up action at District Level for streamlining the functioning of VKS in schools, maintenance of records, proper supervision of work done through VKS and utilization of funds should be reflected in inspection reports of DEOs / EG / DDEs.
- iv. If the school is running in double shifts, or more than two schools all the Principals will attend the VKS meetings but the primary responsibility of repairs, purchases, maintaining accounts, codal formalities, etc. shall be that of the VKS conener.
- v. Utmost cooperation shall have to be ensured between the Principals by frequent interaction etc.
- vi. The Conveners and Co-conveners shall be mentioned in VKS list only by the name of the schools instead of their names.
- vii. Each district will nominate one EO/ DEO as nodal office to look after VKS/ Bhagidari matters.
- viii. District authorities will meet quarterly with VKS Chairmen and listen to their problems and try to sort them out at district level and Nodal Officer (VKS should be directed for required follow up action at higher level and providing support to conener in dealing with concerned outside agencies i.e. PWD, MCD, Horticulture, DVB, DJB etc.
- ix. The minutes of these DDE meetings should be circulated within 3 working days amongst all concerned with a copy to VKS Cell.

Sd/-
(ANKITA MISHRA)
ADDL. DIRECTOR OF EDUCATION (VKS)
Dated: Oct. 2007

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