B a L A
Building as Learning Aid and

i - B a L A
Inclusive-Building as Learning Aid

શિક્ષણનો અધિકાર
સર્વ શિક્ષા અભિયાન
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for developing
Model Schools of
Sarva Shiksha Abhiyan (SSA), Gujarat

Introduction

BaLA (Building as Learning Aid) is an innovative concept towards **qualitative improvement in education,** through developing child-friendly, learning and fun based physical environment building in **school infrastructure.**

This concept was originally developed by **Vinyas, Centre for Architectural Research & Design** with support from **UNICEF.** It is now implemented across the state in **all districts in more than 1620 Model Schools, since 2006 by SSA Gujarat.** SSA Gujarat has trained its large team civil engineers at district and block level, several teachers and Head Masters of schools have been trained to plan, implement and effectively use the BaLA concept in Model schools. While government may have limited resources, the demand for making or converting schools to Model schools with BaLA is growing by day.

What is BaLA ?

BaLA is a way to holistically plan and use the school infrastructure. It incorporates the ideas of activity based learning, child friendliness and inclusive education for children with special needs (CWSN). At the core, it assumes that the **architecture of school can be a resource for the teaching-learning processes.**

There are two levels of this intervention:

1. Develop the SPACES to *create varied teaching-learning situations*

2. Develop the BUILT ELEMENTS in these spaces as *teaching-learning aids*

The Spaces can be
- > Classroom
- > Corridor
- > Steps and staircase
- > Outdoor space

The Built Elements can be

- ➢ Floor
- ➢ Wall
- ➢ Window
- ➢ Door
- ➢ Ceiling
- ➢ Platform
- ➢ Furniture

BaLA is about *innovatively treating* the space and the built elements to make the existing school architecture more **resourceful** with **higher educational value** in a **child friendly manner.**

But, why BaLA?

It
- ➢ Lets **school be conceived in a holistic way**
- ➢ Makes the school a **child friendly place**
- ➢ Can be introduced in **existing and new school**
- ➢ Makes **school an exciting place,** allowing **learning with fun**
- ➢ **Creates conducive self-learning situations** for children Can help creating **inclusive learning spaces** and provisions spaces for **Children With Special Needs (CWSN) - i-BaLA is being developed for this purpose.**
- ➢ Allows learning materials **accessible to children,** at all times
- ➢ Does not allow the TLM to be stolen or misplaced and hence it can can remain orderly
- ➢ Allows **Teachers to adapt them** to suit their specific needs
- ➢ Is **more lasting and durable**
- ➢ Can be **combined with building repairs** and **up-gradation**

Intervention of BaLA could be achieved through a large inventory of 'design ideas' developed by Vinyas through an intense interdisciplinary approach. These are listed as follows. They have been implemented at several urban and rural sites across the country. Few illustrated examples follow from Gujarat.

SPATIAL SETTINGS FOR BaLA DESIGN IDEAS

Existing, Formal, Structured Settings for Learning

- ❖ *Primary School*
- ❖ Class rooms of grades I & II
- ❖ Class room of grade III
- ❖ Classrooms of grades IV & V
- *Upper primary school*
- ❖ Classrooms of grads VI & VII

**Existing and Proposed, Informal Settings for Learning**

Existing settings
- ❖ Circulation Corridor Space
- ❖ Outdoor Space and Natural Environment
- ❖ Developing space between two blocks
- ❖ Developing backyards and plinths


Proposed settings

- ❖ Counter as a Space for Interaction
- ❖ Space for Exploration and Discovery
- ❖ Space for Exploring Three Dimensions
- ❖ Activity Space to Play with Mud and Sand
- ❖ Space for Adventure Play with Tyres

Slid & Tyre Ladder   Drum Swing
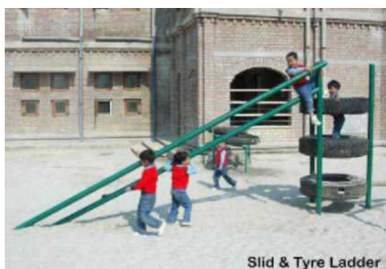
DESIGN IDEAS FOR FUN & LEARNING

Understanding the Physical World Around Us

1. Measures Around Us
   - Scales Horizontally and Vertically
   - Milestones
   - Weights
   - Capacity
2. Angles Around Us
   - Angle Protractor on Window Glass
   - Angles on a Window Grill
   - Door Angle Protractor
   - Cupboard Angle Protractor
   - Angles in a Bench
   - Highlighting Naturally Occurring Angles in Buildings
3. Balances
   - Wall Balance
   - See-Saw Balance
4. Symmetry Around Us
   - Symmetry in the Built Elements
   - Revealing Part-Whole Images
   - Symmetry in Geometrical Shapes
   - Symmetry in Mirror Images
   - Symmetry in Traditional Motifs and Patterns
   - Rotational Symmetry
   - Symmetry in the Natural World
5. Invert Images
   - Inverted Images on Railings
   - Inverted Images in Mirrors
   - Inverted Images on Borders
6. Visual Illusions on Walls
   - Impossible Illusions
   - Deceptive Illusions
   - Dual Illusions
7. Colour Teasers
   - Fan Colour Wheels
   - Window Colour Panel
   - Colourful Sun Catcher
   - Panel of Colour Shades
8. Map Your World
   - Map of the Classroom
   - Map of the School
   - Map of the Neighbourhood / Village
   - Map of the City / District / State
   - Map of the Country
   - Map of the World
   - Me and my World
   - Activity Map in Brick and Sand
9. Planetary Orbits on the Ground
   - Simple Planetary Orbits
   - Planetary Orbits with Twelve Divisions
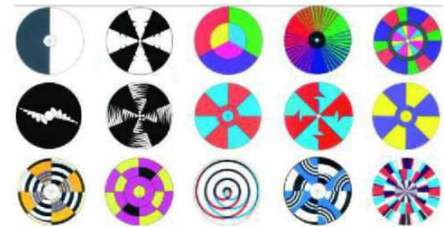
Understanding the Passage of Time in Our Daily Lives

10. Time Devices
    - Wall Clock
    - The Hourglass
      - Window Shutter Hourglass
      - Bottle Hourglass
    - Sundials
      - Ceiling Sundial
      - Wall Sundial
      - Sundial on the Ground

1 1 . Calendars on Walls
- Calendars for Classroom
- Long Calendar
- Square Calendar with Clock
- Calendar for the Whole School
12. Time Lines
- Cubby Holes as a Time Line
- Tiles as a Time Line
- Word Organisers as a Time Line
13. Cycles Around Us on Circular Built Elements
- Continuous Cycles with Beginning and End
- Continuous Cycles without Beginning or End

Dealing with the Complexity of Numbers

14. Number Lines
- Wall Number Line Tiles
    - Number Line Caterpillar
    - Number Line Train
    - Number Line as a Row of Children
  - Floor Number Line Tiles and Panels
    - Number Line on Paved Floor
    - Stepping Stones as Number Line
15. Abacus as Built Element
- Gintara on Windows
- Hoop Abacus on Wall
16. Place Value Window
- Place Value Chart for four digit numbers
- Place Value Window for seven digit numbers
- Place Value Window for nine digit numbers
17. Fraction Aids
- Fractions on Window Grills
- Fractions on Wall Tiles
- Fractions on Floor Tiles
- Fraction Disc on Ground

Ways of Interacting with Language

18. Prewriting Aids
- Prewriting Patterns on Window Grills
- Prewriting Patterns on Wall Surfaces
- Prewriting Grooved Patterns on Walls
19. Writing and Displaying Surfaces
- Writing Boards on Wall
- Chalk Board on Wall
- Pin-up Boards on Wall
- Writing and Pin-up Boards on Wall
- Hanging Display System on Ceiling
20. Book Corners
- Classroom Book Corner
- Cosy Book Corners in Corridors and Outdoors
21. Play with Words
- Word Wall with Alphabet Border
- Word Organiser on Wall
- Labelling Around Us
22. Visuals Around Us
- Folk Art
- Traditional motifs
- Kolams
- Visual Patterns
- Line drawings
- Visuals for Giving Information

- Some Interesting Visuals
- Shape Images on Window Grills
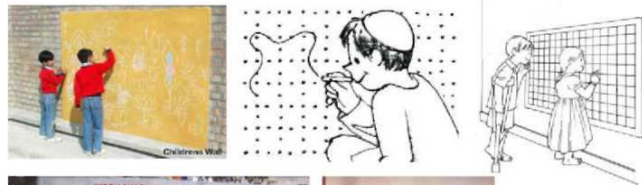- Highlighting Naturally Occurring Shapes

23. Trails to Explore
    - Clue Boards

Doing and Learning

24. Activity Boards and Surfaces on Walls
    - Geometrical Patterns Board
    - Hidden Shapes Board
    - Squiggles Board
    - Thumb Prints Board
    - Alphabet Shapes Board
    - Shape Poem Board
    - Children's Wall
25. Dot Boards on Floor and Walls
    - Dots in Straight Rows
    - Dots Staggered in Straight Rows
    - Geoboards on Walls
26. Grid Boards
    - Wall Grid Boards
    - Window Glass Grid Boards
    - Floor Grid Boards

Children's Own Little Games

27. Board Games on Floor and Seats
    - Indigenous Board Games
    - Flat Dice
28. Magic Squares on Floor and Walls
    - 3x3 Magic Square
    - 4x4 Magic Square
29. Stapu Frame on Ground or Floor

Design Ideas that can be Used in Many Ways

30. Tracing Surfaces
    - Tracing Tiles
        - Tiles for Tracing Three Dimensional Shapes
        - Tiles for Tracing Regular and Irregular Shapes
    - Tracing from Window Glass
31. Tangram Tiles on Floor and Walls
32. Brick and Tile Patterns on Floor and Walls
    - Simple Brick and Tile Patterns
    - Complex Brick and Tile Patterns
33. Cubby Holes and Peep Holes on Walls

Fun Ideas

Visual Fun
34. Play of Sunlight
35. Mystery Wall
36. Mirrors on Walls
37. Periscope on Wall
38. Perspective Lines on Walls
39. Rainwater Wall
40. Display Museum on Walls

Fun with sound
41. Pipe Phone Railing
42. Loud Speaker on Wall
43. Musical Railings
44. Bell / Chimes

Other fun ideas

45. Extrusion Moulds on Platform
46. Shape Moulds on Platform
47. Mazes
48. Joy of Movement and Pause
49. Post box

Developing and Enhancing the Natural Environment

Enhancing experience and learning opportunities, Naturally

50. Natural Learning Materials
51. Colours, Naturally
52. And Some Fragrance Too
53. Inviting More Birds, Bees, Butterflies, Insects
54. A Mini Waste Water Herbal Garden
55. Climb, Jump, Swing... On Trees
56. Nature and Culture

Enhancing the physical environment, Naturally

57. A Living Filter and Buffer Belt
58. Creating a Visual Screen
59. Natural Shade And Insulation for Buildings
60. Shade / Grove / Nook / Corner for Everyone
61. Enhancing Rainwater Harvesting from Roof Top and Surface Run-Off

Many of these design ideas and much more has been implemented across **1620 Model Schools spread over all the districts of Gujarat.** If you visit these schools, you will also find a lot of **innovation** in these schools. In fact, no two schools will be identical or same.

A school before BaLA intervention
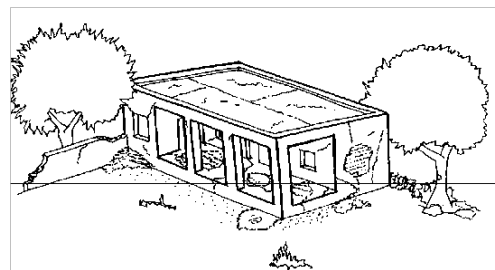
The school after BaLA intervention
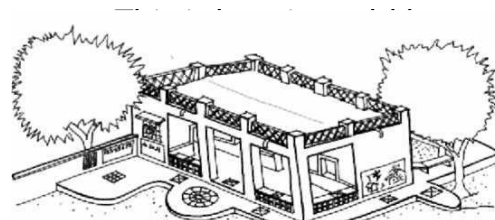
What is *i*-BaLA ?

Nationally, now there is a focus on making **inclusive learning environment for Children with Special Needs (CWSN)** in all schools. Hence, SSA in Gujarat is now taking another initiative of **i**-BaLA or **inclusive-BaLA.** This is the first time that it is being done in the country. This is being developed in partnership with Blind People's Association Ahmedabad and Vinyas. Presently some BaLA ideas are being adapted for use in learning activities for **children with hearing impairment, mental retardation and visual impairment.** It may be noted that only **mild and moderate categories** of such children are likely to attend the inclusive schools. *i*BaLA is designed for such children. SSAM plans to take it to a large number of schools across the state.
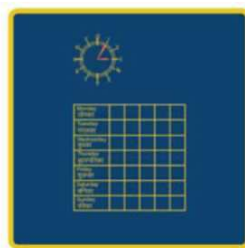
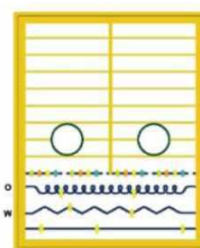Some of the **i**-BaLA idea adaptations are given below:
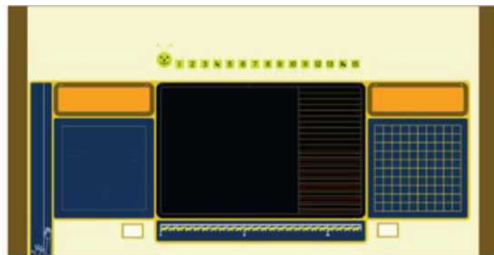
Walls of typical i-classroom design for learning for different classes
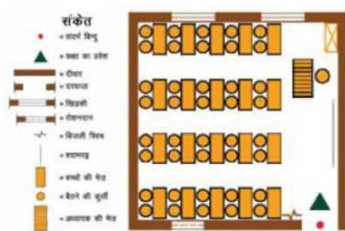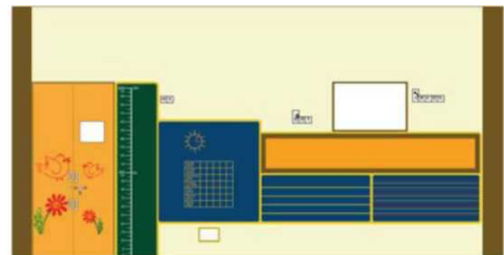
Embossed i-Map of Classroom

Engraved and embossed i-

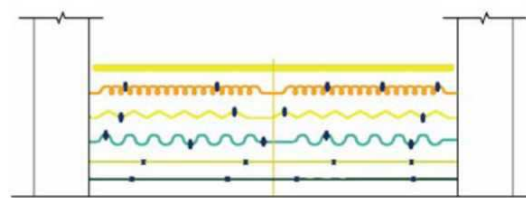i-Prewriting Aid on

i-Board Game - Snake & Ladder

Embossed Horizontal Unit i-Scale

Embossed Horizontal Dimension i-Scale

Engraved Prewriting Groove on Wall

Prewriting i-Grill and Rail in corridor

Drum and Tyre Swings, Merry-go-round, Climber and Banister slides adapted for inclusive play grounds

7

All these BaLA design ideas were developed with an in-depth understanding of children's

- ❖ **Spatial aspirations** from their school
- ❖ **Natural behavioural patterns** in school space
- ❖ Need for facilitation of all round **growth and development**
- ❖ **Problematic areas of comprehension** in teaching and learning
- ❖ **Socio-cultural-educational background** at home
- ❖ Need for **literacy environment**
- ❖ **Special needs** of **hearing impairment visual impairment,** or that of **mental retardation**

It is also based on a **detailed study of repair, environment enhancement and construction issues** of the school building components

CONCLUSIONS

1. **Maximising educational value of built structure.**

Built structure of the school has a dual use:

> To give **shelter** to the educational activities.

> To be a **resource for teaching-learning.**

School building architecture should be optimally made to derive **maximum educational value.**

2 **Planning for school with interdisciplinary approach, with the child in the focus.**

> The **design intervention** in the school to **focus on children** for **design, implementation** and **maintenance.**

> **Teachers to be the facilitators in ensuring**

> **the use of these interventions.**

> **School administrators and teachers are being oriented and trained towards effective use of available resources.**

> **Each school to plan for intervention with its specific needs, limitations and potential.**

3. **Taking design ideas to the ground.**

> **SSA in Gujarat** has already made about **1620 Model schools** with BaLA across all the districts of Gujarat. Now the need is to cover **as many schools as possible.**

> VINYAS has developed about **150 design ideas** grouped under **61 categories** for rural as well as urban **elementary schools.**

> In order to **implement** them in a school, **a team work** of school **administrators, teachers, children, architects, educationists** and **construction workers** is essential. SSA in Gujarat has already developed this capacity to implement and monitor across various districts.

> BaLA is accomplished in an education programme like SSA by effectively allowing the **pedagogy, teacher's training units as well as civil works units to work in close coordination.**

> Presently, Government of Gujarat gives **Rs 2.5 Lakhs to develop one Model school with BaLA.**

4. **The visible change in schools.**

> **BaLA interventions in the Model schools bring a tangible, visible change.** It has a very high visibility in the eyes of the **community, school teachers,** and the **children.**

> **There has been increase in enrolment, attendance and retention of children in Model schools.**

> **Children now come before school hours and go back much after school hours.**

> **Learning in school** is now **more interesting, joyful** for children and teachers.

> There is **higher ownership of the school** by the teachers, children and the community.