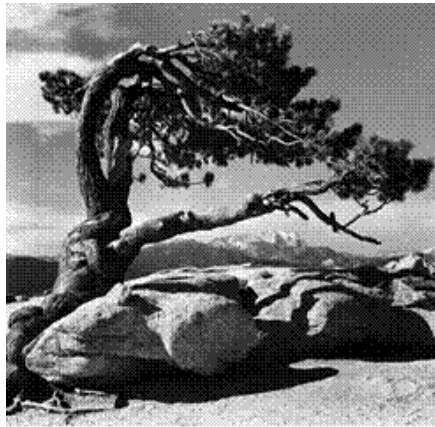


Non-Profit Organization  
providing Assistance to the  
Physically & Economically  
Challenged in India for  
Education and Income

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# ASHRAYA



*Hey Look! The pine tree is bending  
Over the rocks like a frail old man blessing  
A burly child with his stick,*

*The scorching sun whips its back,  
And the heat smacks its branches,  
Shaking off crumbled leafs of shade  
That scramble for refuge in craggy folds.*

*As God's children go on a star-hunt,  
The world of ASHRAYA stands on its head,  
A top spinning in perfect harmony.*

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## **Project Terra Firma**

### **Complementary Education in Rural Higher Primary Schools Hanur Taluk, Karnataka Phase III - 2012**

#### **1. Summary**

This document provides an overview on Project Terra Firma implemented in 6 select Higher Primary Schools in Hanur Taluk, Karnataka. In this project, ASHRAYA runs activities that provide complementary education through fun and experiential learning. ASHRAYA is the prime executor of these activities and provide all the funding to support these activities. The activities are centered on 3 components:

1. Fun educational projects and competition day
2. Setting up and running libraries
3. Setting up and running science (and nature) clubs

We have already successfully piloted the above activities at Kannur School in Hanur Taluk since 2008; and established a replicable and repeatable model to be applied at other schools. In 2012, we worked with the BEO (Block Education Officer) of Hanur Taluk to extend this working model to 5 additional schools. The BEO also helped drive these activities to success through high level visibility, leadership and sponsorship.

#### **2. Background and Context**

The state governments in India have done a lot for primary schools (1<sup>st</sup> to 8<sup>th</sup> standard) in rural parts of the country, pouring in investments in school buildings, trained teachers, text books etc. However, children passing out of these schools have gaps in many areas such as handwriting, math science and creative skills. These

gaps are higher in rural areas (i.e. farther away from the main cities). Our aim was to provide complementary education that could enhance the above mentioned skill sets of children passing out of these schools; using well proven methods in **experiential and fun learning**. We selected Hanur Taluk (sub-division of Hanur Taluk) since it is primarily rural (200 Kms away from Bangalore) with very few NGOs active in the area. In Dec 2008, we embarked on **Project Terra Firma** in partnership with the then BEO of Hanur Taluk. To date, we have completed the following projects and activities in Hanur Taluk. **ASHRAYA has spent close to Rs. 4.5 lakhs over the last 3 years on Project Terra Firma in Hanur Taluk.** We have been visiting the project area every 3 weeks.

1. **Create Model Schools**: We selected one model school (Kannur). A model school is defined as a school that has a dedicated and motivated set of teachers and headmaster/headmistress; displayed proficiency in at least one area; has a clean and hygienic infrastructure and study environment; and wherein teachers have expressed interest and desire to do better. Our goal was to showcase this school to motivate other schools to improve performance on their own. We have completed the following at Kannur School.
  - a. **Basic Materials**: In the year 2009, we identified specific gaps they have in terms of materials covering basic amenities and all skills (math, science, creativity, sports, handwriting, general knowledge and music) and supplied materials to fill these gaps.
  - b. **Fun Projects**: In the year 2010, we conducted an exam for all 250 students, scored the exams and selected top 100 students. We conducted fun educational projects for groups of 5 (20 groups in total) that were focused on learning and promoting curiosity. We conducted a fun project exhibition in which all groups displayed their projects and presented awards to the top 3 groups (students and teachers) and top 2 students per grade based on the results of the final exam.
  - c. **Library**: In the year 2011, we set up a library and equipped the library with 800 books (covering all subjects) and furniture. We have also staffed the library with an active librarian. The librarian has been trained to conduct activities in the library around government-identified MLLs. Students are issued library cards and check out books (one per student at any given time). Every class has one library period per week during which the librarian reads stories and conduct activities. The library has been fully operational for the last 2 years.
  - d. **Educational Clubs**: In the year 2011, we also set up and are running educational clubs for select students. We identified and procured materials and equipment for each club. We continuously monitor the execution of the session plans. We nominated teachers to run the clubs on a regular basis and ensure that the students prepare project reports at the end of each activity. We fund all local visits and activities. We bring experts to train students on the various activities (e.g. science teachers, chess experts, experienced naturalists). These experts conduct interactive seminars on required topics. We also conducted a science fair in March 2012 displaying the top experiments and special projects to the larger community and nearby schools. We have established clubs (that have been fully operational for the last 18 months) will be in following areas:
    - i. **Science Club**: This club has an active science lab with experiments. The club also revolves around conducting experiments and arranging visits to science museums.
    - ii. **Nature Club**: This club has an active biology lab and involves trips to nature spots in the vicinity (e.g. botanical gardens, wildlife sanctuaries, plantations and adventure treks)
2. **Improve Select Skills Across All Schools**: In the year 2009, we worked with the BEO to identify two skills for development, handwriting and creativity. We selected 17 schools in Hanur Hobli and supplied materials (copywriting books, pencils, erasers and paper) to all schools related to handwriting improvement in Kannada and English. We administered tests at beginning to identify scope for improvement at the individual, grade and school levels. We inspected the usage of materials and improvement in skills on a continuous basis (once every 45 days). This project was temporarily stalled due to 2 back-to-back changes in the BEO which prevented us from monitoring and following up with all

schools.

### 3. **Project Expansion Undertaken in 2012**

ASHRAYA incorporated the learning from the last 4 years in Hanur Taluk and applied the model established in Kannur School to 5 other model schools in Hanur Taluk. The following is what we had learnt to be key success factors from our operations in Hanur Taluk.

1. Large scale projects beyond 10 schools are very difficult to monitor and administer
2. Need ongoing monitoring by a ASHRAYA funded project coordinator
3. Need sponsorship, leadership and monitoring from the BEO office
4. Need daily progress monitoring and enforcing participation by school Headmasters/Headmistresses

In May 2012, we requested the BEO of Hanur Taluk to select for us 5 model schools that meet the following criteria: (1) Has a dedicated and motivated set of teachers and headmaster/headmistress; (2) Has displayed proficiency in at least one area; (3) Has a clean and hygienic infrastructure and study environment; and (4) Wherein teachers have expressed interest and desire to do better. The BEO selected 5 schools in the same Hanur Taluk in the following towns/villages – Kempayyanahalli, Ramapura, Managalli, Basappanadoddi and Hanur. We have taken up the following activities in these selected 5 schools from June 2012 with the sponsorship and leadership of the BEO, Hanur Taluk.

- **Run Fun Educational Projects**: We are working with the teachers to select 60 students per school (300 students across 5 schools). We have divided the 60 students into 12 groups of 5 each and run fun educational projects such as those described below. Each project has an assigned teacher to guide and monitor progress. We described the activities to the project teams (only at a high level so that we can promote independent thinking) at the outset. Each project team has been given the permission to spend up to Rs. 600 on materials towards the project (as per the project needs) which will be funded by ASHRAYA. We are tracking progress on a periodic basis and provide guidance and feedback. We will conduct a Fun Day Competition in July 2013 and bring in independent judges (teachers from other schools; and administrators from the BEO office). We will allow school children from all 5 schools to come and attend the Fun Day and view the displays. We will select the top 10 projects and distribute awards to students and teachers. Please see below the comprehensive list of fun projects the students will be allowed to select from:

#### **1. Arts & Crafts**

- 1.1. Create greeting cards for different occasions
- 1.2. Make origami items on paper and paint them Create models and sketches of musical instruments
- 1.3. Make a miniature living room furniture set with wood (chair, table etc)
- 1.4. Collect broken pieces of wood of various shapes and build a story around them
- 1.5. Build a mini bullock cart using wood pieces
- 1.6. Build a miniature house or a dog kennel with mud and clay in the school premises
- 1.7. Create a quilt using scrap cloth showing the various stars in the night sky
- 1.8. Create a piece of art/model/garden/sculptures strictly using scrap material
- 1.9. Do mural paintings on a wall within your classroom
- 1.10. Paint a few shirts with various themes
- 1.11. Design jewelry of various types
- 1.12. Create a “painting” using grains of various colors and shapes (e.g. rice, wheat, lentils)
- 1.13. Create a scene of a local wedding using dolls (bride, groom, priest etc)
- 1.14. Create and enact a puppet show using shadows
- 1.15. Build a bridge using straws or ice cream spoons

#### **2. Engineering and Science**

- 2.1. Build model body organs using clay and plaster

- 2.2. Create min-models of irrigation projects (e.g. drip irrigation)
- 2.3. Build a house with electric wiring and mini-appliances
- 2.4. Demonstrate how to make simple things such as soap, candle etc
- 2.5. Create a sand model replica of the solar system
- 2.6. Demonstrate scientific explanations behind a few superstitions
- 2.7. Demonstrate evolution of man using clay models
- 2.8. Explain the functioning of the human heart through a model
- 2.9. Build a 7 layer liquid column with varying densities
- 2.10. Collect rocks and classify them
- 2.11. Create scale drawings of select homes in your village
- 2.12. Show the process of how to make honey all the way from been hives to a honey bottle
- 2.13. Show the process of how to make chocolate all the way from coco beans to a chocolate bar
- 2.14. Create a Plaster of Paris model of the human skeleton

### **3. Nature & Environment**

- 3.1. Enact life stories on domestic animals
- 3.2. Demonstrate learning about food items
- 3.3. Grow a vegetable garden
- 3.4. Grow a flower garden
- 3.5. Build a gober gas plant
- 3.6. Plant trees in school village
- 3.7. Make a working solar cooker
- 3.8. Create a visual story and history of the silk worm
- 3.9. Take photographs of your environment and create a story on how you see the world
- 3.10. Have a map of India and put miniature animals at places where wildlife sanctuaries are located
- 3.11. Create clay models of different types of dams with water flowing through them
- 3.12. Chart the migration of various birds from cold to hot places and back on a world map
- 3.13. Make a scrapbook of various endangered species of animals and (and those already extinct)
- 3.14. Create a collage with locally available flowers and vegetables
- 3.15. Create compost pit, produce and package manure
- 3.16. Build imaginative painted garbage cans
- 3.17. Demonstrate creation of pigments from natural materials
- 3.18. Classify leaves based on shapes
- 3.19. Collect various bark autographs and identify them

### **4. Math and Statistics**

- 4.1. Conduct a survey of local village and publish results (age, sex, height, weight etc)
- 4.2. Create a time chart of activities in a day
- 4.3. Create a normal curve out of various objects (leaves, human being heights)
- 4.4. Conduct a survey of land use in local area
- 4.5. Create a water use chart collecting data in houses within your neighborhood
- 4.6. Create a predictive model using collected data on say "How far will a person throw a short put?"
- 4.7. Find various numbers (1,2,3 etc) in your environment, list them and take photographs
- 4.8. Find various shapes (circle, square, triangle etc) in your environment, list them and take photographs
- 4.9. Collect data around traffic on your town main road and create traffic patterns (peak hour etc)
- 4.10. Demonstrate operations of a bank branch
- 4.11. Stack up rupee notes in each country on a map to show the foreign exchange rates
- 4.12. Build a cash register that can be used in a grocery store
- 4.13. Take one manufactured item like soap or biscuits and list the cost elements of manufacturing the item (through interviews)

### **5. History & Geography**

- 5.1. Create a treasure hunt game around historical events
- 5.2. Create flags of at ~30 countries and provide the history of each flag
- 5.3. Build a clay replica of Hampi town
- 5.4. Create map of India and a chart a train showing events around independence
- 5.5. Chart out the journey undertaken by Marco Polo on the world map
- 5.6. Enact the story of India's independence through characters
- 5.7. Create a map of the school village

## 6. Social Studies

- 6.1. Describe and enact various professions
- 6.2. Create travel brochures of some local sights (e.g. temples, dam)
- 6.3. Enact a drama around a social stigma like dowry
- 6.4. Enact a drama showing that all religions are the same
- 6.5. Enact a drama showing the evils of child marriage
- 6.6. Enact a drama showing the power of literacy and education

## 7. Writing & Literature

- 7.1. Create collages on environment, cleanliness, world leaders & world wonders
- 7.2. Create a magazine for the school village with various features
- 7.3. Write a diary for 3 months with pictures
- 7.4. Write a local village newspaper with various sections (news, sports, events etc)
- 7.5. Write poems about various aspects of your village; and/or various natural elements
- 7.6. Write a cookbook on various local dishes
- 7.7. Write a collection of stories around your village (each person in group writes one story)

- **Set Up and Run Libraries:** We worked with the school teachers and identified a set of 500 books (per school) that would help provide complementary education. We purchased the books and other materials. The libraries are geared towards fun learning with many experiential activities such and games. We will equip the libraries with decorative material and furniture. We also hired a full time librarian for each school and trained him/her on activity based learning. The librarian is in charge of distributing books, running a library period and directing experiential activities tied to MLLs (Minimum Learning Levels). We run the libraries on a continuous basis and monitor progress. Some best practices we follow in the library are

- **Infrastructure**

- a. 500 Books covering all subjects including lending and reference books
- b. Full time librarian
- c. Bright color environment with ethnic themes ("paint the library")
- d. Subscriptions to children magazines and newspapers

- **Process**

- a. GROWBY classification scheme
- b. Classify all students at beginning of year into GROWBY scheme and track progress year on year
- c. "Thought for the Day" on the white board
- d. Form library committee with librarian, key teachers, headmaster/mistress and top 3 students
- e. Synopsis cards filled by students while returning books
- f. Link books to curriculum, and use of library in curriculum planning
- g. Link research projects to curriculum
- h. Two library periods per week for each standard
- i. Clippings from magazines and newspapers on clipboard
- j. Rotating library student monitor
- k. Suggestion book and wish list

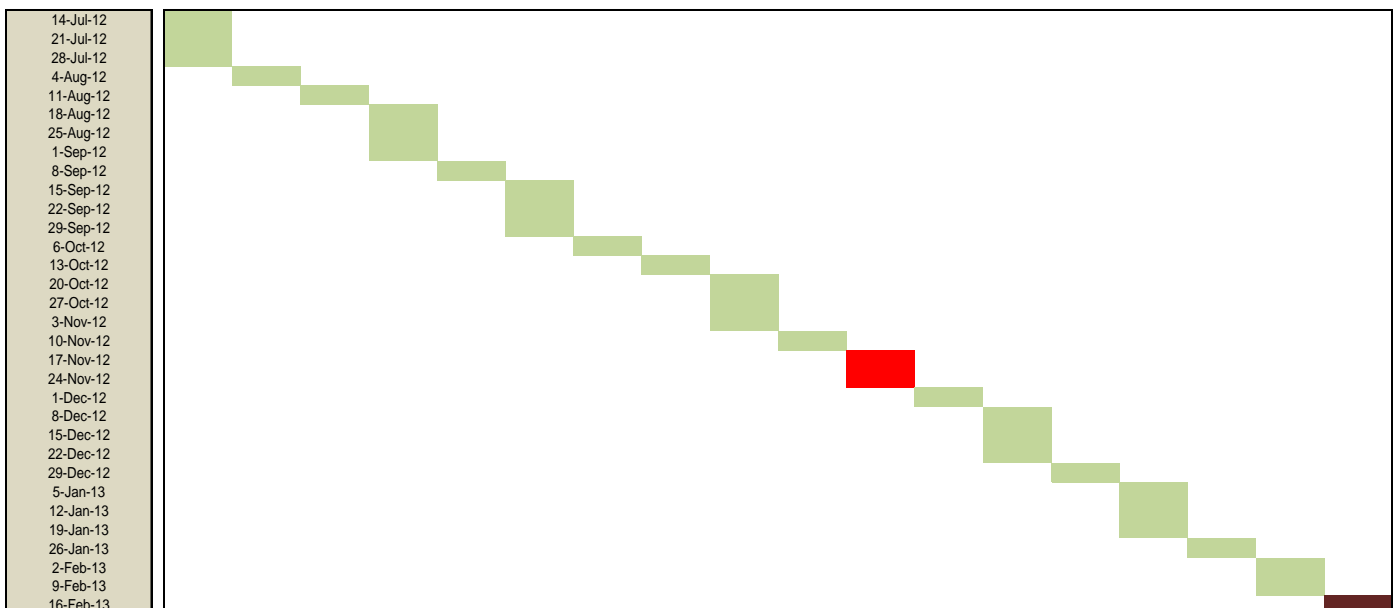
- **Student Activity-based Calendar**

- Activities based learning (tied to MLLs) around story books
- Art related activities
- Board games
- Book of the month club
- Break time quiz
- Treasure hunt with clues hidden in pages of different books
- Dressing up competition around books and characters
- Competition to create posters and bookmarks
- Educational movie screening
- Story hour under the tree
- Newspaper reading hour
- Reading reward schemes
- Hang pupils' art work on walls
- "Change the story" competition

- **Set Up and Run Clubs:** In 2014, we will work with teachers in each school and identify 20 students (Across all schools) for each club – Science and Nature [OPTIONAL]. We will work with headmasters/mistresses of each school and identify 2 teachers to run and manage each club. We will get the teachers by a reputed science lab training institution based in Bangalore; on running the clubs and set up session plans that will last the whole year. The activities in each club will revolve around the following (please see below the year long schedule for the science club):

- One-minute self conducted experiments (around the videos created by Prof. Arvind Gupta – see <http://www.arvindguptatoys.com/films.html>)
- Complex tutor-lead experiments. These experiments will cover various topics such as air, sound, light, matter and energy as shown in the table shown below.
- 2 Field trips to science museums and planetariums in Bangalore
- Educational videos from PBS, BBC and local science forums
- Talks by science experts from Bangalore
- Competitive science fair at year end

Subject ==>	Air	Science Video 1	Field Trip	Matter	Science Video 2	Light 1	Science Video 3	Training	Sound	Field Trip	Dussera Break	Science Video 3	Light 2	Science Video 4	Work, Force & Energy	Science Video 4	Prep for Science Day	Science Day
# of Experiments ==>	9			9		8			8				8		6			





No.	Modules	Concepts	No. of Experiments/ Activities	No. of Classroom Sessions	No. of Toys
1	Air	Air is everywhere Air occupies Space Hot Air Expands Air Pressure	8	3	1
2	Matter	Matter - Shapes and Space Molecules Arrangement of molecules States of matter Density	8	3	
3	Light-1	Light is a form of energy, Light rays Behaviour of light rays on matter Light travels in straight line Pin hole camera Shadow, Penumbra, Umbra Eclipse - Solar and Lunar	8	4	1
4	Sound	Vibration Propagation of sound Vibrating Air column Reflection of sound Echo	8	4	
5	Light-2	Convergent, parallel and divergent light rays Laws of Reflection - 1 and 2 Image formation in case of Concave, Plane and Convex mirror through reflections, applications Periscope	8	5	1
6	Work, Force & Energy		~ 6 - 8	3	

We will equip the clubs with necessary materials. Each student in each club will be required to main project reports of each activity. We will monitor progress of the clubs as they meet once a week (in alternating schools each week). At the end of the year, the students will be asked to set up experiment/educational displays. We will conduct a Club Day Competition at the end of the fiscal year and bring in independent judges (teachers from other schools; and administrators from the BEO office). We will allow school children from all 5 schools to come and attend the Club Day and view the displays. We will select the top 2 projects for each club and distribute awards to students and teachers.

#### 4. Project Expenditure in 2012

Expense Parameter	Unit	No. of Units per School	No. of Schools	Unit Rate (Rs)	Costs (Rs)
<b>1. Libraries Establishment in 5 New Model Schools</b>					
1.1 Books	Per Book	600	5	30	90,000
1.2 Librarians Salaries	Per Month	12	5	1,500	90,000
1.3 Main Project Corrdinator Salary	Per Month	12	1	5,000	60,000
1.4 Sub Project Corrdinator Salary	Per Month	12	1	2,000	24,000
1.5 Painting Schools	Lump Sum	1	5	9,000	45,000
1.6 Furniture	Lump Sum	1	5	9,000	45,000
1.7 Inauguration of Libraries	Lump Sum	1	1	15,000	15,000
<b>Subtotal New Libraries (Rupees)</b>					<b>369,000</b>
<b>Subtotal New Libraries (\$)</b>					<b>7,000</b>
<b>2. Continue Operation of Library in Kannur School</b>					
2.1. Additional Books	Lump Sum	300	1	30	9,000
2.2 Painting School	Lump Sum	1	1	9,000	9,000
2.3 Furniture	Lump Sum	1	1	9,000	9,000
2.4 Librarian Salary	Per Month	12	1	2,000	24,000
<b>Subtotal Surrent Library Operations (Rupees)</b>					<b>51,000</b>
<b>Subtotal Surrent Library Operations (\$)</b>					<b>1,000</b>
<b>Total Expenditure</b>				<b>Rs</b>	<b>420,000</b>
				<b>\$</b>	<b>8,000</b>

#### 5. Project Monitoring

ASHRAYA will do the following to ensure success in the project across the 5 schools:

1. 2 member project monitoring team based in the local area who will visit the schools once a week to track progress (teachers from Kannur School).
2. Project monitoring team will provide status reports to ASHRAYA every 3 months
3. Visit by ASHRAYA every 3 weeks to the project area
4. GROWBY classification of students and tracking students on progress made in this classification ever 3 months
5. Active monitoring and sponsorship by the BEO
6. Stipends of Rs. 500 paid to science teachers who run the science clubs
7. Librarians on ASHRAYA's payroll (sourced from local school areas)

We thank you in advance for your support and your continuous patronage.