

# ViBha-IAPT-Anveshika Progress Report and Future Course of Action

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# Presentation Outline

## Progress so Far

- Introduction
- Activities
- Progress



## Future Course

- NEST
- mini-Anveshikas
- Documentation



# How Does ViBha Started?

September, 2013

Brief meeting with Dr HC Verma on Physics education

October, 2013

- One day IIP at Hyd: 200+ teachers
- Follow up reveals many things

January, 2014

- Visited IITK and SGM Anveshika
- Brought many equipment

April, 2014

- Completed Registration Formalities
- Approved by IAPT EC



# ViBha is Focused on

## Sunday Science Club

Platform for students/teachers to discuss, and/or do experiments of their interest.



## Outreach Programme

Experiment demo of two hour duration on Saturdays in school premises. Objective is to connect, initiate by showcase experiment, and then followup.



## Larger Events

Organize large events like IIP, Science Camp etc., to convey message to large number of students/teachers.

# Sunday Science Club

## Mode of Operation

- 9:00AM to 12:00AM
- Anveshika Visit/ Publicity

## Students Sessions

- Five sessions so far
- Nine students from class VI to X
- Nominal fee of Rs. 200/Month

## Volunteers Training

- One training session of three hour
- Seven enthusiasts participated



# Outreach Programme

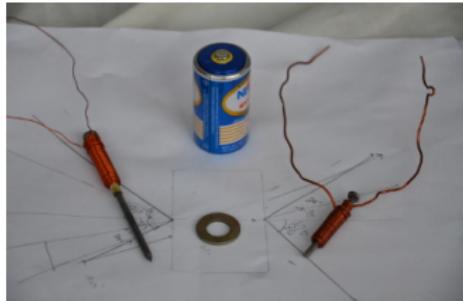
## Govt High School, Balapur

- Three sessions of one hour each, class VI to VIII
- Encouraging feedback from students and parents
- Reached 80+ students



## Saraswati Shishu Mandir, Badangpet

- Two sessions of one hour each, class VI to VIII
- Excellent support from school
- Reached 30+ students



# Larger Events

## Anveshika Science Camp

- Three Days: 16,17,18 May
- 48 Students: Class VI to XII
- Physics Activities and Puzzles
- Supported by Vijnana Bharati
- Shishu Mandir, Badangpet



## Demo Based Teaching

- Two Days: 25-26, May
- Participated in On-Going Camp
- Students Session: 60+ Students
- Teachers Session: 73 Teachers
- Sharda-Peetham, Bandalguda



# Resources with ViBha

## Material Resources

- All basic tools for making/ assembling experiments.



- Basic equipment on mechanics, waves, optics, thermodynamics, and electromagnetism



- We are slowly building the inventory on requirement basis

## Human Resources

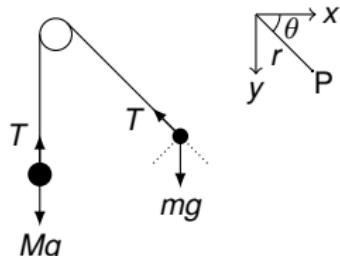
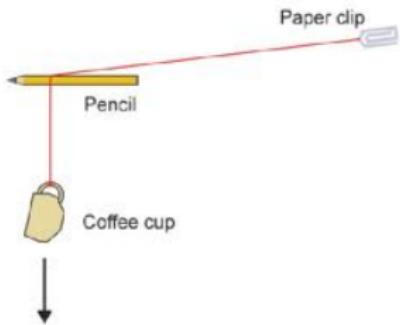


# Physics of Get Going Mug

## Physics Concepts

- Free Fall Under Gravity
- Newton's Second Law
- Circular Motion in Vertical Plane
- Rotational Mechanics
- Simple Pendulum

- 1  $r + y = l \implies \ddot{y} = \ddot{r}$
- 2  $Mg - T = M\ddot{y} = M\ddot{r}$
- 3  $T - mg \sin \theta = m(\ddot{r} - r\dot{\theta}^2)$   
 $mg \cos \theta = m(2\dot{r}\dot{\theta} + \ddot{r})$
- 4 Eliminate  $T$  and solve for  $r(t), \theta(t)$



# NANI Experimental Skill Test (NEST)

- Top Priority activity for ViBha
- Focus on Schools (Junior Colleges)
- Maximize utilization of existing resources and continual augmentation
- Vijnana Bharati, IAPT, . . .
- ViBha Constraints:
  - 1 Availability on Working Days (M-F)
  - 2 Poor Reach in Schools (Request Active Support from Bharati Bhawan)
  - 3 Ad-hoc Financial Sources



# Establishing Mini-Anveshikas

## Mini-Anveshika

- A Step Towards Initiating Schools Towards Activity Based Learning and Demo Based Teaching
- Provide Basic Equipment and Training to Get Started
- Provide Initial Support and Carefully Observe Performance till mini-Anveshika blooms into a full-fledged Anveshika or die-out.

## Procedure

- List out material and training requirement
- Identify interested schools through Outreach/NEST
- Invite Interested Teachers to ViBha
- Give Basic Material
- Invite for Basic Training
- Provide Initial Support
- Target: FIVE mni-Anveshikas

# Experiment Documentation

## Pros and Cons

- Preserve Knowledge
- Sharing within and outside NANI
- Quality Improvement through Reviews/ Comments
- Not Good for Creativity and Innovation

## Strength of ViBha

- Expertise in T<sub>E</sub>X/L<sub>A</sub>T<sub>E</sub>X and Programming
- Already Established Prototype
- Online Publishing of Contents

