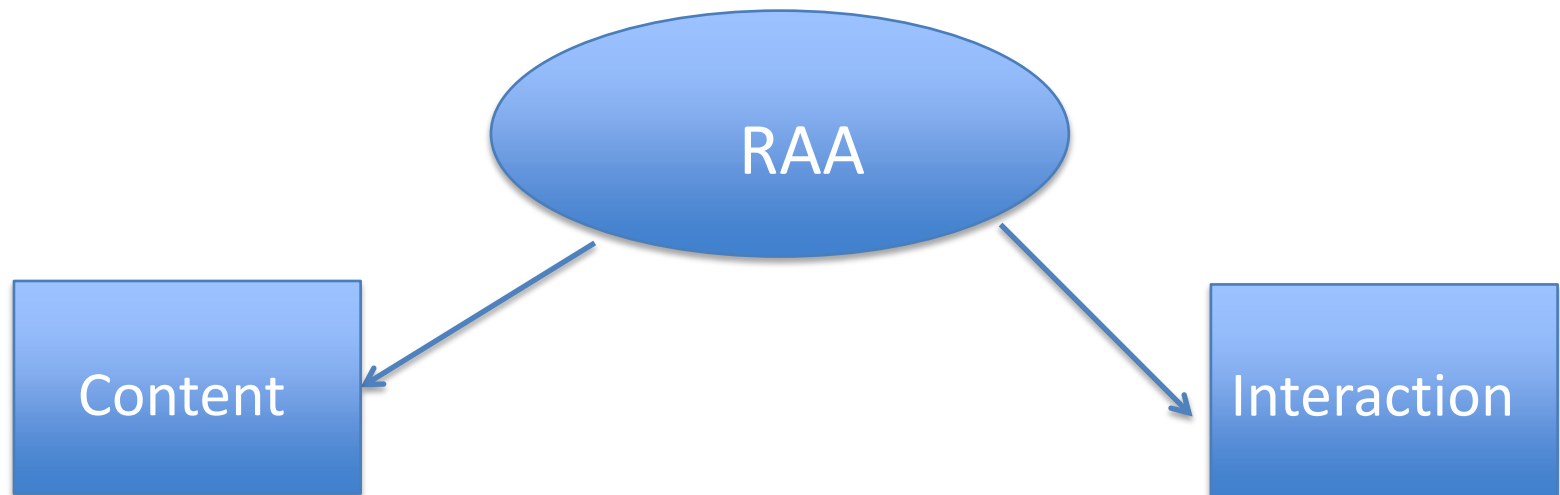


IIT Kanpur-Outreach Educational
Activities in spirits of Rashtriya
Avishkar Abhiyan

**H C Verma,
Professor of Physics, IIT Kanpur
Nodal Person, RAA**

RAA launched by MHRD on 9th July 2015

To create alternative strategy for Science and Mathematics Education in Schools



IIT Kanpur is doing such projects since 2002

IIT Kanpur projects on the lines of RAA

2002 EVOLVING A NEW METHODOLOGY OF PHYSICS EDUCATION AT SENIOR SECONDARY LEVEL BY EMPHASIZING EXPERIMENTAL COMPONENT (IITK)

2003 DEVELOPMENT OF OPEN ENDED EXPERIMENTS IN PHYSICS AT SCHOOL LEVEL (Vigyan Prasar)

2007 CHILDREN'S SCIENCE TRAINING PROGRAMME (Vigyan Prasar)

2008 DEVELOPMENT AND TRAINING OF TEACHERS FOR EXPERIMENT BASED TEACHING (Vigyan Prasar)

2010 DEVELOPMENT OF THE VIDEO CDS FOR THE MIDDLE SCHOOL STUDENTS ON SCIENCE AND MATHEMATICS (NCSTC)

2013 CREATING VIDEO RESOURCES FOR MATHEMATICS TEACHING IN SCHOOLS

2013 DEVELOPMENT OF RESOURCE MATERIAL FOR TEACHERS TRAINING IN EXPERIMENT BASED PHYSICS TEACHING IN RURAL AREAS (IITK)

Bringing Back the natural process of learning

Learning from the events, learning by questioning



The natural process of learning

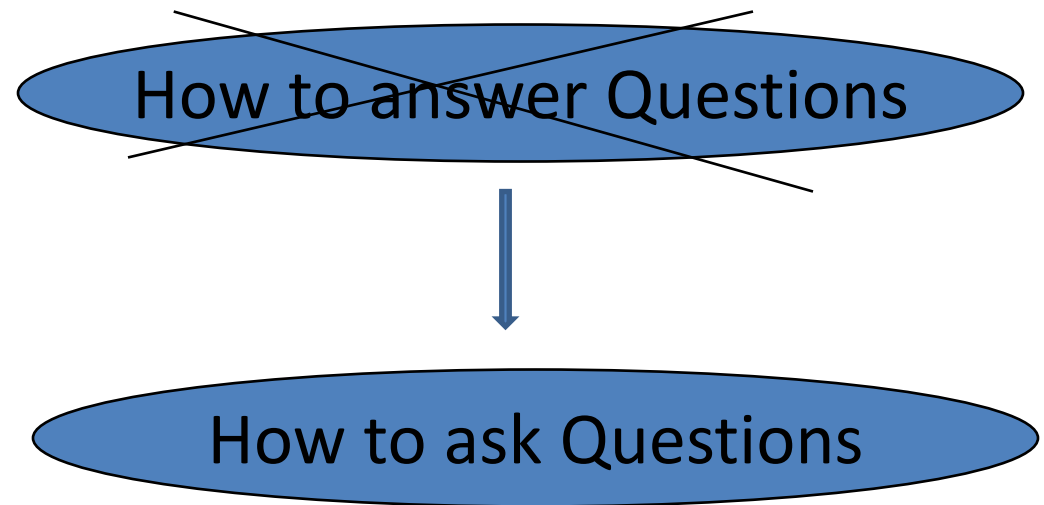
Focus problem of Science Education

Not able to feel the beauty of Science

Not able to connect science with live situations

Demos:

Effective Platform where new questions occur



Science Progresses only because of NEW QUESTIONS

Children's Science Training at IIT Kanpur (2007)

Two hours a day for 2 weeks in groups of 120

Two hours a week for 4 weeks in group of 16

Public show by 480 children on 120 experiments



Children's Science Training at IITK 2007

- 6-week Training, 3 hours a day
- 664 children from class 6-8 , mostly from smaller schools.
- No Textbook, No blackboard, No homework, No examination
- 36 Science topics selected, 4-5 experiments for each
- Science reached kitchens and drawing rooms
- Final Public show on 18th November 2007
- Children beaming with confidence, displayed before 8000 visitors₈

Bal Vigyan Mela 2007



First Sunday Club : चाय पर विज्ञान चर्चा

First Sunday of each month

About 40 teachers at Upper Primary to Higher Secondary (Plus2) level regularly meet

Lots of new experiments, discussion at Chai Samosa

Teachers not only come on Sunday, they pay for their conveyance apart from Club membership fee

All teachers participate, Science wrapped in the package of informal environment, debates, jokes

Going on for 23 months without break

Pitched at class 6-8 level, but even degree college teachers are equally benefited

First Sunday Club : चाय पर विज्ञान चर्चा



Introductory Interaction Program (IIP)

1 or 2-day workshop of School Physics Teachers

To give them glimpses of learning Science through short experiments itself



SCIENCE SHOULD BE FELT IN KITCHEN, PLAYGROUND, BACKYARD.^{12.}

Introductory Interaction Program (IIP)

8 to 10 IIPs every year with H C Verma as the main resource person

30 to 40 IIPs every year by resource persons trained at IITK

About 4000 teachers exposed every year to new teaching methods every year.

National Workshop of Utsahi Physics Teachers Science

Every year 6-day intensive training for School Physics Teachers selected from across the country from the IIP respondents.

About 40 teachers selected from the 4000 who have gone through our one day IIP somewhere in the year

Extensive Physics training From morning 8.15 AM to 10 PM, 9 hours of actual sessions every day.

Focus on deeper analysis, innovative low cost experiments, teaching methodology

Going on Since the year 2003

Creating Resource Persons, being used by Vigyan Prasar, State Education Depts.

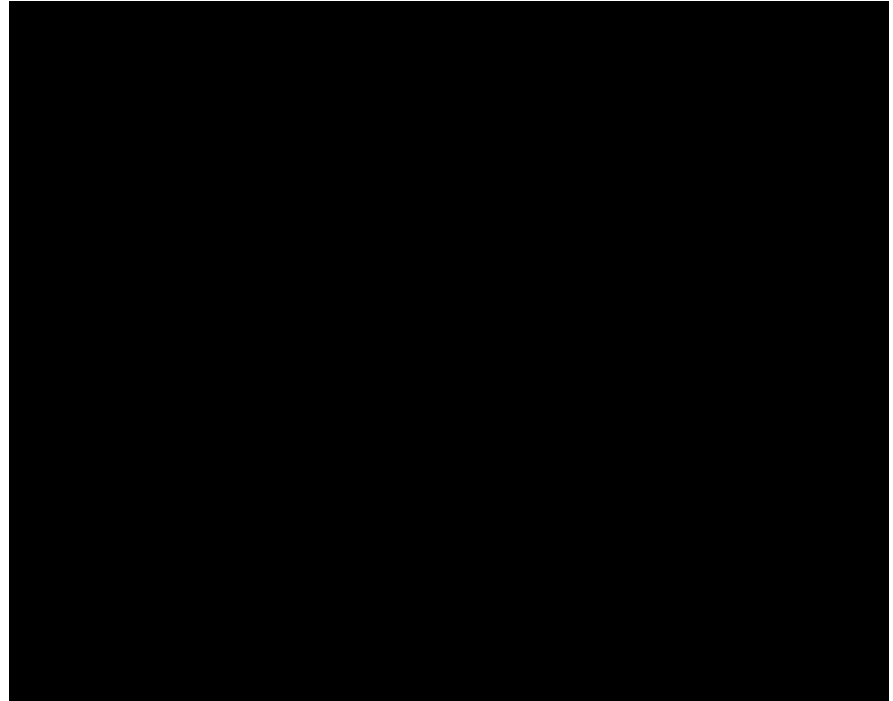
From this now we have a group of about 25 dedicated Resource persons ready to work anywhere in the country.

Video Content Creation for School Science in Hindi

20 video lectures on Science and Mathematics .

Available in youtube and at www.utsahiphysicsteachers.com

Lecture on Effects of force

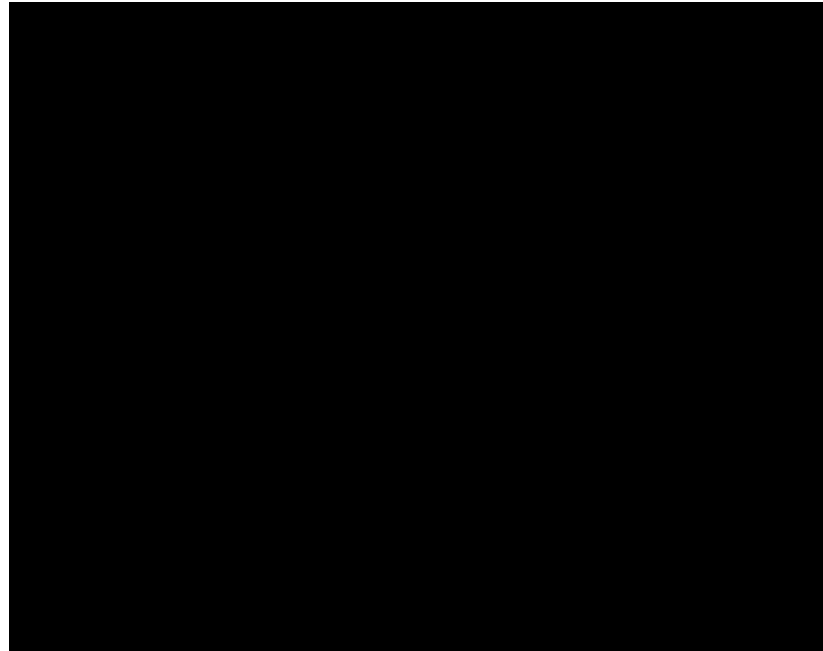


Video Content Creation for School Science in Hindi

For each chapter of class 5-6 UP Board Science textbooks.

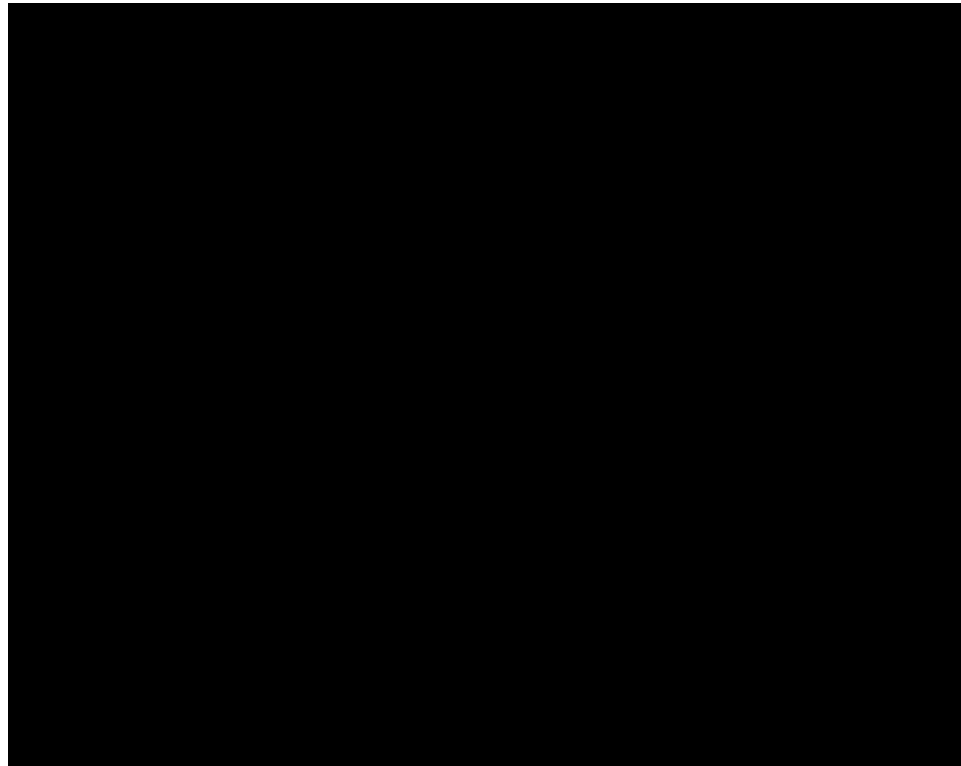
Videos are taken from free and renowned internet sources and audio is recorded in Hindi by our team.

Lecture on Plant growth



Short Videos for science discussion

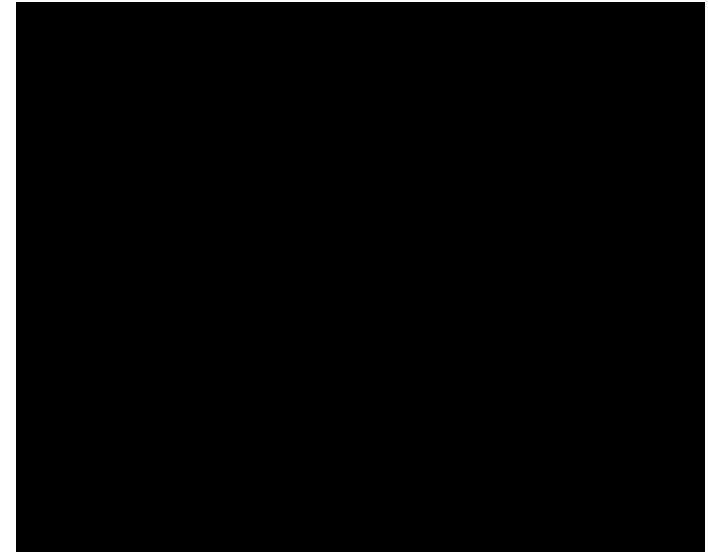
For Discussion on Static and
kinetic friction



Mathematics Teaching Strategies at Primary schools

In a local school, IITK team is researching on new strategies of Mathematics teaching at class 4-5 level.

1. (i) अपना और अपने किसी दोस्त का नाम लिखें।
 - (ii) अपने नाम में आने वाले अक्षरों की संख्या को लिखें और अपने दोस्त के नाम में आने वाले अक्षरों की संख्या को लिखें।
 - (iii) अपने और अपने दोस्त के नाम से प्राप्त अक्षरों की संख्याओं का गुणनफल बताइये।



3-day teachers training modules

- * for class 6-8 teachers of rural areas of UP board School.**
- * Each module takes up 3 Science topics**
- * Extensive work on concept sharpening with experiments and activities.**
- * Questions for discussion, paper for impact assesment**

The modules are being documented in Hindi so that other groups in Hindi belt can directly use them for teachers training programs.

Anveshika Project with Indian Association of Physics Teachers

Anveshika where new Physics experiments are conceived, designed, assembled and used by local school teachers and students.

Mass contact programmes to reach out large number of schools in the locality and motivate teachers and students to do science learning in more meaningful ways.

This was possible because we create Resource persons in our workshops

22 Anveshika Centers

Udhampur
Chandigarh
Delhi
Hissar
Pilani

Bhilwadi
Kolhapur



Parents too need orientation



Newton discovered Gravitation

When he was not sitting in the
classroom

