02

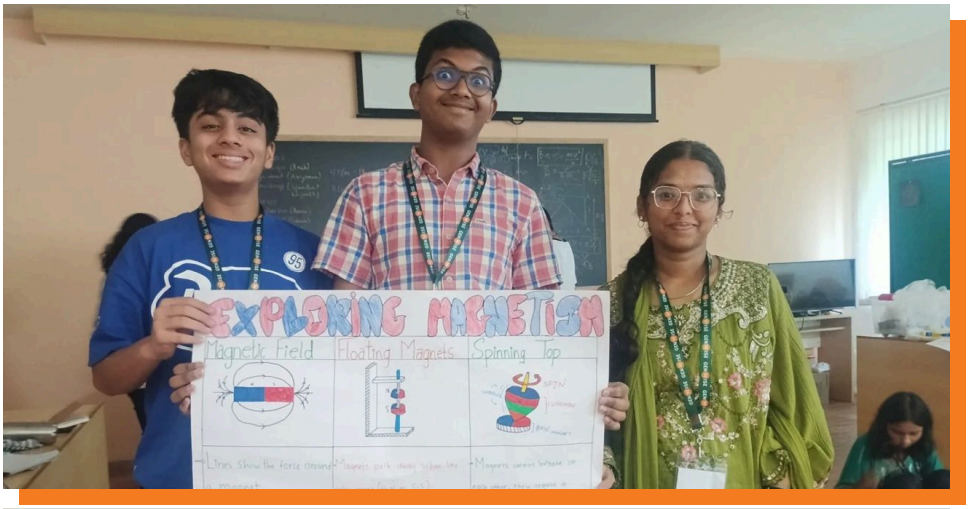
SCIENCE

Two Feet of Science: Walk Like a Scientist

Hands-on experiments where the lab bench is the textbook.

A tour through experimental science – hypothesise, measure, get surprised, measure again. The course for the kid who asks "but how do we know that?" and wants to find out with their own hands.

Last May: several children got their DC motors running, the class measured the size of a molecule, and they demonstrated experiments at the end of the course.



Taught by R.D. Prabhu, PhD Astrophysics, IISc · ESD Compact Modeling lead, GlobalFoundries.

Facilitator	R.D. Prabhu
Duration	3 weeks
Teaching hours	90+
Grade	Grades 8–11 (as of 2027–28)

Week by week

01
Estimation and mechanics

Guess before you measure: Fermi problems, the size of a molecule from an oil film, then forces, free fall, buoyancy and the pendulum.

- Fermi estimation
- Vectors and dimensional analysis
- Free fall and projectiles
- Buoyancy, density, the pendulum

02
Fields

Magnetism, static electricity and circuits, with iron filings, a levitating pencil, a Van de Graaff generator and an ammeter students learn to build.

- Magnetic fields and levitation
- Electrostatics and the Van de Graaff
- Resistance and circuits
- Induction: the galvanometer lab

03
Waves, light and the open lab

Cathode rays, the experiment that proves light is a wave, trigonometry used to measure a tree, then an independent project for the open day.

- Lenz's law and cathode rays
- Trigonometry for physics
- Interference and polarisation
- Independent project → open day

How does this course help your child?

Innovative pedagogy

Every idea is met as an experiment first: the class tests a hypothesis, argues about the result, and repeats it when a student doubts it. Worksheets exist to consolidate, not to introduce.

Academic acceleration

Grade 11–12 physics – vectors, fields, induction, wave optics – met two to three years early, through the apparatus rather than the equations alone.

Cognitive skillsets

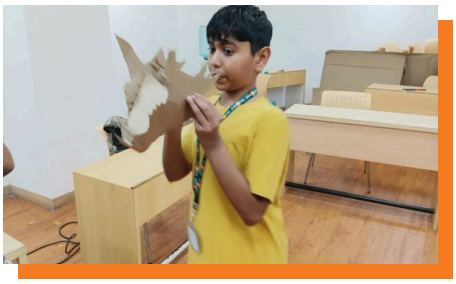
- Estimating before measuring
- Designing a fair experiment
- Reading a graph for a law
- Building and troubleshooting apparatus

Peer networks

Groups run the labs together, argue over results that look wrong, and present what they found to the room.

Questions to wrestle with

- **What's the difference between 'I observed' and 'I assumed'?**
- **How do you measure something you can't see?**
- **When your result looks wrong — is it the world or your setup?**







It ends with

An independent experiment, designed and presented at the open day.

May program · 9–29 May 2027 · MAHE Manipal

June program · 13 June–3 July 2027 · MAHE Bengaluru

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Watch the course in a minute

youtube.com/shorts/qoPc_FANmBM