



JOY OF LEARNING FOUNDATION

Opening windows of minds and hearts

ABOUT JOY OF LEARNING FOUNDATION

A registered, not-for-profit Trust, of competent and experienced people, committed to enriching school science classrooms in India, and raising scientific awareness. The team includes one IISc and three IIT alumni, with members, advisors, volunteers and sympathizers.

We demonstrate that learning science is possible with joy, stimulation and deep appreciation, in 2-4 hours specially designed workshops/webinars per topic for teachers, student-teachers, or children. Professional capacity building and upskilling for middle and high school teachers, advancing towards senior secondary, is a prime goal, covering fundamental concepts that appear in all syllabi across the country. Our environment portfolio is raising awareness in laypeople, specially amongst farmers and horticulturists.

Our sessions are highly interactive, inquiry based and experiential. Participants do a lot of hands-on work, observations and experiments with questioning, reasoning and discussions for minds-on. Foundational concepts in Physics, Chemistry, Biology, Environmental Science and Math are opened up, connecting real life with theory. The idea is to free learning from rote memorization, anxiety and stress of competitive exams. Participants work in groups, supported by resource people and constantly monitored formatively for understanding. Our offerings can be charged, or free for deserving target groups.

The foundation has following modes of work:

- Institutional off-site Workshops of one or several days
- Online webinars
- Short teacher courses
- Sustained in-service teacher-education with mentorship for teachers in school systems
- Children's camps over several days

WHAT WE OFFER

- **JLF PHYSICS SERIES**
- **JLF CHEMISTRY SERIES**
- **JLF BIOLOGY SERIES**
- **JLF ENVIRONMENT SERIES**
- **JLF MATH SERIES**



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PHYSICS

- Optics 1,2,3
- Microscope & Telescope
- Diffraction & Interference in Waves
- Sound
- Electricity 1,2,3
- Electromagnetism 1,2
- Air Pressure
- Heat & Temperature
- Heat Capacity, Latent Heat & Triple Point
- Density & Floatation
- Force & Newton's Laws 1,2,3
- Work & Energy
- Stars, Earth & the Solar System 1,2
- Rectilinear Motion
- Force of Gravity
- Universal Gravitation
- Particle Nature of Matter
- Centripetal & Centrifugal forces
- Diffusion, Osmosis, Surface Tension & Density
- Surface Energy & Surface Tension in Liquids
- Motion in a Plane
- Forces & Free Body Diagrams
- Relative Velocity & Frames of Reference
- Moment of Inertia & Circular Motion

UPCOMING

- Thermodynamics

CHEMISTRY

- Elements, Mixtures, Compounds
- Atomic Structure
- Chemical Bonding
- Chemical Reactions
- Acids & Bases
- The Mole Concept
- Combustion & Flame
- Introduction to Organic Chemistry
- Organic Chemistry - Functional Groups
- Fats & Soaps
- History of the Periodic Table
- Structure of Modern Periodic Table 1,2
- Prediction of Properties using the Periodic Table
- Physical properties - Metals & Non-Metals
- Chemical Properties of Metals & Non-Metals
- Energy in Chemical Reactions
- Mixtures, Solutions, Suspensions & Colloids

UPCOMING

- Separation of Mixtures
- Discovery of Atoms

BIOLOGY

- Human Circulatory System
- Human Digestive System
- Skeletal System & Movement
- The Living Cell
- Plant Lifecycles
- Systems & Processes in Plants
- Nervous & Endocrine System
- Introduction to Microbes
- Microbes & Causes of Disease
- Microbes & Vaccination
- Microbes & Antibiotics
- Mendel & Heredity
- Control of Germs
- Viruses 1
- Mitosis
- Nutrition

UPCOMING

- Plant & Animal Taxonomy
- Viral Diseases
- Evolution
- Genes & Heredity
- Biomolecules

TEACHING METHODOLOGY

- Inquiry-based Pedagogy
- Questioning in Classrooms

UPCOMING

- AI as a Tool in Education

ENVIRONMENT

- Ecosystems 1,2
- Carbon Cycle
- Nitrogen Cycle
- Forests as Custodians of Life
- Water - the Wonder Liquid
- Biodiversity
- Deforestation & Conservation of Forests
- Clean Water & Water Pollution
- Water Scarcity and Conservation
- Making Your Own Natural Cleaner - Bio enzymes
- Soil Fertility & Natural Farming
- Importance of Carbon for Farming
- Importance of Nitrogen for Farming
- Importance of Life in Soil for Farming

UPCOMING

- Solid Waste Management

MATHEMATICS

- Graphs & Equations of Motion
- Vectors 1,2
- Calculus

UPCOMING

- Logarithms
- Algebra

THE TEAM



Anshumala Gupta

Director, Joy of Learning Foundation
B.Tech, Mech Engg, IIT, Kanpur, and MA Elementary Education, TISS, Mumbai. Ex-senior consultant NCERT. 30 years' experience in publication, editing, teaching, teacher-education, course-design and online instruction design.



Vikas Saini

M. Sc. Chemistry, IIT Delhi, M.A. in Elementary Education, TISS. Worked as School Director, VSR Montessori School; Research Officer, TISS; Research Fellow at CLIX (a TISS-MIT Initiative); Pedagogy Consultant in a Mumbai school among other things.



Avani Gupta

B.E. CS, Manipal Institute of Technology, M.S. , CS, University of Texas at Austin (incomplete). Former Data Scientist, Microsoft, Paytm Labs and Airtel X Labs. Taught under-privileged children voluntarily and led covid relief work in Delhi.



Dr. Swapna Khare

Ph. D. Microbiology, IISc, Bangalore, Post doc & Ex-Scientist University of Texas Houston, US; Taught graduate level for several years. Handles life sciences in JLF.



Swagata Deb

PhD. Physics, IIT Delhi. Ex-scientist in Science College, Kolkata and IIT Delhi. Coached students at FIITJEE. Taught math and physics to high school children for 20+ years. She's a children's author with six published books with one on mathematics for children and one on the history of physics.



Nithya Nagarajan

M.Sc. Biochemistry, University of Madras. PG Diploma in Teaching from IAAT, Gurugram. Taught science for 5+ years in Cambridge schools, worked in Applied and Industrial Microbiology lab at IIT-Madras.



Dr. Shivani

Ph. D. Chemistry, DRDO, Pithoragarh; Post doc, IIT-Delhi; Taught graduate and post-graduate levels. Penned four books (scientific and literary), and several research papers in international journals.



Preeti Verma

M.Sc. Chemistry, IIT Madras, B.Sc. (H) Chemistry, Hindu College, DU, B.Ed. SPM college, Handles design and execution of chemistry topics in JLF.



Gunjan Doogar

Done Environment Management and Sustainable Development course from University of Wales, U.K., Masters from Delhi School of Economics. Worked in reputed NGO's and also CLEAN-India campaign on environmental activities.



Manisha Yadav

B Sc. Chemistry (hons), Zakir Husain Delhi College, B. Ed. SPM College, Handles Chemistry, video making and editing, with experiments in all sciences.



Parul Sood

Handles logistics, organizing of materials along with video making and editing

