

# STEMLAND NEWSLETTER

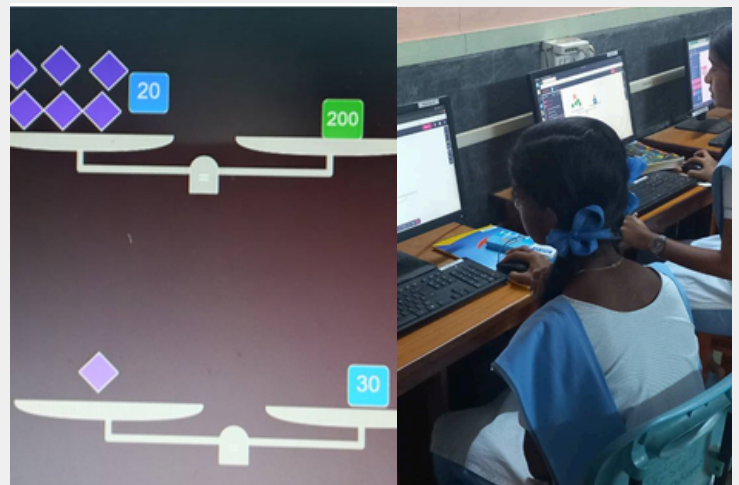
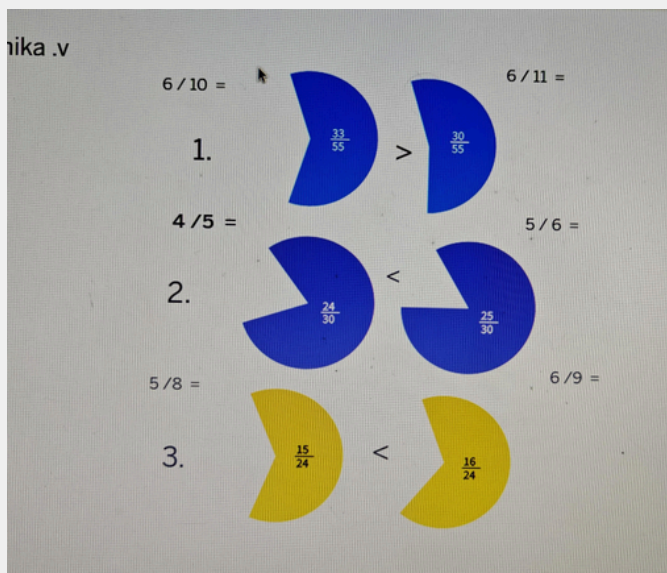
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STEM Land is a learning space where children explore Science, Technology, Research, Engineering, Art, and Mathematics through hands-on activities and real-life problem solving. Instead of learning only from textbooks, students engage in electronics, programming, robotics, mathematics, design, and creative projects that deepen conceptual understanding. Learning at STEM Land encourages curiosity, creativity, collaboration, and responsibility. Facilitators guide students to ask questions, explore ideas, and discover solutions independently. Through projects, peer learning, and presentations, students develop confidence, critical thinking, and problem-solving skills. This newsletter highlights some of the activities, workshops, outreach programs, and learning experiences that took place at STEM Land over the past months.

## VISUAL MATHEMATICS USING POLYPAD

Children from 6th grade at Isaiambalam School explored proper, improper, and mixed fractions through stories and visualizations using the Polypad platform. This approach helped them better understand the concepts and see how fractions can be represented visually.

The children first explored mixed fractions using Polypad and observed that a mixed fraction consists of a whole number and a fractional part. Through visual models, they were able to clearly see how fractions relate to whole numbers.



Children created their own algebraic puzzles by representing variables with shapes and placing numbers on both sides of the balance. They then challenged their friends to solve these puzzles. Through this visual approach, they could clearly see how numbers are removed from both sides to find the value of the unknown.

The activity made the class highly interactive, with children actively creating puzzles, solving their friends' challenges, and experimenting with different equations. This approach helped them better understand algebraic expressions and equations while making learning engaging and enjoyable.

## RTL SESSION AT NESS SCHOOL

An introductory session on Radical Transformational Leadership (RTL) was conducted for students and teachers of NESS School on September 15th, facilitated by Sanjeev. Students from grades 9 and 11 participated.

The session began with a short meditation and introduction to ground rules. As it was their first RTL experience, students actively engaged in discussions and reflections. Through simple activities, they explored their values, fears, and inner strengths. Many shared that recognizing their fears helped them understand themselves better, and the idea "I am bigger than my name" encouraged deeper reflection.

The session created a meaningful space for self-awareness, and several students expressed interest in joining a full 9-day RTL program.



## MATHEMATICS AND INDIAN KNOWLEDGE SYSTEMS

Educators attended a session on India's mathematical heritage facilitated by Sanjeev Ranganathan at Transition School. Through hands-on activities, participants explored ideas such as the visual proof of the Pythagorean Theorem and angle measurement using simple materials.

The session also discussed the contributions of ancient mathematicians like Baudhayan and reflected on how experiential methods can make mathematics more meaningful for students.



## INTEGRAL YOGA SESSIONS DURING AUROVILLE WEEK

During Auroville Week, a six-day Integral Yoga program was organized at Unity Pavilion. Activities included meditation, chanting, Savitri readings, and gratitude practices inspired by the teachings of Sri Aurobindo and The Mother. The sessions helped participants experience inner calm, reflection, and collective harmony.



## PHYSICAL AND MENTAL HEALTH AWARENESS

A health awareness session was conducted by Aathi and Gomathi. Gomathi spoke about physical well-being through practices such as mindful eating, fasting, and early morning routines. Aathi discussed self-awareness and mental clarity, encouraging participants to distinguish between "I don't know" and "I can't do."

Many participants began practicing habits like intermittent fasting, early rising, and improving focus in daily work.

## GARDEN CLEAN-UP WITH TEAMS



Every Saturday, members from different teams including software, hardware, Shifuians, B.Voc students, and STEM Land come together for a garden clean-up activity as part of our campus initiative. Teams of six are formed and each group is assigned a specific area to work on. Our team worked on clearing unwanted grass in the area opposite our office. By planning and working together towards a common goal, we were able to complete the task efficiently. The activity helped us collaborate with people from different fields, connect with new team members, and take shared responsibility for maintaining our campus environment. After completing the work, all the tools were returned to their proper places, reinforcing a sense of care and responsibility.

## STEMLAND SESSION AT PLASKSHA SCHOOL



STEM Land was invited by Plaksha School for a three-day learning session with students. The school focuses on holistic development and creativity in education, aligning with many of the learning approaches practiced in Auroville. This visit marks the fourth school outreach by the STEM Land team in the past six months.

During the session, students participated in a variety of activities including electronics, visual mathematics, robotics, and leadership exercises. The sessions began with activities that helped students reflect on their values, followed by practical explorations such as understanding electricity consumption and calculating electricity bills. Visual analogies and hands-on demonstrations helped clarify electrical concepts and made learning more meaningful.



The team also conducted interactive mathematics sessions using materials like Dienes blocks, fraction kits, and the Polypad platform to help students visualize mathematical ideas. On the final day, students explored robotics by programming robots with sensors to follow a mapped path. The session concluded with reflections from the students, who shared their experiences and what they had learned through the activities.

## SANFORT INTERNATIONAL SCHOOL STUDENTS VISIT STEMLAND

Every week, around 25 students from Sanfort International School visit STEM Land to explore hands-on STEM activities. The school is part of the Sanvi Educational and Charitable Trust, which supports marginalized communities, including differently abled children, the elderly, and women through education, care, and vocational training.

During a visit on April 12, students participated in engaging electronics activities facilitated by SivaSankar. To understand how a DC motor works, they used simple materials like batteries, enamel wires, and magnets. Working in small groups, they experimented and

successfully created a working motor, giving them a strong sense of accomplishment.

In another activity, students built an electromagnet using electric current and connected the concept to the DC motor they had created earlier. These hands-on experiences sparked curiosity, with students asking questions about how devices work and where to find such materials, inspiring both boys and girls to explore and experiment.



## BHISHMA HUNT PROGRAM

STEM Land was invited to conduct robotics and critical thinking activities at the Bhisma Hunt program organized by Sanvi Educational and Charitable Trust at Sanvi International School. The program aims to help children discover their potential and use their abilities for the greater good, inspired by Bhisma from the Mahabharata.

The STEM Land team, along with Shifuians and B.Voc interns from AIAT, facilitated sessions on robotics and critical thinking. Students explored different robots and learned to control them using block-based programming, using trial and error to program sensors for specific tasks, which strengthened their problem-solving skills.



They also engaged in critical thinking activities like tangrams, matchstick puzzles, and logic challenges. After learning the methods, students attempted similar puzzles independently, building their reasoning, confidence, and collaboration while enjoying the learning process.



### PRESENTING AT THE EARCOME 9 CONFERENCE

Poovizhi and Sanjeev Ranganathan traveled to South Korea to present their research paper titled “Shift in Teachers’ Perspectives in Mathematics Based on Interventions on Indian Knowledge Systems and Distinctions Between Empirical and Formal Mathematics” at the East Asia Regional Conference on Mathematics Education (EARCOME 9).



The research explored how many mathematical ideas originated in India but became more abstract over time due to translation and historical influences. Their work highlights how traditional approaches to mathematics connected to observation, language, and real-life applications can help students understand concepts more naturally and reduce math anxiety.

The presentation also shared experiences from classrooms in Auroville, showing how teaching mathematics through traditional methods and native languages can make learning more meaningful. The initiative aims to inspire wider interest in heritage-based mathematics education and encourage teacher training and curriculum integration in the future.

### SUMMER STEAM WORKSHOPS

C3STREAM Land conducted three five-day STEAM workshops at the Auroville Institute of Applied Technology for around 30 participants aged 13+. The sessions focused on hands-on learning through activities in 3D printing, electronics, robotics, and drones, making technology engaging and accessible. Participants designed models using Tinkercad, worked with circuits and soldering, and programmed robots using block-based coding.



Each day also began with sessions on Radical Transformational Leadership (RTL), helping participants reflect on their values and how they can use technology responsibly. The workshops aimed not only to build technical skills but also to encourage curiosity, creativity, and self-awareness. Through these experiences, participants gained confidence in exploring technology and applying their learning to real-world challenges.



### SCIENCE INTEGRAL WORKSHOP



Participants from C3STREAM Land attended a Science–Integral Workshop at the Sri Aurobindo Ashram Delhi Branch, where they explored holistic approaches to teaching science. The workshop combined hands-on experiments with reflective practices like yoga, meditation, and group discussions, creating a balanced learning environment.



Through sessions on topics such as force, electricity, and the solar system, participants discovered creative, activity-based ways to make science engaging and meaningful. The experience emphasized integral education—nurturing the physical, mental, vital, and inner aspects of both teachers and learners.

Overall, the workshop inspired educators to move beyond rote teaching and become facilitators who ignite curiosity, creativity, and deeper learning in students.

### **VISIT BY CHEVALIER SELLANE GOVERNMENT HIGHER SECONDARY SCHOOL**

On September 29, 2025, students from Chevalier Sellane Government Higher Secondary School visited STEM Land for an interactive learning experience. The session began with discussions on students' aspirations, values, and the choices they make in life, helping them reflect on their goals and how they can overcome fears by connecting with universal values.

Students then visited different technical teams where they learned how technology is applied in real-world projects. Teams explained their work in areas such as testing, embedded software, chip layout, verification, and design automation. Through simple examples and discussions, students understood how engineers design, test, and verify products before they are used in the real world.



After exploring the technical teams, students participated in activities at STEM Land. They explored mathematics through games and materials, worked with robots and drones, and experimented with programming using

Scratch and Makey Makey.

The visit encouraged curiosity and hands-on learning, helping students see how teamwork, creativity, and problem-solving play an important role in technology.

### **STEM LAND'S 10TH BIRTHDAY CELEBRATION**



On October 9th, we celebrated the 10th anniversary of STEM Land with a vibrant event filled with learning and creativity.

The celebration included stalls on electronics, visual mathematics, STEM games, puzzles, crafts, and Indian Knowledge Systems (IKS), organized by team members and students from partner schools. Children enthusiastically explored hands-on activities in programming, mathematics, and problem-solving, making the event lively and engaging. The celebration began with the morning gathering where Anitha Ma'am offered songs, and students from Isai School presented songs and a tabla performance, adding joy to the occasion. Many students also conducted their own stalls, explaining projects and guiding visitors through activities. Children explored circuits using simple components, created designs, tried crafts like kirigami, and interacted with different STEM activities.



The event was a collaborative effort where team members and students worked together to set up stalls, support participants, and ensure everything ran smoothly. It provided an opportunity for children to share their learning, build confidence, and experience the joy of teaching others. The celebration highlighted how hands-on activities, teamwork, and creativity can make learning meaningful and inspiring.

## VISIT BY AURO MIRA VIDYA MANDIR STUDENTS



Students from Auro Mira Vidya Mandir visited STEM Land on October 9, 2025, for an interactive learning session. Around 10 - 12-year-old students participated along with their teachers. The session began with activities facilitated by Sanjeev Ranganathan and Poovizhi using RTL tools that encouraged students to reflect on their values and fears. After the activity, students explored different games, crafts, and hands-on learning materials available at STEM Land. They showed great curiosity and enthusiasm while trying out the activities and solving challenges together. The environment encouraged both learning and play, allowing students to engage with concepts in an enjoyable way.



The visit was also meaningful for the facilitators, who reflected on how supporting children helped them learn new ways of guiding and connecting with students. The experience showed that when children are given the space to explore, share, and reflect, they naturally bring curiosity, openness, and a joy for learning.

## JOYFUL LEARNING OF NUMBERS AT THAMARAI AFTER-SCHOOL

At Thamarai after-school, we supported children in learning basic mathematical operations such as bundling, unbundling, and multiplication through hands-on activities. Instead of only solving problems on paper, we used learning materials like Dienes blocks, Ganit racks, and colours to help children visualize numbers and understand mathematical concepts more clearly.



Children explored place value using Dienes blocks, where they represented numbers like 162 with hundreds, tens, and ones. This hands-on approach helped them clearly understand number structure. Using colours to represent place values made the learning more engaging and creative. With the Ganit rack, students practiced bundling and unbundling, explored doubles, and strengthened their mental math skills. They also learned multiplication by forming groups and building rectangles with blocks, connecting it to the concept of area. Overall, the session made mathematics joyful and meaningful through hands-on learning. It ended with students sharing their understanding and expressing gratitude through thoughtful handmade gifts.

## ASTROLABE WORKSHOP FOR TEACHERS

On November 7- 8, an Astrolabe Workshop was held at the SAIER Conference Hall for teachers from schools around Auroville. The workshop was facilitated by Sudheer Vaishampayan, Ravindra Godbole, and Satish Choudhari. The aim was to build and use a Hindu astrolabe and explore the connection between India's traditional knowledge, science, and mathematics, while learning ways to bring heritage-based science into classrooms.

Participants learned about astronomy, the study of the Sun, Moon, stars, and other celestial bodies and how their movements influence seasons and natural cycles. The workshop also introduced the Panchang, which tracks time and festivals based on the positions of the Sun and Moon.

