STEM Land Newsletter

Volume – 7, June '19 – September '19

About STEM (Science Technology Engineering Mathematics) land

STEM Land is currently located in two outreach (Isai Ambalam and Udavi) schools of Auroville. Children come to STEM Land for their Mathematics, EVS, and Science classes. They learn Mathematics, Electronics, 3D-Printing, Programming, Mindstorms (Robotics), strategic games.

The children take responsibility for their learning and plan their goals. They work individually, in pairs or peer groups and ask for support from facilitators when they need it. This self-directed learning is based on Sri Aurobindo's first True principle of education (Aurobindo, 1910); "Nothing can be taught". With younger children, we work on real-life projects that impact their surroundings. We believe a nurturing environment can support a child's learning

STEM Land in Aikiyam

Pratap and Murali started supporting Saravanan in initiating a STEM Center in Aikiyam School.

Growth of the team and new engagements

This has been an exciting four months at STEM land. Our team of youth supported through our partners has doubled. This came with a n engagement with Quilt.AI (https://quilt.ai/) A Singapore based AI company currently supports the 5 members of a technical AI(Artificial Intelligence) team who work on analysis and analytics of web data as well as 4 members of the content team who are working on analysis and content for Quilt. This has also supported STEM land expand and create an English program other than the Mathematics and EVS/Science support we provide to schools. We are currently a team of 18 Engineering and Arts Professionals. Our projects with partners range from embedded software in Python, Analog VLSI layout, Artificial Intelligence and analytics.

(Left to right) Murali, Thamizhselvi, Anupama, Prabha, Vimal, Bhuvana, Sanjeev, Sriman, Pratap, Ranjith, Arun, Sandhya, Sivaraman, Poovizhi, Abilash, Sundranandhan, Vasanth, Saranya, rushikesh (Naveen and Logeshwari are not in this picture).

We organized a teacher training program over the summer for organizations that were interested in setting STEM land at those locations or learn programming with children among them were Abilash, Jagdeeshwari, Saravanan, Savitri, Vimal, who are setting up STEM land at AV schools, Tamarai, Aikiyam School and AIAT. Also a paper based on the workshop "Conscious teacher training supporting inner development along with developing skills and competencies" has been accepted at epiSTEME8 that we will present at Homi Baba Center of Science Education in January.

STEM Land New Location Inauguration 2019.

STEM land was offered a new space in Udavi. All of us were busy setting up STEM Land for a couple of weeks. Especially, Saranya who took the lead for setting up the place. Now we have a bigger space and have a separate. This was handled by professionals and organizing the space was up to us. Saranya made a 3D model of the space and was materials should come. Everything was planned before the move, we needed no afterthoughts.

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STEM Land in Thamarai

There were around 20 kids from 6th std above. Thamarai facilitators said that they wanted to teach mathematics using materials. To start with basics we used Dienes block to visualize the arithmetic operations. Children learnt about cube, rod and plate. I wrote the numbers and the operator on the board and asked children to find the answer using Dienes block. Children were split into four teams and worked as a team. Facilitators also learnt along with the children. Through this, children got clarity of how carry over works and why do we carry over and borrow.

STEM Land Projects at Auroville Schools

As most of the students were new to electronics, they were asked to build a simple battery holder (Aravind Gupta Toys) and to measure the voltage from the battery using the multimeter. They were given different batteries and were asked to measure the voltage by keeping them in series. They were able to notice the change in voltages in different batteries and enjoyed the process. The students helped each other by sharing their knowledge with their younger buddies and we were able to see the Peer Learning build up. At the end of the day, they were able to learn about voltage, LED, copper, multimeters.

Sri Aurobindo birthday and Independence Day celebration run

As India marked its 73rd Independence Day, Children's of Isaiambalam school celebrated Independence Day with flag hoisting and cultural events. We started our day at 5:00 am with bonfire and meditation for an hour in amphitheater Matrimandir Auroville. Later, we had started our marathon. Our Whole team and teachers helped to organize this event. Students started their marathon from Auroville Matrimandir across the Auroville communities and villages and reached school. Our Principle Dr.Sanjeev and teachers followed them and encouraged to finish the marathon
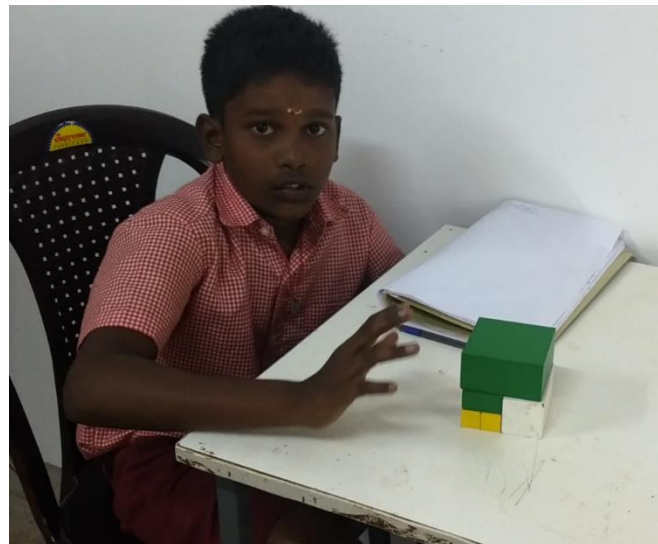

Javascript course

We had an intense course offered at STEM land by Umang Doctor who has over 18 years of experience in software development and digital technologies. Ten people participated in the course and we learned and Practical experience of responsive website development primarily using JavaScript.The course included: HTML 5, CSS 3, ES6, Bootstrap 4, JavaScript basics, Data structures using JavaScript, JavaScript modules, OOPS, Debugging using Chrome

What's Up Integers

With the many STEM lands coming up we felt that Thematic Weeks across schools could be interesting for children to learn from each other across schools. We have started to learn and discover the different ways of how Integers can be looked at. Children can come up with projects, stories, modules explaining the same with a short 3 to 4mins This event starts on the 20/08/2019 and comes to close 31/08/2019. Both schools should interchange videos among them.

Automatic street light using LDR

While preparing the electronics class, we took "Automatic street light using LDR" as the circuit, where "LED" turns ON in dark and turns OFF in bright place automatically. After giving the circuit connection, the LED didn't turn OFF when it was bright. So we started analyzing the circuit, then we found out that, the R1 resistor was low when compared to the resistance of the LDR under the brightness.

Internship at STEMLand

Three students from college came to STEM land for intern-ship for two weeks to learn Scratch programming. We have asked them to create some projects from scratch. They created some video projects on addition, fraction, number line, multiplication, representing and arranging ascending order and descending order with squares. People from STEM land took Stewardship for new emergence for them. They took a few tools from that session for them. For examples stand, fear, deep listening, and background conversation, four profile and Conscious Full-spectrum Response

Inspiration-program

We are working in collaboration with Ramakrishna Mission on a personality development program (part of Human Excellence). Swami Krishnan Maharaj from Ramakrishna mission in Chengalpattu helped set up the program that we call Inspiration at Isaiamblam school. The program is across verticals with groups that include some teachers, volunteers and children from 6th to 8th grades in each group. We discussed the inspiration and how it feels when we get inspired. Then we learned about value-added education where we need to add value throughout our life. Then we split up into 6 teams and got a topic for each team. The team was mixed with teachers, STEM land volunteers, and children.

2017-2018 batch children's reflection on STEM land

2017 – 2018 batch children from Udavi had a get-together. We've planned to meet them and have a conversation on how STEM land was useful for them and what they feel about STEM land. Children were in their summer holidays and organized a get together themselves. We all felt happy to see them back. We started the conversation by asking them "What do you remember or miss about STEM land and how is it used?"

Monthly Progress card for School Software

We created a 2nd version of the school software to make and assess the plan for children in Isai Ambalam School. Teachers were writing the monthly progress card by hand. We made this feature so that teachers can use the planning software and make the progress card. It would be useful to copy the progress card for multiple children and make

changes that would save time. It helps to keep track and view the previous month's progress card.

Atrei Visit

Atrei is a geology scientist, who is our main support in Asha Bangalore. She had visited Udavi and Isai Ambalam school STEM Land. Later she had interacted with the youths that work in STEM Land. During the interaction, the youth had come up with a few questions related to geology. There was also a Judo demonstration by the Isai Ambalam School children. Atrei has a black belt in karate.

Support A Child Program

In partnership with Asha for Education we have set up a Support a child program for Isai Ambalam School. The support of Rs.11,000/year covered some of the running expenses of the school including teacher's salaries; nutrition; activities in sports, music, swimming, and STEM land activities. Last year we successfully found support for all children at the school by the end of the schooling year. This year the strength of the school has increased to 154 and the third phase is in progress.. A positive development that we see this year is some of the parents are putting in funds to collectively support some children themselves.

Contributions towards STEM land can be directed towards : Auroville Unity Fund

With a note for STEM land and mail it to Dr. Sanjeev Ranganathan, STEM land Udavi School, Auroville, Edayanchavadi, Tamil Nadu – 605101 (All donations are 100% tax-deductible in India). **www.auraauro.com**