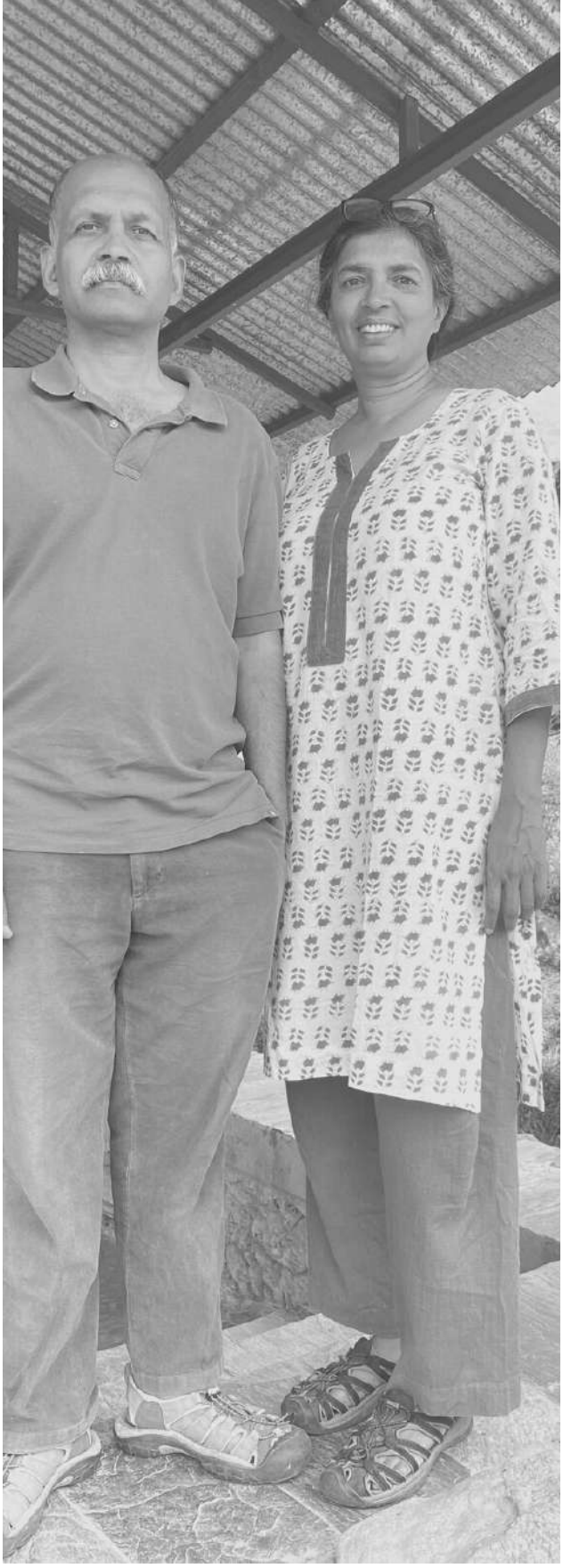
आविष्कार
Aavishkaar - Center for Science, Math, Arts and Technology

ANNUAL REPORT 2021-2022

AAVISHKAAR

CENTRE FOR SCIENCE, MATH, ART AND TECHNOLOGY

AAVISHKAAR-PALAMPUR.ORG



FOUNDERS'NOTE

I overheard one of our Aarohan. Primary Math Educator graduates reflect, “At Aavishkaar, I realized that the assessment we give is for the teacher to assess how much understanding was she able to build in students.” Yet another one expressed, “Now I want to sit as close to the teacher as possible, rather than hiding behind someone else. I really want to learn.” These are our teacher graduates who feared Math when they joined the program.

Aavishkaar started its journey with understanding the challenges in Science and Math education. It took us to students in classrooms, delve into latest research happening across the world, and take that learning to teachers. We now work with organizations and governments across the country to build an ecosystem that believes in nurturing Active Thinking Classroom of Maths and Science. Our gratitude to DIET leaders across the state of Himachal Pradesh for collaborating with us to reach out to so many government school teachers this year also.

The pandemic has drastically impacted the learning of our students. And we need all hand on deck to furiously work and fill this huge gap of learning. Through the STEM Collective of 15 grassroots organizations, we have got the unique over of training aspiring women educators in the community and in schools. The hope in the eyes of these women educators, many of whom are getting to work independently for the first time in their life makes us realize the challenge we have taken up. It is not only making our students fall in love with STEM education, but also help our women achieve their dream of financial independence. We are filled with gratitude to get this opportunity to work at this intersection STEM education and gender.

Sincerely,
Sandhya

ABOUT AAVISHKAAR

VISION

To nurture curious, creative and critical thinking citizens of tomorrow.

MISSION

Aavishkaar's mission is to enable, equip & empower educators and students to rekindle their creativity, curiosity and critical thinking in Science and Math.

IMPACT

We endeavor to make Science and Math experiential, hands-on/minds-on, engaging, immersive and accessible to all. Aavishkaar has reached out to more than 25,000 students and teachers in India through it's Math and Science trainings, camps and fairs. While the organization works with all learning groups, our main focus has been on working with teachers to reach to our under-represented communities, especially girls and students of economically disadvantaged communities.

HIGHLIGHTS OF 2021-22

IN PARTNERSHIP WITH EMPOWER FOUNDATION, WE WERE ABLE TO SUPPORT WOMEN FROM MARGINALIZED COMMUNITIES TO BECOME EDUCATORS

CONVERTING THE SHORT-TERM ENGAGEMENT TO A YEAR-LONG PROGRAM WITH HIMACHAL PRADESH GOVT. SCHOOL TEACHERS

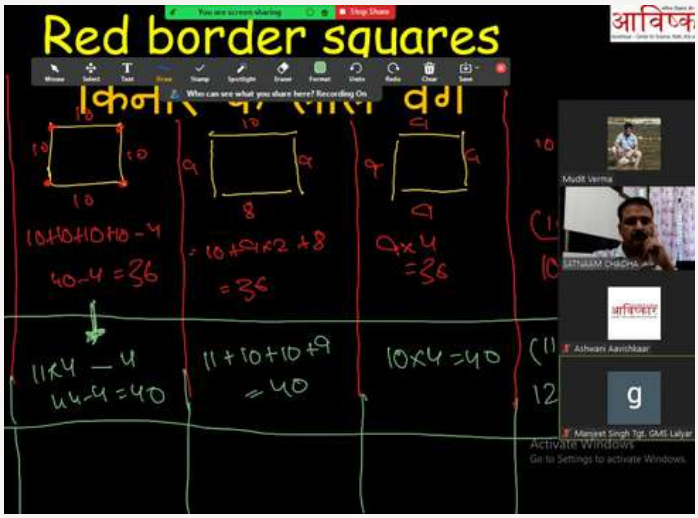

School Engagement

SUCCESSFUL GRADUATION OF FIRST COHORT OF AAROHAN MATH EDUCATOR PROGRAM


Woman Educator

RESUMING IN-PERSON ENGAGEMENT WITH STUDENTS AND TEACHERS ACROSS THE COUNTRY

COMMENCEMENT OF NEW BATCH OF AAVISHKAAR FELLOWSHIP WITH 4 YOUNG WOMEN



WE WORK WITH

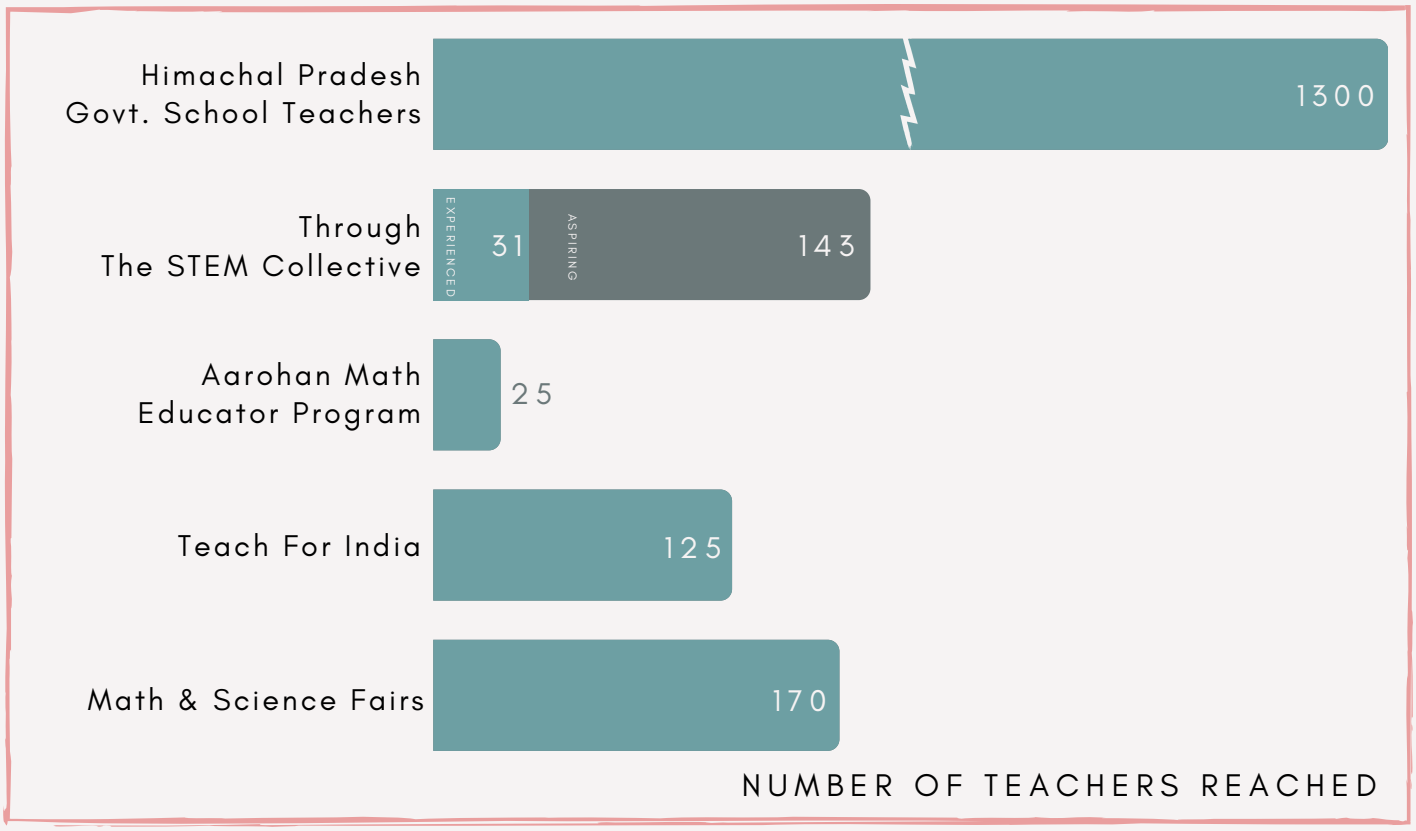
- Experienced Teachers
- Aspiring Teachers
- Students
- Adult Learners

PROGRAMS

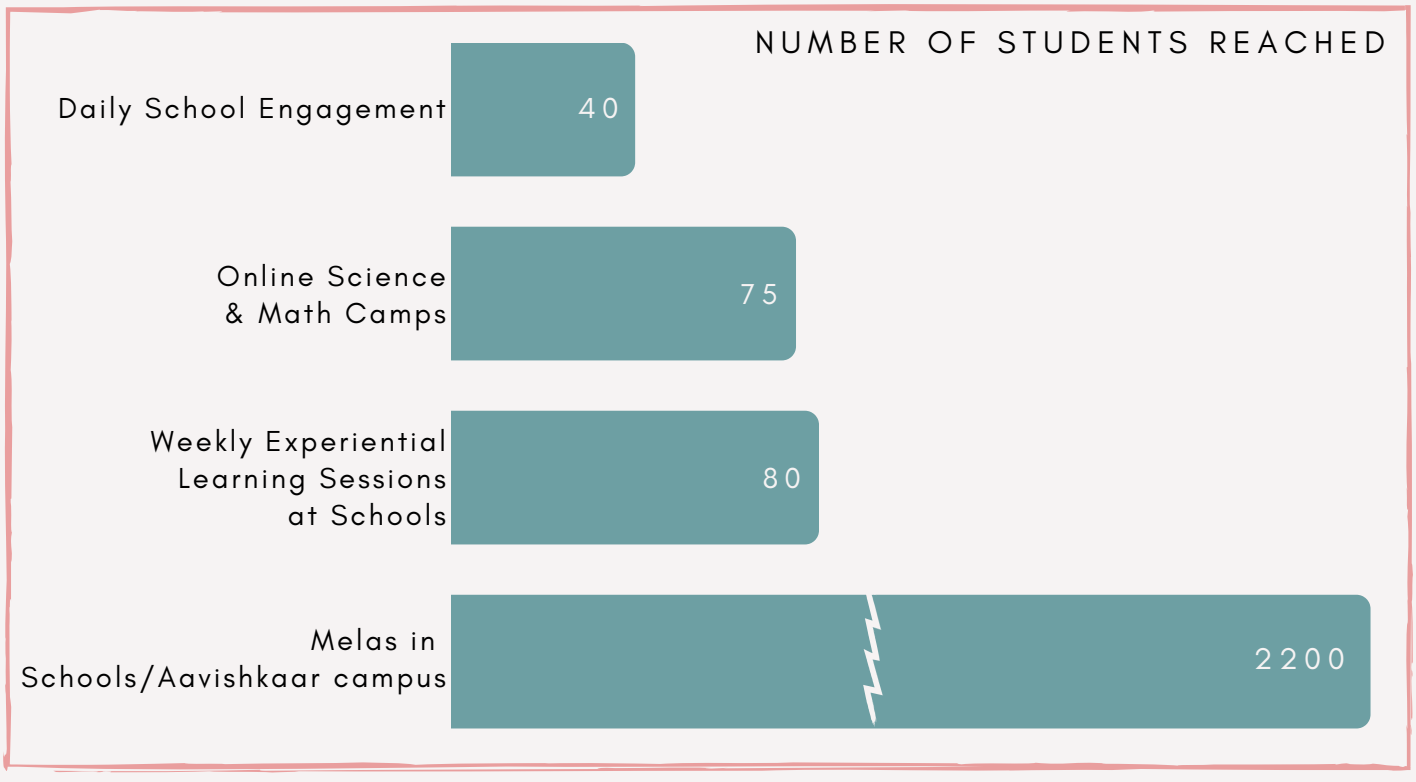
- Fellowship for passionate young leaders who want to bring change
- Year-long Teacher development & support
- Online & Residential Camps
- Experiential Learning Workshops

REACH

TEACHERS

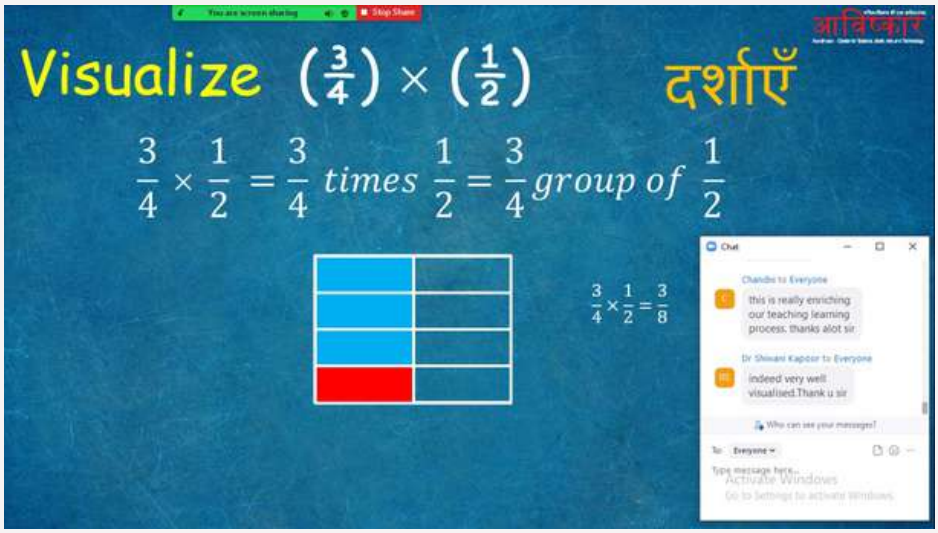


STUDENTS



DRISHTICONE

DrishtiCONE Program, funded by Wipro commenced in 2017 with the aim of strengthen math and science education in the school system of Himachal Pradesh by setting up environments for STEM.



Teacher Engagement

Our teacher engagement is a hybrid model (Online and Offline) to empower and support teachers to build mathematical & Scientific mindset through visual, contextual, relevant & engaging content.

Due to the Covid-19 lockdown, our online engagement increased and we have been able to reach a larger number of teachers (around 1200 government schools teachers). In 2021 we completed short-term workshops with teachers from 6 Districts - Solan, Kullu, Hamirpur, Kangra, Bilaspur and Una.

The short term engagement in Solan and Kullu has been converted into a year long program with 40 teachers, starting January 2022.

We have been constantly engaging with the DIETs of all the districts in order to strengthen our government relations and inturn expand our reach.

We also piloted a 3 day online workshop on "Thinking Classroom" with government school teachers from Bilaspur district to aid teachers in building a mathematical mindset. More than 100 teachers were a part of this workshop.

Student Engagement

We engage with students of government schools in Panchrukhi Block, Kangra, HP through daily and weekly engagements with the agenda of providing visual and contextual understanding of the concepts they learn in classrooms.

Daily Student Engagement

With the post-lockdown (Covid-19 second wave) reopening of schools, we have been engaging with students at primary & middle schools in Nanhar and Spedu villages. The STEM team is working on basic numeracy and geometry with these students.

During the Covid-19 third wave lockdown, since these children were again cut off from schools, the team continued visiting their communities to keep the learning on. Through these visits, we facilitated three community spaces – 1 in Nanahar and 2 in Spedu Village with 25 students across grades 1 to 5 in total.

Reflection from a team member on how her continuous engagement with the students has not only boosted their confidence in math but also in themselves -

Earlier, if I used to ask Mansi, my student anything, she used to be silent. Maybe she felt that whatever she said would be wrong. I did such activities in which everyone had to speak and used to appreciate and acknowledge her opinions. I created an atmosphere in the class which gave Mansi as much opportunity to write on the board and speak as I gave to other students. Due to this, slowly she started answering when I asked in class. Her confidence started increasing. I am looking forward to support her better in the coming year through my continuous Math engagement.

Weekly Student Engagement

With the agenda of supplementing what teachers teach, we engage weekly with the students of government middle and secondary schools through exploration tasks & experiments and connect these to their classroom learnings.

We could observe that the students were attempting to justify their approaches and logics in these hands-on & minds-on engagements.

On-Campus Engagement

SANJHI CHHAT is a mela organised by Aavishkaar Felllows for children at Aavishkaar with the purpose of bringing them to the campus and building better relationships. 60+ children have been engaging with various Math games over the course of 2 months. Following the happy response of "we want to come again" from the children, we are in the process of making this a regular event.

Capacity Building Workshop

Aavishkaar facilitated 2-day capacity building workshop on mathematics, science and environment for math and science, for educators at Bahra university, Shimla hills.

We delivered a session on "Importance of discussion, expression of thought and justification in a classroom."

Future Plans

Setting up a minimum of two maths and science melas every month in government primary and middle schools in Panchrukhi Block, Kangra, Himachal Pradesh

Year long program on basic concepts of Math and Science through visualisation and engagement with government schools teachers of all district in Himachal Pradesh.

CHIP- MUMBAI

THE STEM COLLECTIVE

The STEM (Science, Technology, Engineer, Mathematics) Collective is a one-year online teacher development & support program started in 2020. In partnership with EMpower Foundation, we are working with teachers from grassroot organization across India. The aim is to reach and provide quality education to students from marginalized communities.

ORGANZATIONS IN THE PROGRAM

CYDA Pune	CHIP Mumbai	Sahyog Mumbai
Chintan New Delhi	FAT New Delhi	JOSH New Delhi
KarmMarg New Delhi	Abhas New Delhi	Neev Gurugram
Saath Ahmedabad	IBTADA Rajasthan	GSK Rajasthan

ENGAGEMENT WITH TEACHERS-:

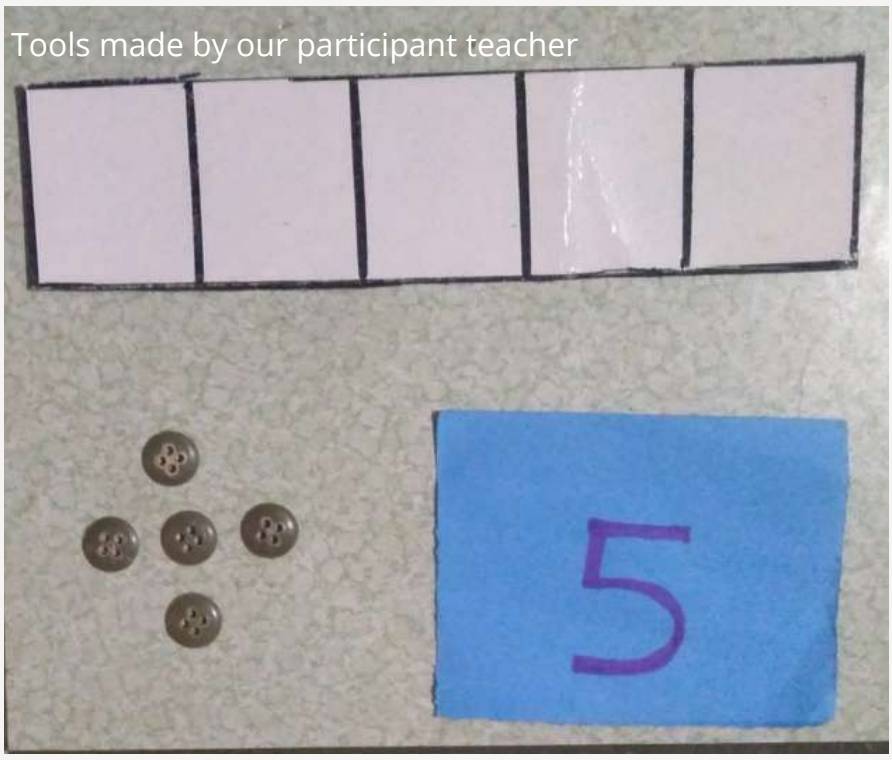
We have been working with around 200 experienced and aspiring teachers to develop knowledge, skills and mindset change with the aim to aid teachers in changing habits and improving classroom culture.

In 2021 we worked on - Primary math, Middle math, Middle science and newly introduced the Primary Science module in January 2022. Along with content, we also supported the teachers with concept maps and lesson plans to help them implement their learnings in classrooms.

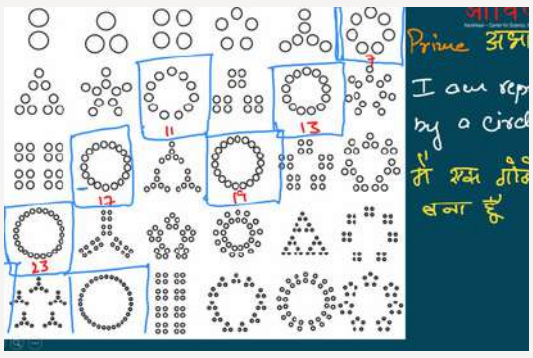
We had the privilege of visiting some partner organisations post Covid-19 lockdown. Our team members spent time with the participate teachers & their students, conversing about sessions, challenges, opportunities and much more. We visited 4 organizations - CYDA, Chintan, CHIP & JOSH.

JOSH, New Delhi

Tools made by our participant teacher



Chintan, New Delhi



ENGAGEMENT WITH STUDENTS-:

We Engage with students of the teachers we work with through online camps in order to develop student leaders of STEM who are not only curious themselves but also support the teachers in nudging peers to see the beauty in math and science.

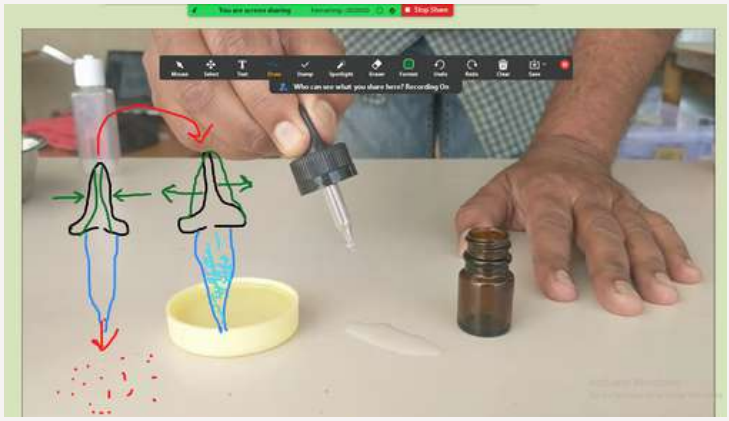
In 2021-22 we organised three online camps - Two Picycle and one Math masala.

Picycle Camps - Five-day Science & Math online camps for middle-school students.

- Science camp happened from 20th to 25th September 2021.
- Math camp happened between the 20th to 25th November 2021.

Math Masala- A Five-day Math Camp for primary-students that happened 24th to 28th January 2022.

हमें पता भी नहीं था के हवा की भी वज़न होती है| (We didn't even know that air also has weight.)
Shared a student at the Picycle Camp.



ENGAGEMENT WITH LEARNING ADULTS-:

This is a program for working adults to help them in everyday mathematics and technology. We worked on numeracy and measurement skills and computer literacy.

AAROHAN

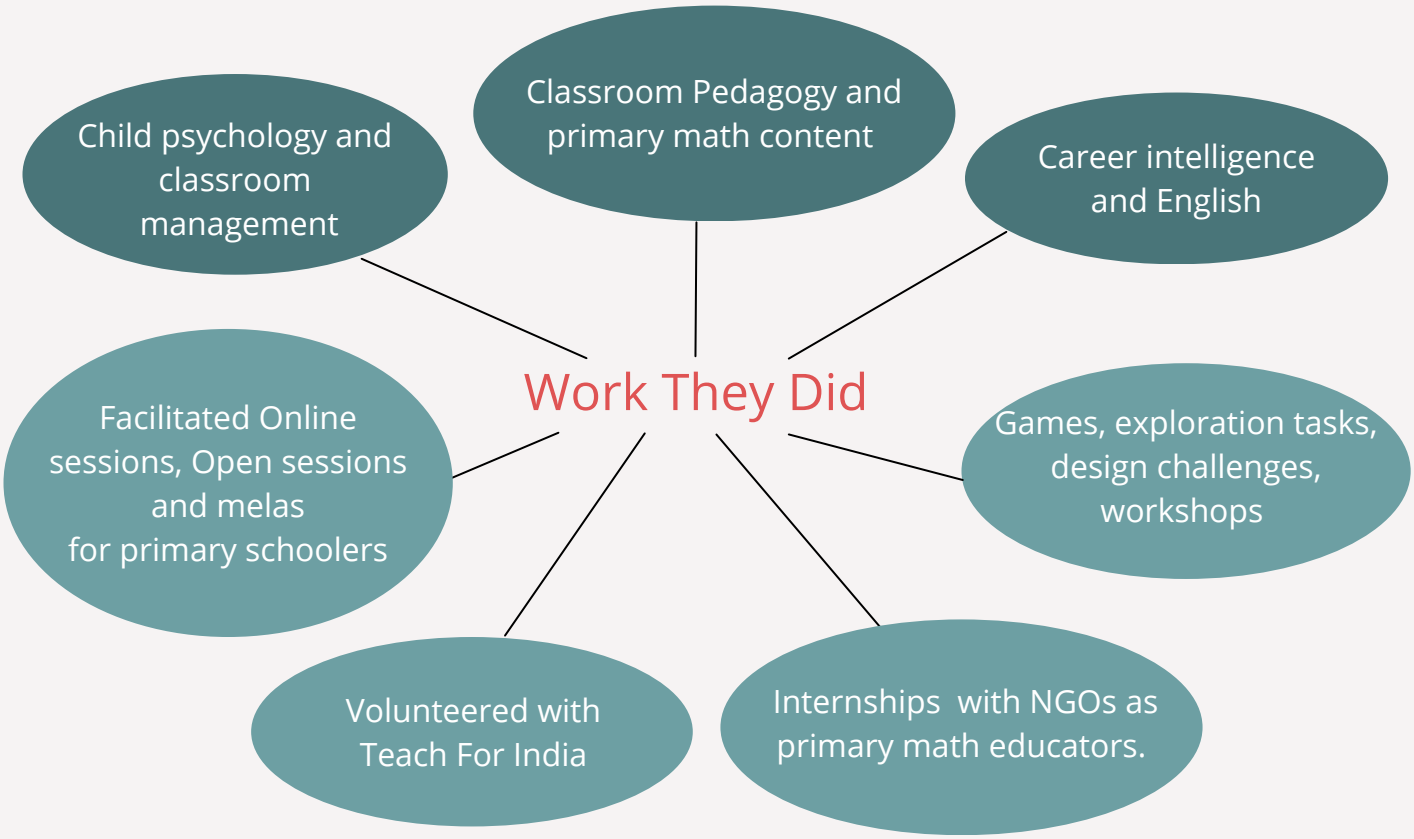
PRIMARY MATH EDUCATOR PROGRAM

Aarohan is a primary math education programme launched in 2021 in collaboration with Sajhe Sapne and Ashvattha Learning Cmmunities. The aim of the programme is to train young women from rural and underserved communities to be primary math educators and see a career in STEM by while making math a visual experience, relevant, contextual and engaging through a culture of debate, discussion and jurisdiction and to inculcate in them the spirit of seeing knowledge as a skill and a mindset.

9 Months

Young Women

Rural & Under-Represented Communities



The second batch of the programme commenced in March, 2022 with 18 young women from PAN-India.

HIGHLIGHTS

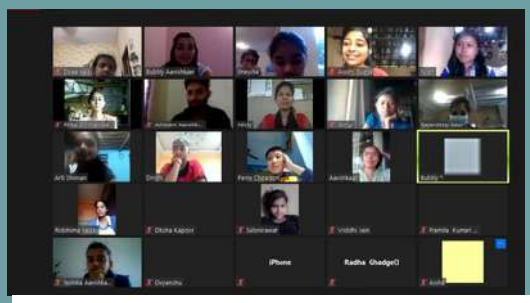
- All 7 participants from 1st cohort were placed in jobs or fellowships in educational organisations as primary math educators.
- Some of the young women we had earlier worked with, in collaboration with Nari Gunjan (an organisation which works on women empowerment in rural Bihar) joined us as participants for the program.
- During the exit interview, the young women shared about what the program meant to them and how they were able to find a direction towards being math educators.

Here are some of the things they said-

"We had created a space where there is no shame in not knowing , there is freedom to ask anyone."
- Nicky Kumari

"My patience and confidence has improved a lot since I came here . I built a good relationship with math because i started to understand it "
- Aarti Dhiman

"I was scared of math but ever since I came here my attitude towards math has changed . I learned to see math in surroundings. "
- Rajandeep Kaur



Online session taken by Aarohan Fellows

AAVISHKAAR FELLOWSHIP

The vision is to create STEM leaders who emphasise on conceptual understanding by providing they with first-hand experience of content development, direct engagement with school students and carving their own path to being empowered educators of tomorrow.

2 YEARS

GRADUATES **&** NON GRADUATES

DEVELOP **SKILLS**

SUBJECT SPECIFIC **EXPERIENCE**

CLASS ROOM **CARE**

The 2021-23 cohort of Aavishkaar fellowship commenced in November, 2021

- The fellows are currently going to government schools around Kandbari and working with primary & middle school students who have been out of the institution of school throughout the pandemic months.
- Two fellows visited Assam in December 2021 as a part of the Math Mela team. The fellows shared that they were able to identify & understand the difference in the educational systems in Assam as compared to their home states of Himachal and Bihar.
- The fellows are also working on developing friendly games for various Mathematics modules.
- They are also working as a part of the Aarohan Program by mentoring the young, aspiring women educators.

OTHER ENGAGEMENTS

SETTING UP STEM ENVIRONMENT IN ASSAM

Through partnership with the rotary club of Doomdooma, Aavishkaar visited Assam to setup environments for STEM in 5 High Schools - Girls high school, Jatiya Vidyalaya, Bangaya Vidyalaya and Barhapjan Vidyalaya, Girls high school in Doomdooma & Dibrogadh.

Our team members worked with around 2000 students and 100+ teachers by illustrating and teaching them primary-math games who then set up exhibits and game stalls for the rest of the school.

The teacher said that they could see their students being able to understand better.
Students who set up the fairs shared their accomplishment of not just understanding math but also being able to explain it to others.

"बच्चे सवाल पूछ पा रहे हैं और इनका वेसिक नॉलेज ठीक हो रहा है उसके लिए ऐसे मेले होना जरुरी है।"
Children are able to ask questions and their basic knowledge is getting better, for that it is necessary to have such fairs.

OTHER ENGAGEMENTS

TEACH FOR INDIA

In-Person Workshop with Hyderabad Fellow

We conducted sessions on Primary Math and Middle Science with emphasis on visualizing math problems, building insightful questions and inquiry with 25 TFI fellows in Hyderabad from 10th-12th December, 2021.

We also touched upon the build, draw and write method of understanding mathematics.

The TFI Fellows have been able to make their classroom visual and experiential, and have report high level of student engagement.

Online Workshop with New Delhi Fellow

We trained First Year Fellows on developing mathematical mindset in students and the teacher actions & facilitation that promote it, from 12th to 28th February, 2022.

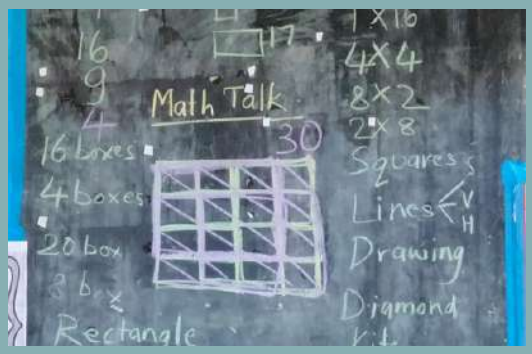
Online Workshop across all Cities

We conducted a 3-month program for 50 fellows and 25 Program Managers of TFI from Feb-April, 2022.

We ran 3 tracks -

- 2 for Middle & Primary-School Fellows - How to make math visual, contextual, relevant and engaging for students?

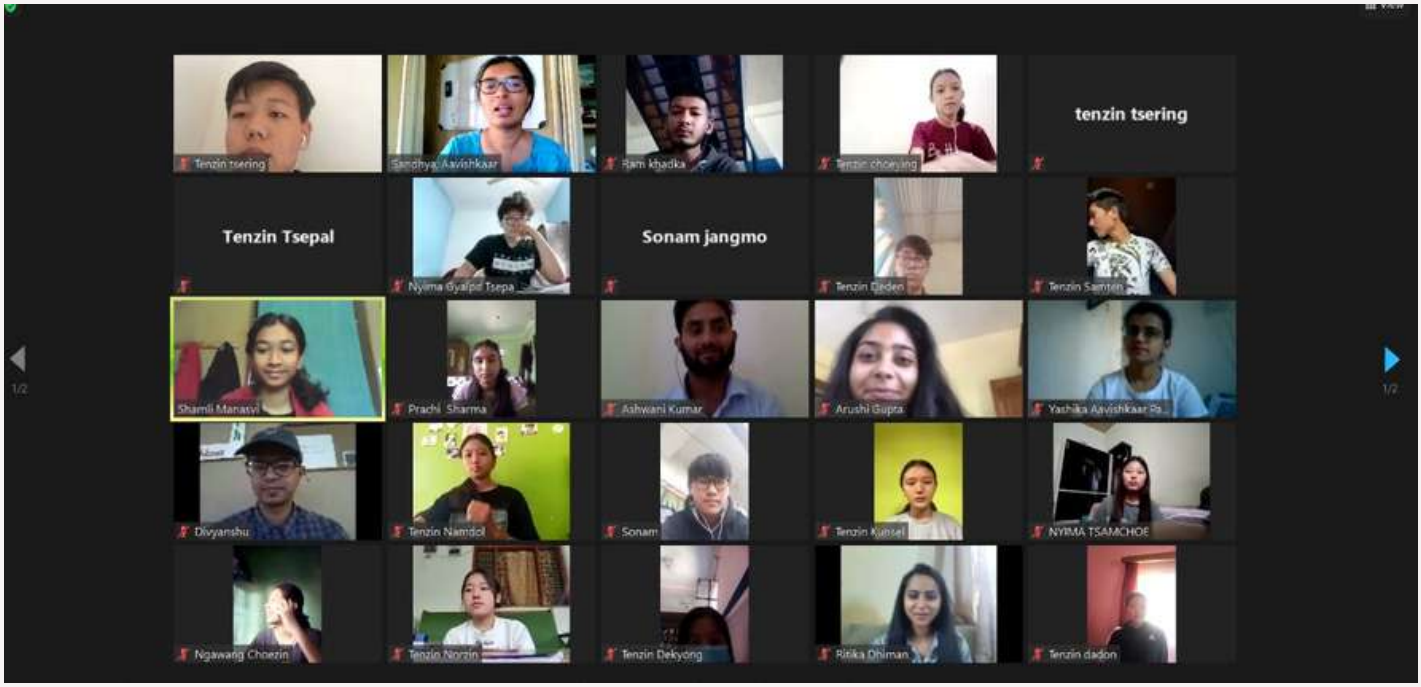
- 1 Thinking Classroom - Preparing Program Managers to support fellows in creating mathematical classrooms.



Ganit charcha & 100-Chart conducted by TFI Fellow in classroom.

OTHER ENGAGEMENTS

TIBETAN ADMINISTRATION



In partnership with Social And Resource Development Fund of Central Tibetan Administration, we engaged with students and teachers in the months of May and June, 2021. This is the third year of this partnership which has now expanded to Tibetan schools nationwide.

We conducted trainings on Primary Math and Middle Science and Math for 75 Government School Teachers from across the country of Tibet.

We also conducted 4 Math & Science Camps for 100 primary, middle and high schoolers across the country.

> The students see it now - they will be playing in the ground and they see the tiles and say that they can see math there.
>
> - Mrunmayee TFI Fellow

> My mindset has changed and now I look at different possibilities, How I operate in classroom, how can I increase student leadership, how to show my students that math can be fun also.
>
> - Tanya TFI Fellow

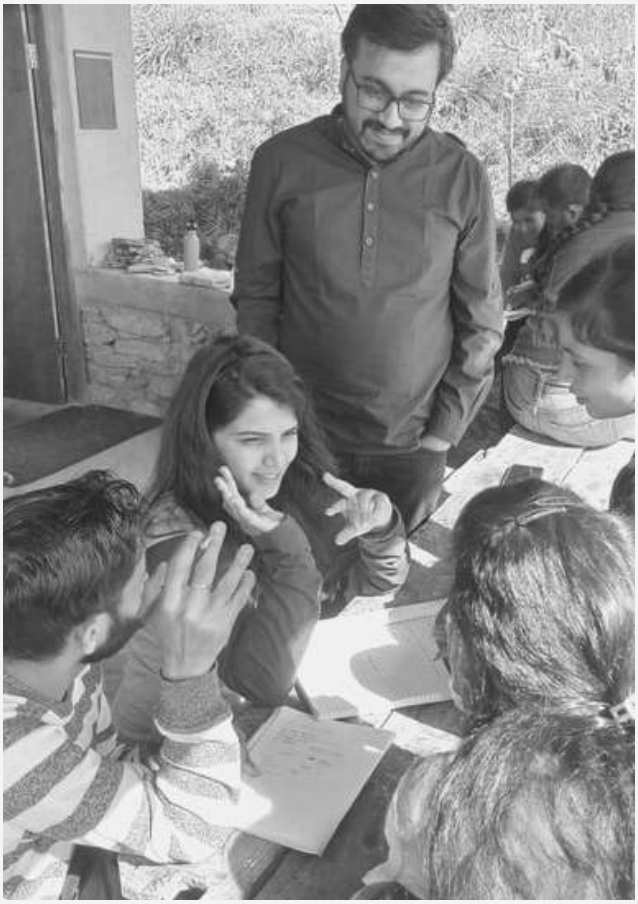
CAPACITY BUILDING

Instructional Design Course
I AM A TEACHER
By WIPRO

Sessions on Classroom Pedagogy
INSTITUTE
By Teach For India

STEM FELLOWHIP
By FAT
Feminist Approach to Technlogy

ORGANIZATIONAL DEVELOPMENT PROGRAM
By WIPRO



GAINING STRATEGIC CLARITY
By BNDP

FUTURE PLANNING FOR ORGANIZATIONS
By Aritra & IIM Bangalore

TEACH COACH DEVELOPMENT PROGRAM
By FIRKI

EXPLORING A COMMUNITIES OF PRACTICE GROUP
By WIPRO

THINKING ABOUT EDUCATION
By Digantar

MONITORING & EVALUATION

92% participants felt the sessions were easy to understand

90% participants felt the sessions were fun & interesting

89% participants felt the sessions were useful

"This training should be mandatory to every teacher from this platform.

हमे बच्चों में इकाई,दहाई,सैकड़ा की समझ को कैसे पक्का करना है। अच्छी तरह से बताया गया।

बच्चे कहते हैं कि हम यहां सीखते हैं लेकिन स्कूल में वे हमें पढ़ाते हैं|

आपके समझने का तरीका बच्चों के लिए बहुत उपयोगी है।

The videos helped us to build more understanding of how we can use these kinds of resources in the classroom.

यहां आकर गणित से एक अच्छा रिश्ता बना लिया है|"

GOALS REACHED

2021-22

Reached 200 students of communities in need through online STEM camps

Worked with more than 2000 primary, middle and senior secondary teachers

Yearlong training with 40 govt. school teachers started

Worked with more than 100 women aspiring to become STEM educators

2022-23

FUTURE GOALS

Long term engagement with 500 govt and community teachers

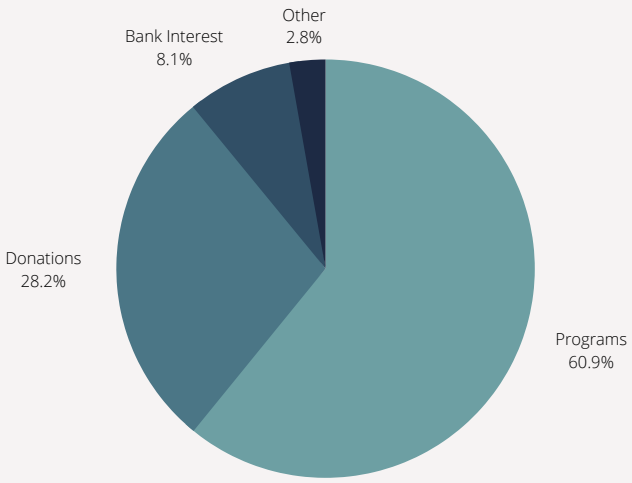
Have 25 young women graduate from Aarohan - Math Educator Program

Partner with 5 grassroots organizations to set up environment for STEM

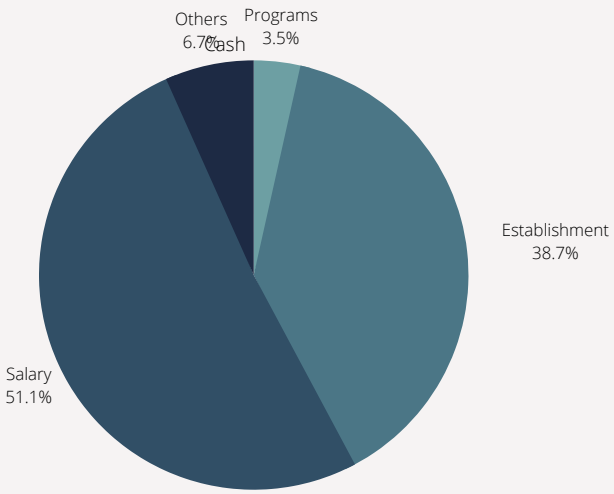
Reach 300 students through Math & Science Camps

FINANCIAL SNAPSHOT

Income



Expense



INCOME		2021-22
PGM	Programs	4,177,503
DTN	Grants, Donations	1,935,576
BKI	Bank Interest	558,870
OTH	Others	191,361
	Program Income	**6,863,310**
COR	Corpus Donation	1,725,000
	Total Income	**8,588,310**
BKX	Non Income Txn	17,864,785
BFD	Investment Redeem	12,300,000
	Cash Income	-
	Bank Credits	**38,753,095**

EXPENSES		2021-22
PGM	Programs	200,612
EST	Establishment	2,220,097
SAL	Salaries	2,933,315
OTH	Others	384,051
	Program Expenses	**5,738,074**
CAP	Capital Expense	12,840,501
	Total Expenses	**18,578,575**
BKX	Non Expense Txn	17,864,785
BFD	Investment Made	5,300,000
ADV	Cash Advance	390,000
	Cash Expense	420,735
	Bank Debits	**41,712,625**
	Excess Income	1,125,236
	Surplus Cumulative + Corpu	(11,115,501)

PARTNERS

wipro

सत्यमेव जयते
हिमाचल प्रदेश सरकार

TEACHFORINDIA

SOCIAL AND RESOURCE DEVELOPMENT FUND

ASAADHARAN FOUNDATION

INDIA FELLOW

ASHVATTHA
LEARNING COMMUNITIES

साझे सपने

EMpower
Empowering young people, creating brighter futures.

chintan
environmental research and action group

CHIP

NeeV - a learning centre

Josh

Gramin Shiksha Kendra

KARM MARG
CHARITABLE SOCIETY

Ibtada the beginning
शुरूआत ...इब्तिदा

FAT
Feminist Approach to Technology

SAATH
Creating Inclusive Societies

Gyanada
Foundation

CYDA
The Pulse of YOUNG India

SAHYOG
women. change. communities.