



# Annual Report 2018-19

## आविष्कार Aavishkaar

CENTRE FOR SCIENCE, MATH, ARTS AND TECHNOLOGY

Kandbari, Palampur, Himachal


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## Founder's Note

Recently, one of our fellows described a heated discussion of two Aavishkaar members on how to create a relatable story and visualize the concept of Ratio and Proportion for students in their lesson plan late into the night. We joked about it and teased them. In our hearts, we were beaming with pride - the Aavishkaar bug had bitten them. At Aavishkaar, it's easy to find people discussing concepts, trying to visualize them, arguing over a concept and poking holes in each other's arguments with the aim of strengthening it. You will find them coloring grid for a fraction talk or making holes in water bottles to explain water pressure or some other concept. Simplifying a concept by making it visual and experiential has become a second nature to the team. And all this is getting implemented in the schools we work with. The students who never spoke up in class, now have an opinion they want to express. They have a question they want to ask.

Yes, we understand that math is an abstraction, but making concepts visual helps everybody. We are able to take every student together in the class. What is science without experiencing it in the world around us. We don't need a rocket launch to explain the third law of motion, if we can get everyone to understand how we walk on a earth, that's more relatable and we all have experienced it.

Aavishkaar is continuously striving to create this change in math and science education through student engagement and teacher support. Aavishkaar Fellows and staff have been able to sow the seed of this mindset shift in their students through the yearlong engagement and student camps.


Our yearlong teacher support program across the country has a similar aim in creating a shift in teacher mindset. And several teachers have shown the evidence of this change through their questions, comments, photographs and classroom videos. Our yearlong teacher support program reached out to more than 150 science and math teachers this past year.

It has been a great year for Aavishkaar. What started as a program to create a joyful learning of math and science, and a program to remove the fear of these topics, is becoming a movement with so many teachers joining in. Together we dream of a movement across the country to nurture curious, creative and critical thinking citizens of tomorrow.

Sarit & Sandhya




# OUR STORY



Access to quality education is the key to progress of any society. Aavishkaar was founded to address the problem of quality education in India. The founders, Sandhya and Sarit, worked as parent-support to the government school in which their daughter was admitted. Through that journey of teaching and learning themselves they found the idea of Aavishkaar driving them. Looking for better ways to teach led them to in-depth research of various Math and Science concepts and the reach of their well-researched methods of teaching could now be expanded. Now, Aavishkaar is a centre where motivated teachers find a platform to explore the topics they had studied long ago in school, unlearn their rote learnings and relearn a creative, curious and critical thinking approach to education.

Through years of experience volunteering in local schools in their village, the Aavishkaar team started to understand the underlying problems of the education system in India. Our students struggle to understand the fundamentals and shy away from science and math. Our students don't really understand the concepts and cannot make connection to what is taught in school to the world around. The problem magnifies in our rural and poor communities. There is absolutely zero free-thinking space available to the child, and hence no scientific rigor. If we don't nurture our young minds to boost their curiosity, there will be a shortage of rational thinkers, innovators and solution seekers including scientists, engineers and technologists in our society.



# VISION

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

Curiosity: We love how all children have a strong sense of wonder to know the world around. But somehow, it fades with the passing of time. We want them to be curious for life!

Creativity: The sense of wonder often leads to the creation of new ideas. We want students to never stop exploring and make mistakes only to learn from them.

Critical thinking: Asking questions is perhaps the single most important thing that we can teach our young ones. They should be observant and justify opinions with evidence.

# MISSION

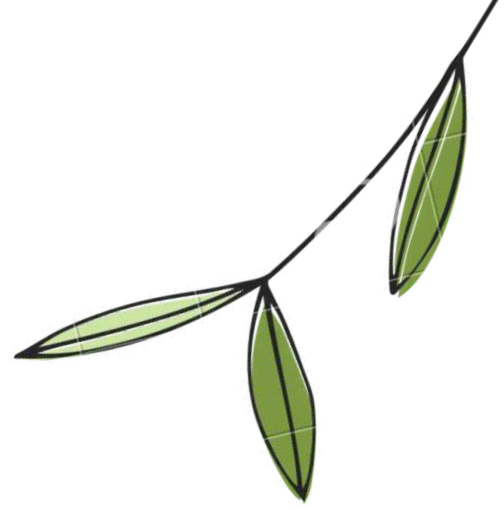
**To nurture curious, creative and critical thinking citizens of tomorrow using math and science.**

The aim is to make science and math interesting, exciting, fun and accessible for all, while developing thinking abilities through logic and reason. We encourage conceptual understanding through hands-on experience using models, experiments and projects. The goal is to make learning a joyful experience for our school community and to spread the culture of scientific investigation as far and wide as possible.

# OUR WAY TO GET THERE

What does Aavishkaar do?

Aavishkaar engages with students and teachers through experiments, demonstrations, design challenges, and many experiential and hands-on activities with the aim to create a culture of scientific inquiry. Special attention is paid to making the content hands-on with models, experiments and materials that are local and low-cost while making everyday life connections. This ensures that the development of an attitude in science and math is not hindered by materialistic barriers. The classroom experience is made interesting and exciting with content that shows relevance, context and history bringing out the big picture in the concepts (and small details too!). We do all of this with students and teachers through our residential camps, science and math fairs, teacher training and many engaging school interventions.

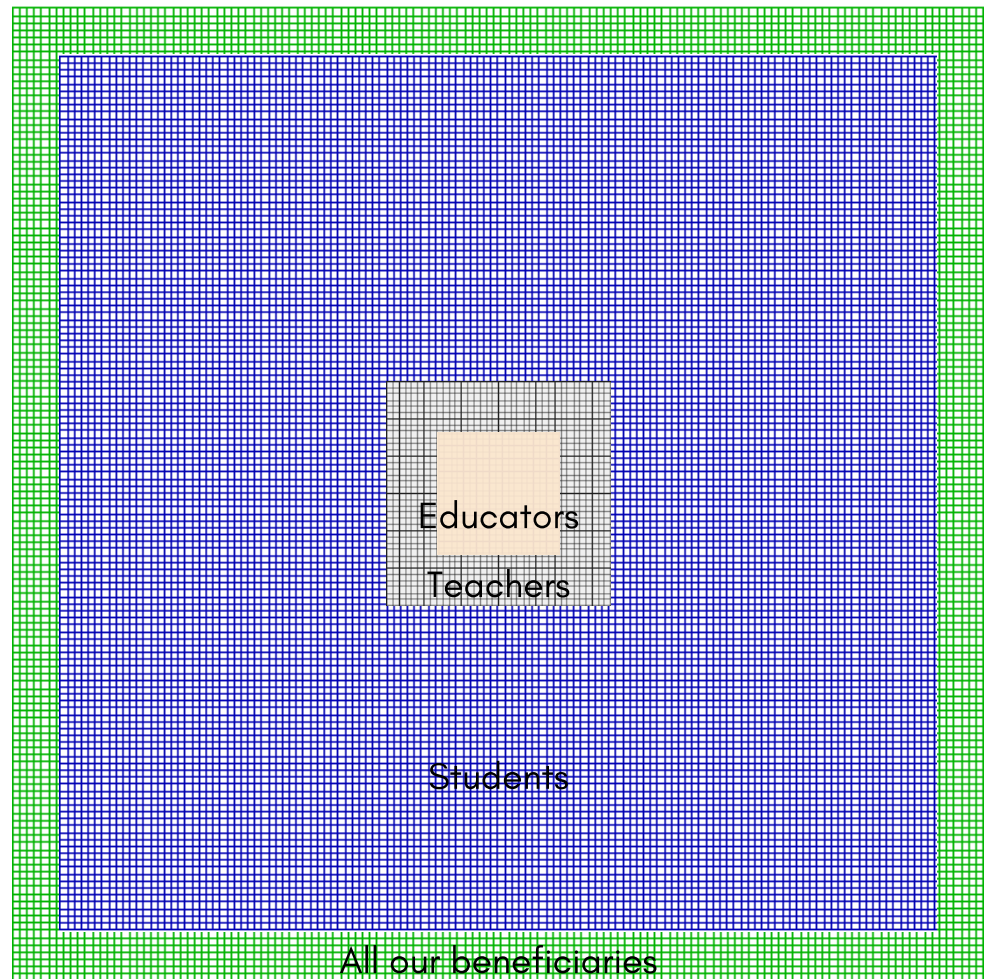
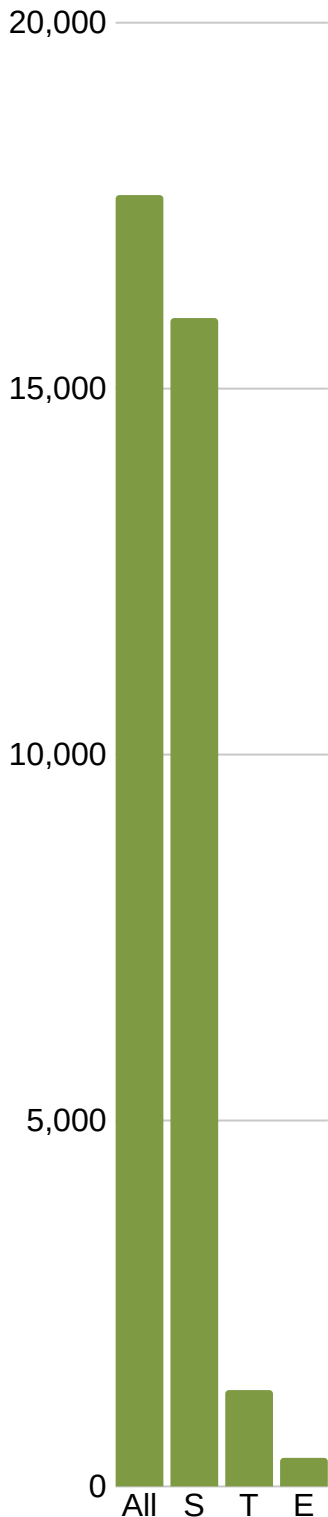




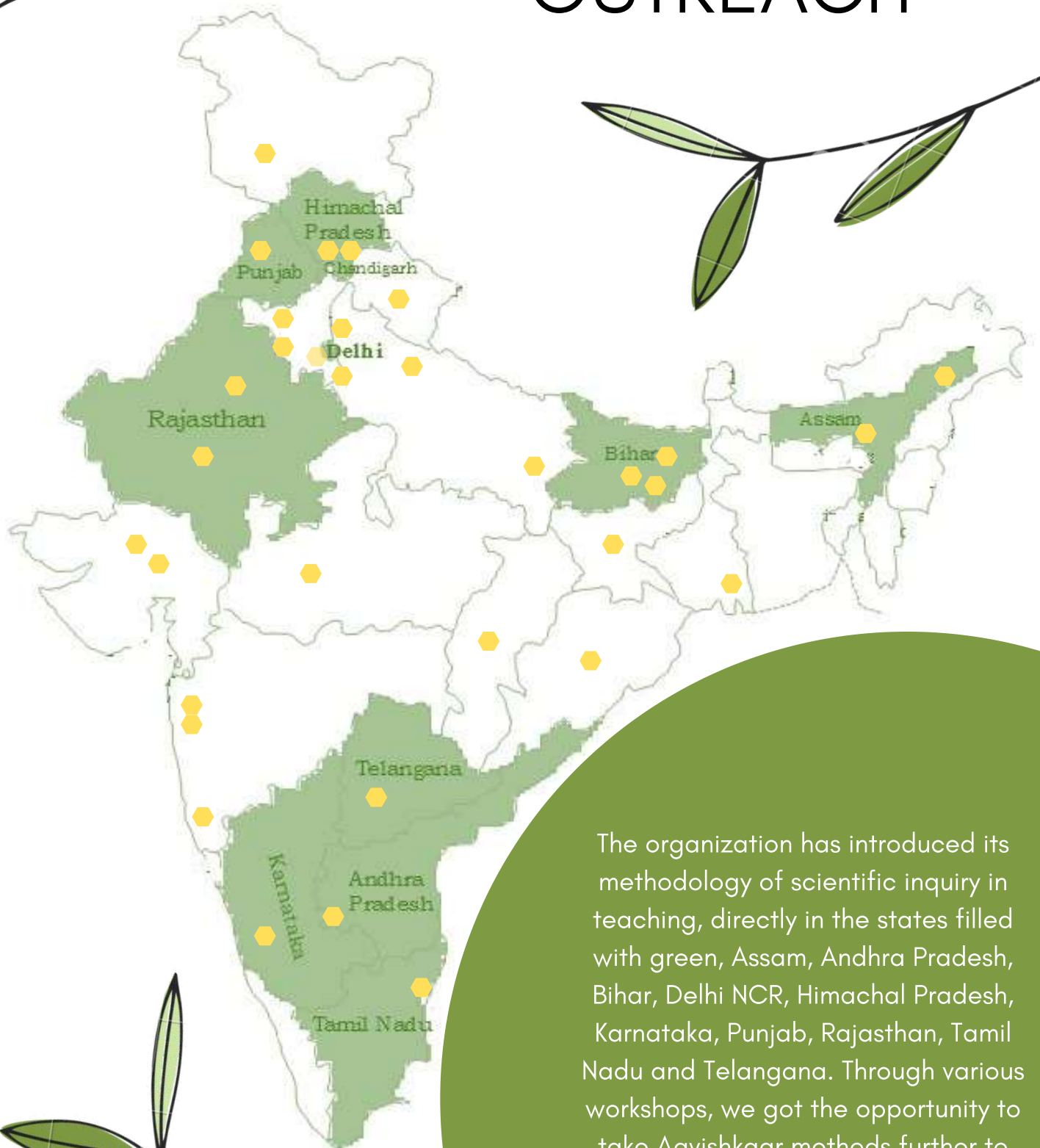
# OUR BENEFICIARIES

In the past 5 years the organisation has worked towards spreading its ideal of education throughout the country. The goal of Aavishkaar, to nurture curious, creative and critical thinking citizens of tomorrow through math and science, has been realized directly in more than 17,600 individuals countrywide.

15,951 students, 1303 teachers and 377 educators

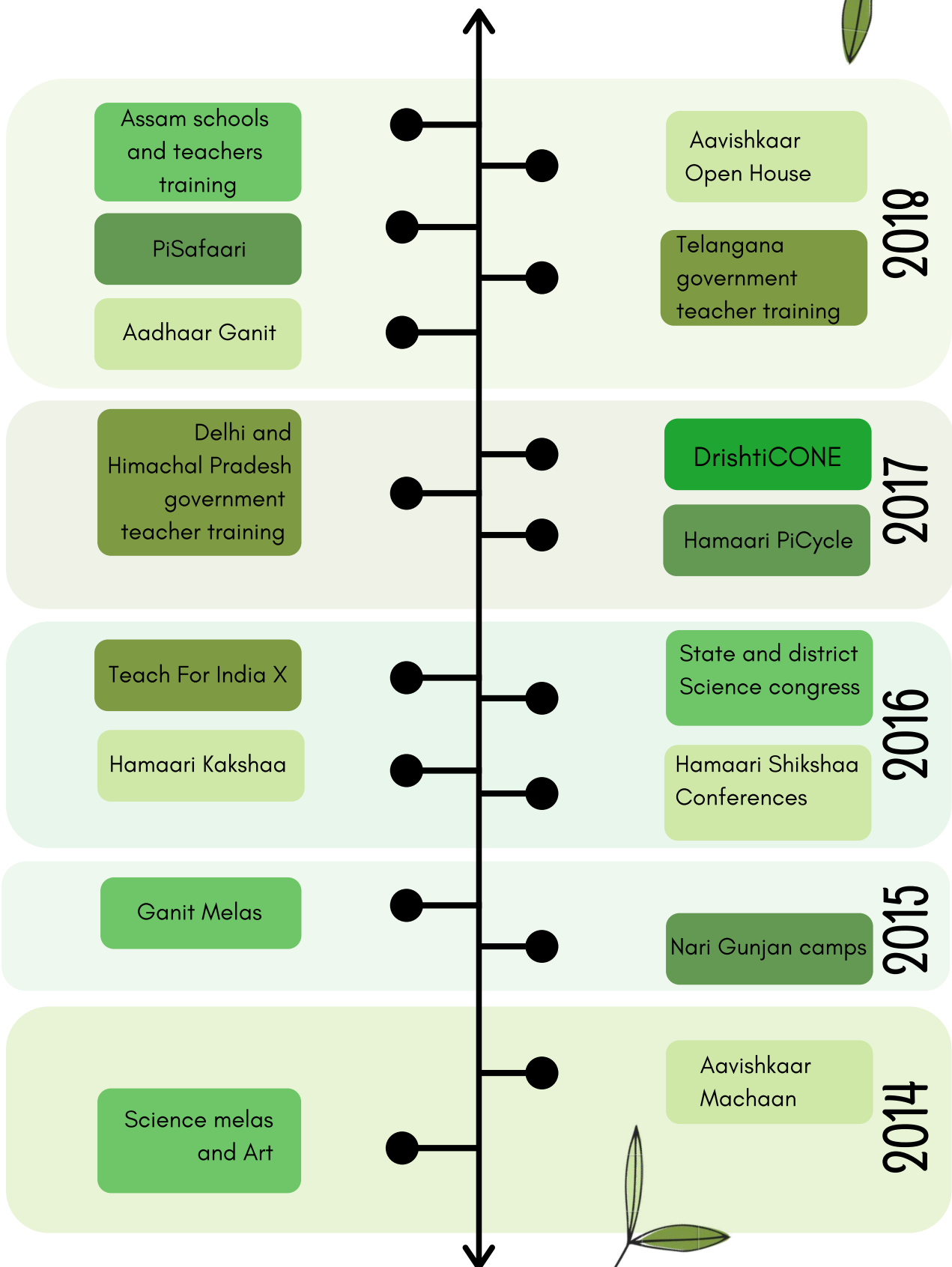


# OUTREACH



The organization has introduced its methodology of scientific inquiry in teaching, directly in the states filled with green, Assam, Andhra Pradesh, Bihar, Delhi NCR, Himachal Pradesh, Karnataka, Punjab, Rajasthan, Tamil Nadu and Telangana. Through various workshops, we got the opportunity to take Aavishkaar methods further to the native places of participants around the country, they marked with yellow hexagons.

# Journey through the past 5 years







## IMPACT STORY

*The kind of activities that the organization started were based on interaction with students through classroom sessions on various topics of math and science.*

*The essence was developing an attitude of learning which enabled an open atmosphere in the classroom and encouraged students to continuously ask "WHY" and delve deeper into everything they learned.*

*The first two years were spent building a strong foundation for all the content developed in these two subjects. Going forward, the need to work with middle school students on a long term basis was realized. A new program, DrishtiCONE, was introduced in 2018 and implemented in 2018-19 in the Panchrukhi block of Kangra district in Himachal Pradesh. It was through this program that the organization started working on a deeper level with smaller number of students for a longer period of time. The entire academic year was utilised in demonstrating all the content developed so far and helping the teachers in the adopted schools use the same content and materials. It is only in the last one year that the organization leveled up its initiatives to work more with teachers which added 800 of them to the three C's cadre - creative, curious and critical thinking citizens of tomorrow.*

*The reason for this shift of focus was the growth of the organization in terms of its understanding in the Indian education landscape. This built Aavishkaar's capacity to train the teachers better by addressing their daily challenges within the classroom. The government of Himachal Pradesh honoured Aavoishkaar due to their service in the field of education and invited Aavishkaar to train its teachers and honoured the organization as a National Resource for training teachers countrywide.*





## Goals for 2018-19

Equip and empower 100 students towards a re-imagined math and science Education.

Enable 250 teachers across the country to make Science and Math education in schools, joyful and relevant.

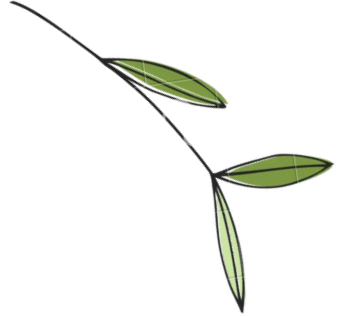
22 edu.

381 students

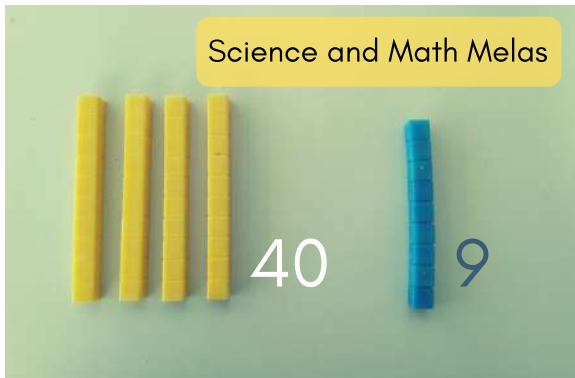
838 teachers

The year's actual outreach





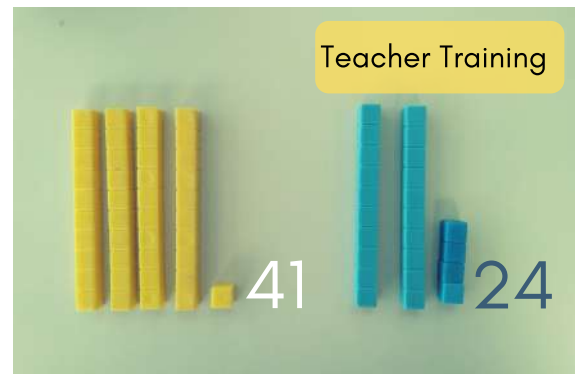
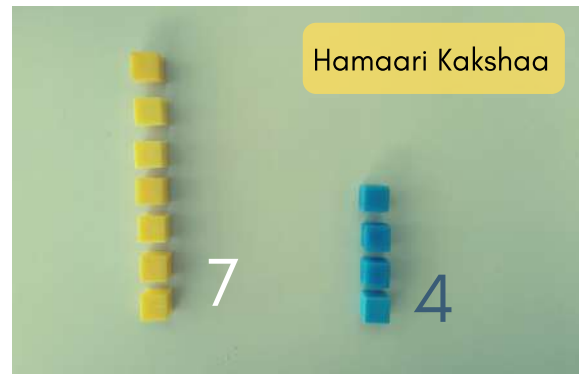
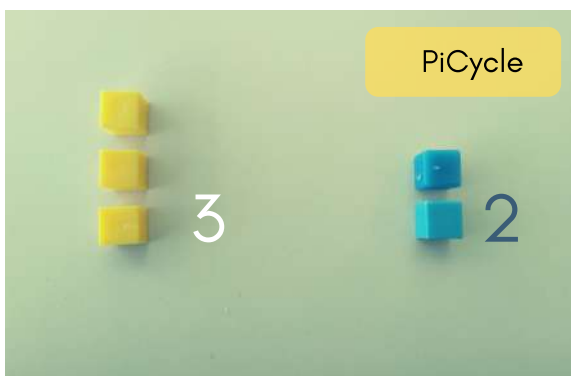
# Workshop Count



Number of times in all years



Number of times last year

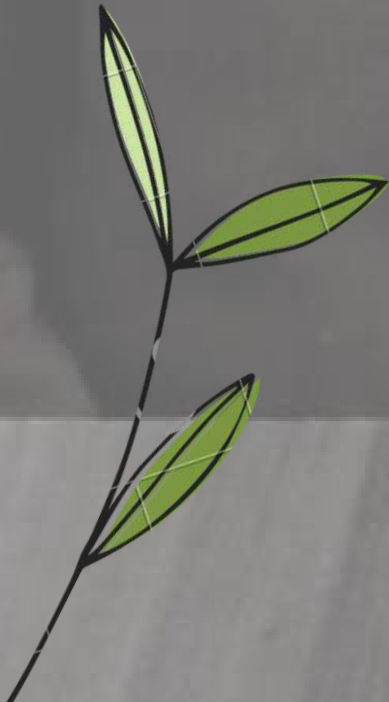


# DrishtiCONE

The flagship programme of the organization is DrishtiCONE where we have regular classroom engagement with middle school students of 8 schools in Panchrukhi block of Kangra district in Himachal Pradesh. This is the programme where regular work with students ensures the dexterity of the content that is developed at the campus. This content is continuously worked upon to make it more classroom-friendly. The programme also helps us work closely with the math and science teachers of all 8 schools.

The three activities that happen as part of DrishtiCONE are:

- Classroom Engagement
- Teacher Training
- Science and Ganit Melas

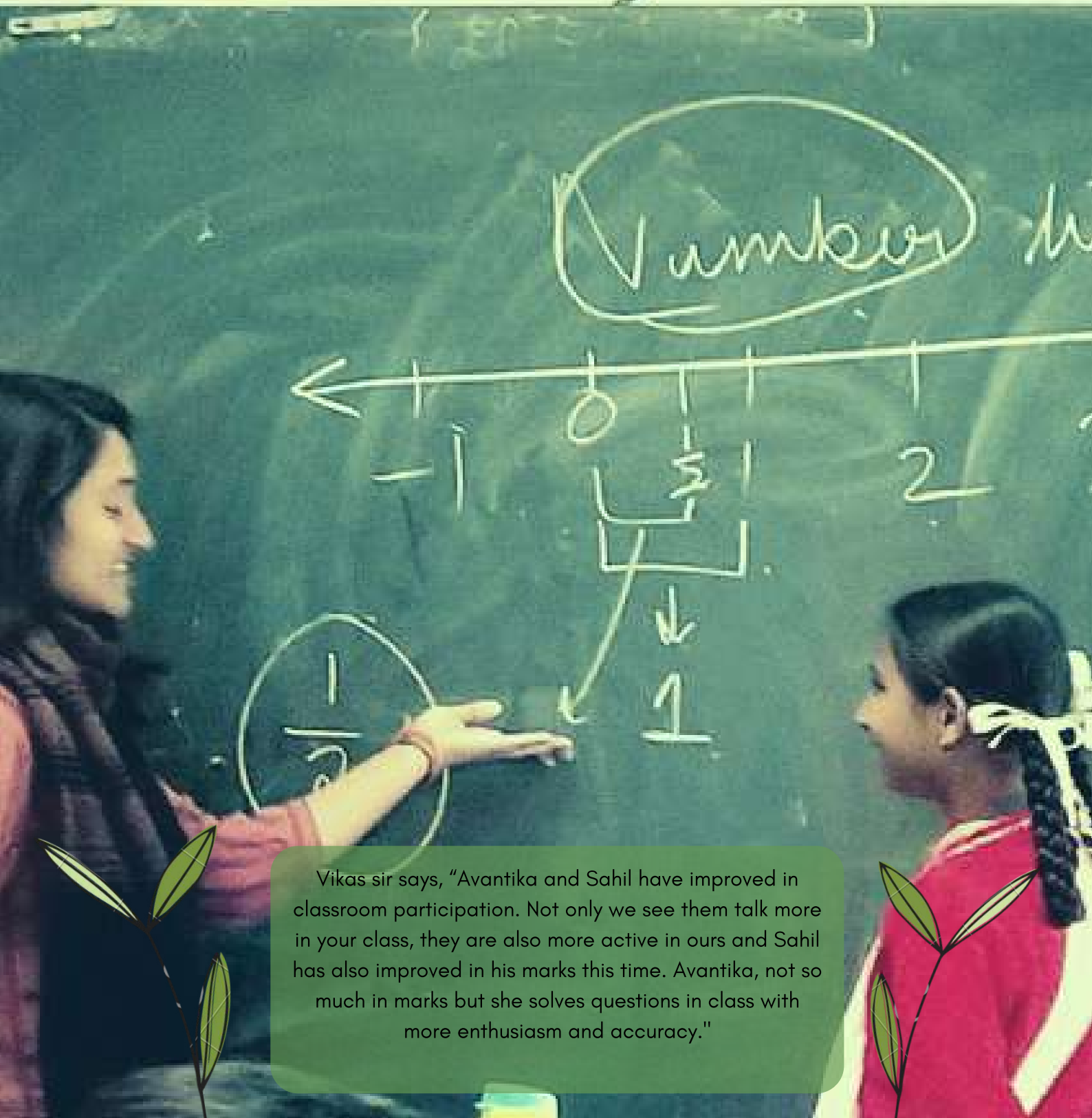




In 2018-19, 131 students were engaged with bi-weekly classes for the entire academic year. One of the kids who had shown significant improvement in class, the story of a girl in the school at Rajpur, Avantika, is worth sharing.

Avantika who was the low order student in the sixth grade of Rajpur, has become the star kid over just 18 sessions. Her performance in class has improved with respect to critical thinking, participation and peer interaction.

Any kind of special attention to Avantika works as positive reinforcement for her and she is able to align her actions to gain the attention of the facilitator at that instant. Avantika was shy of speaking up in class, had very few friends and other students rarely wanted to pair up with her when making groups. She started by giving answers in front of her classmates, and then slowly even in front of her math teacher - Vikas sir.



Vikas sir says, "Avantika and Sahil have improved in classroom participation. Not only we see them talk more in your class, they are also more active in ours and Sahil has also improved in his marks this time. Avantika, not so much in marks but she solves questions in class with more enthusiasm and accuracy."

Training for the government school teachers of Himachal Pradesh were conducted for primary school teachers, middle school teachers at District Institute for Education and Training (DIET) in Kangra district and Shimla district. 520 teachers were participants at these training which lasted 2-3 days each.

There are 49 schools in the Panchrukhi block of Kangra district in Himachal Pradesh. Aavishkaar, which is within the Panchrukhi block, engages with the 41 schools which are not part of DrishtiCONE by holding science and math melas in these schools, in community festivals or in their annual functions. These melas and game festivals (utsavs) give an opportunity to all the students in the school to adopt the Aavishkaar culture for 2 days. In these two days many topics get covered from their syllabus, occupying some space in their minds and leave memories which we hope stay for a long time.





## Nari Gunjan Camps

Nari Gunjan is an organisation in Bihar which works towards upliftment of the women of the Dalit Musahari community. Aavishkaar has been working in collaboration with the organisation since 2015.

This engagement has been in the form of student camps within Aavishkaar campus or visits of Aavishkaar team members to their Prerna hostels in Bihar. In the past 4 years Aavishkaar has engaged with Nari Gunjan at least 18 times, of which 4 such engagements occurred in 2018-19. Of these four times, 1 Nari Gunjan camp was held in Aavishkaar and 3 visits were made to Bihar to their hostel.

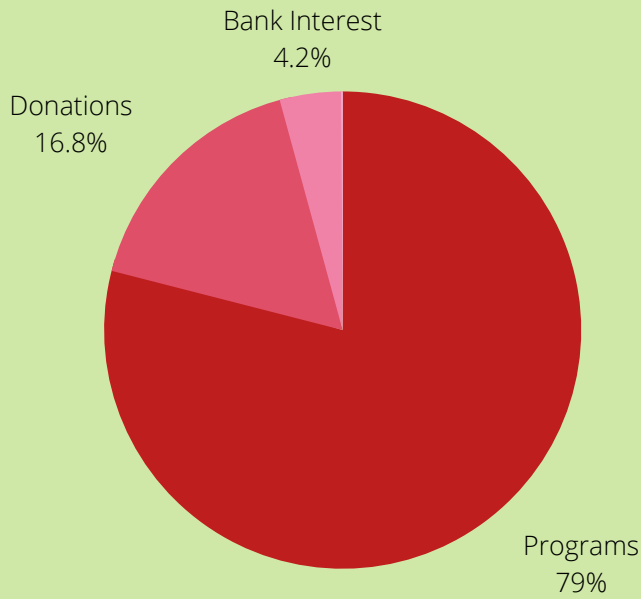
The on-campus time spent with 13 girls of Class 8th of Prerna Hostel Danapur, lasted two weeks. We worked with them to improve math, science, English and social science skills. In September, 3 of our team members visited their hostel and held 83 sessions with the 150 girls. In November, 38 sessions were conducted by 2 team members with the same set of girls and in February, 49 sessions were conducted. Overall we have spent more than 170 hours with the girls and helped them build acumen for arithmetic operations and scientific reasoning.

Other than classroom sessions, we worked with Nari Gunjan to build libraries at both the hostels in Bodhgaya and Danapur. Three teacher trainings were done with government school teachers of Maner block and the hostel teachers.

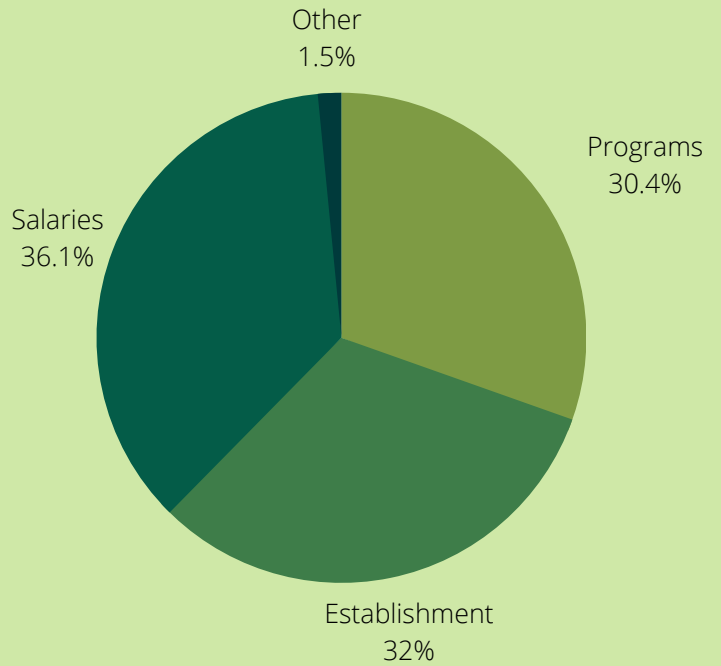


# FINANCES

## INCOME



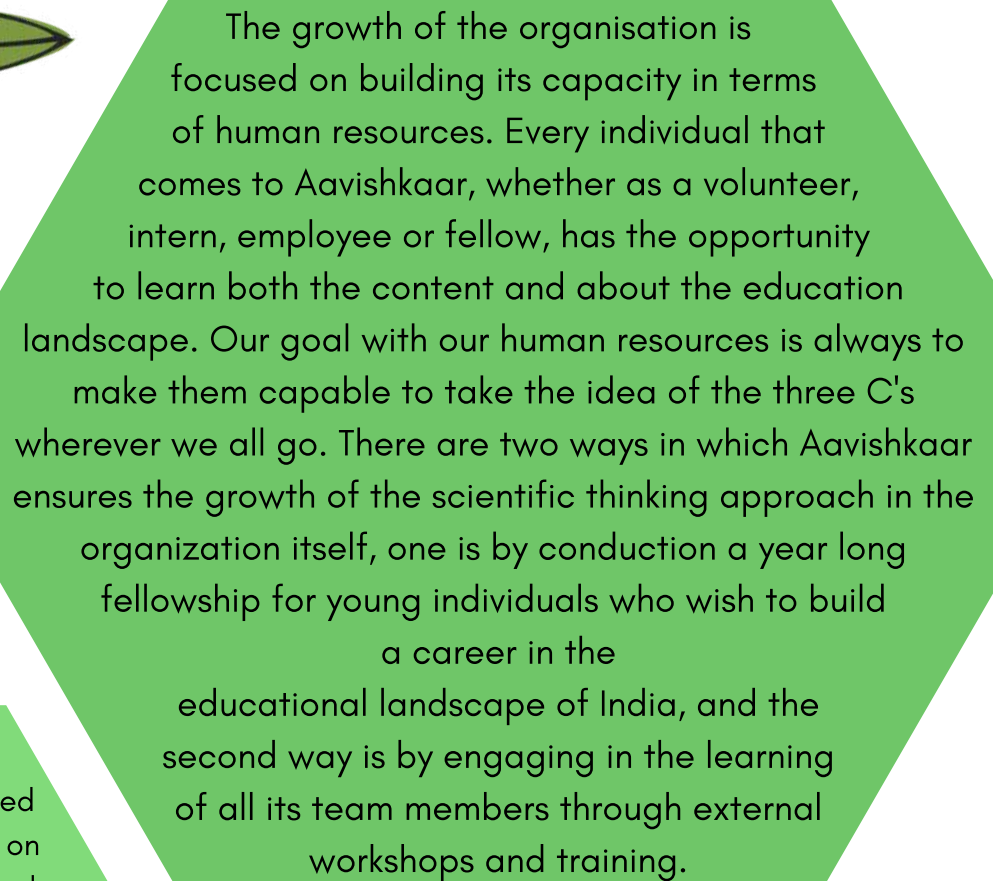
## EXPENSES



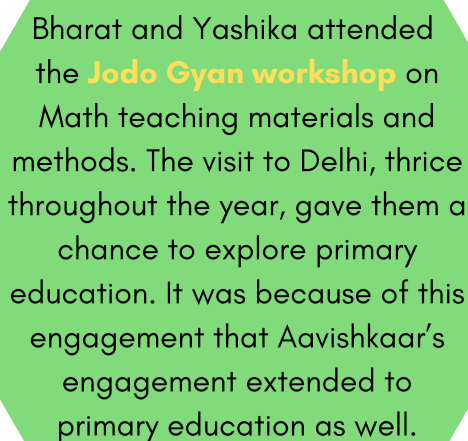
<b>INCOME</b>		<b>2018-19</b>
PGM	Programs	6,151,514
DTN	Grants, Donations	1,304,400
BKI	Bank Interest	324,070
OTH	Others	7,450
	<b>Program Income</b>	<b>7,787,434</b>
COR	Corpus Donation	-
	<b>Total Income</b>	<b>7,787,434</b>
BKX	Non Income Txn	97,750
BFD	Investment Redeem	-
	Cash Income	-
	<b>Bank Credits</b>	<b>7,885,184</b>

<b>EXPENSES</b>		<b>2018-19</b>
PGM	Programs	1,275,463
EST	Establishment	1,340,215
SAL	Salaries	1,513,069
OTH	Others	64,901
	<b>Program Expenses</b>	<b>4,193,647</b>
CAP	Capital Expense	-
	<b>Total Expenses</b>	<b>4,193,647</b>
BKX	Non Expense Txn	109,750
BFD	Investment Made	8,000,000
ADV	Cash Advance	300,000
	Cash Expense	320,606
	<b>Bank Debits</b>	<b>12,282,791</b>
	Excess Income	3,593,787
	Surplus Cumulative + Corpus	9,846,937

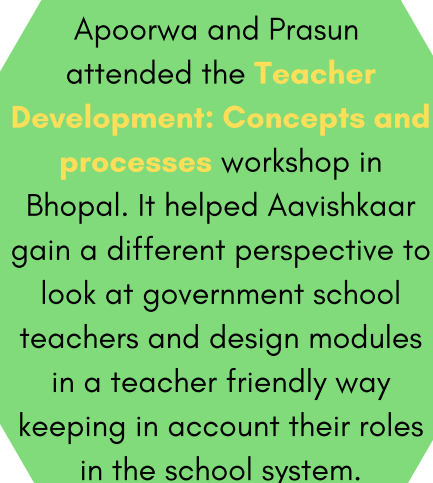
# Capacity Building



The growth of the organisation is focused on building its capacity in terms of human resources. Every individual that comes to Aavishkaar, whether as a volunteer, intern, employee or fellow, has the opportunity to learn both the content and about the education landscape. Our goal with our human resources is always to make them capable to take the idea of the three C's wherever we all go. There are two ways in which Aavishkaar ensures the growth of the scientific thinking approach in the organization itself, one is by conduction a year long fellowship for young individuals who wish to build a career in the educational landscape of India, and the second way is by engaging in the learning of all its team members through external workshops and training.



Bharat and Yashika attended the **Jodo Gyan workshop** on Math teaching materials and methods. The visit to Delhi, thrice throughout the year, gave them a chance to explore primary education. It was because of this engagement that Aavishkaar's engagement extended to primary education as well.



Apoorwa and Prasun attended the **Teacher Development: Concepts and processes** workshop in Bhopal. It helped Aavishkaar gain a different perspective to look at government school teachers and design modules in a teacher friendly way keeping in account their roles in the school system.



Rita attended the **Asian Plateau workshop** in Panchgani which has given Aavishkaar a new perspective on inclusive education, and creating a stress-free environment. Sessions were based on soul-searching, talent development, multiple-faith prayers as well as reconnecting nature with daily life.

# Aavishkaar Fellowship

2018 was the first year of the fellowship and also a very successful year! STEM education would be taken to classrooms through the fellows selected in the first year. Real-time working of an organisation towards quality education would help them in the second year to build their own organisations based on quality education. The work behind the curtains, including impact assessment, monitoring and evaluation, making reports and building capacity of self and the team, headed by an autonomous work environment enabled these fellows to learn about two organizations simultaneously, Nari Gunjan and Aavishkaarr. The 4 fellows came from 4 different parts of the country, Andhra Pradesh, Delhi, Himachal Pradesh and Maharashtra. While Rita had been a teacher for 2 years, Aishwarya, Simran and Sriram learnt to teach for the first time. Because of their cosmopolitan approaches, Aavishkaar was able to see challenges faced by teachers teaching math and science, firsthand in the classrooms of schools we engage with. The four fellows have contributed to the organisation's teaching arena and gained a lot from it as well.

Rita says,  
"I think becoming an Aavishkaar Fellow is a great opportunity for me in shaping my thinking. Aavishkaar provides me with a lot of space to learn not only math and science but also help me in developing my life skills. I feel lucky to be an Aavishkaar Fellow as it helped in all-round development in personality."

Sriram says,  
"Journey with Aavishkaar made me learn lot of new things and qualities which were never known before. After coming to Aavishkaar, I understood that to learn new things it's not so complicated but it's very simple, fun and clear. I really had so many AHA! moments and memories in Aavishkaar to preserve for lifetime."



# Planning the next two years

Up-scaling the teacher support programme, customized for 5 different partner organizations.

Starting a year-long Aadhaar Ganit workshop for primary school teachers.

Taking PiCycle and PiSafaari outstation.

Recruiting more Aavishkaar Fellows.



# Testimonials from Aavishkaaraks

Apoorwa, Program Manager of DrishtiCONE, says, "Recollecting my first day at Aavishkaar, in a room full of 'dabbas' with science and math, so overwhelming that I did not know where to begin. Every new dabba I opened, the teacher in me felt enlightened as well as regretful (wishing I had come across it while teaching full time). I spent the first couple of days in distress reflecting on my teaching days, realizing I had pseudo-understood concepts and had made my students believe likewise!

As more boxes of consciousness (literally and metaphorically) opened, it not only filled me with a fresh awareness of concepts but also gave me a new perspective to understanding and learning. There was a renewed confidence that led me to take up work I had no prior experience in. Over a year at Aavishkaar, I learnt to question, push myself, agree to disagree and make an effort without fearing failure. I continue to be a learner, now with more faith in understanding but doubt in the 'accepted truths'!"

Abdul, a TFI fellow, says, "Now, my kids have started understanding Math and loving it. All because of the insightful learning and unlearning I got from Aavishkar workshops. For me it was a life changing experience as a Teacher as well as a learner. It Changed my perspective for Math from 'just an another subject' to 'a part of life', corrected my misconceptions, and gave me enough courage to say to my students that 'I don't know.'"

Vignesh, an educational consultant and well-wisher of Aavishkaar says, "How often do you fall in love with a place and its people instantly? Rarely, isn't it? Aavishkaar for me is a surreal place, filled with a caring, compassionate and crazy bunch of people who are sure to make you wonder if there is a better place than this tiny little magical world. What makes Aavishkaar genuinely unique is the strong ethos of the organisation. In little ways, every single person in Aavishkaar truly believes in making a difference. In an era where personalised learning is slowly getting replaced by one-size-fits-all technological innovations, here is an organisation that continues to establish and strengthen the need for personalised and contextualised learning for every single individual. I am certain that in the next five years, Aavishkaar will be pioneers in the innovation of Science and Mathematics education across the country."



# Our Collaborators



**Asha**  
for Education  
Bringing hope through education



**MALALA** FUND



CENTRAL TIBETAN  
ADMINISTRATION



Science Corps

**TEACHFORINDIA**



**Himachal Pradesh**