



**October - November 2023**  
**Bi-Monthly Report**

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Prepared by:  
STEAM Policy Unit  
Ministry of Federal Education & Professional Training  
Government of Pakistan

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## Executive Summary

STEAM Pakistan is a multi-strand project aimed to improve STEAM education through a phased approach. Its expected outcome is to improve STEAM learning for 5 million students, build the professional capacity of 100,000 teachers and revamp 13,000 high schools all across Pakistan in the next 5 years.

Major milestones achieved during the months October and November 2023 include:

- 1,416 STEAM partner schools have signed up for the programme as of 30th November
- 2,719 students from 84 schools in Sindh, Punjab, Islamabad Capital Territory, and Khyber Pakhtunkhwa were engaged through various STEAM Pakistan corporate and university partners in the form of Safer sessions, math circles, and STEAM Club activities.
- In-person orientation sessions were held in Sindh for 355 teachers and head-teachers from 305 government schools. Additionally, 8 virtual activity-specific refresher sessions were held with a total of 671 teachers attending and 3 in-person training sessions for 79 teachers in Islamabad.
- The FDE STEAM Competition was announced for 2024 with all schools beyond level 4 in the school journey as of 30th November eligible to partake. The competition will be staggered in 3 rounds: i) school round, ii) area round, and iii) final round including the award ceremony.
- 7 top performing STEAM Pakistan partner schools from FDE were invited to a celebration event hosted by the Secretary, Ministry of Federal Education & Professional Training (MoFEPT). On the day, The Secretary announced one month's bonus salary for the head teachers and focal person, as well as a one-time grant of PKR 100,000 to be used at the school's discretion for upgrades.
- The Lahore Science Mela (LSM) was held on 28th and 29th October. To celebrate and encourage top performing STEAM Pakistan schools, 5 FDE, 4 FGEI, 2 SED Punjab, and 1 SE&LD schools' headteacher and focal person were sponsored by the programme to attend the Mela.
- The Directorate of School Education Hyderabad (SE&LD) and STEAM Pakistan's top performing school in Hyderabad, GGHS Latifabad No.10, invited schools from the Hyderabad district as well as DEOs from several other districts in Sindh to attend the "STEAM Awareness Sessions". The session led by the school's focal person included an overview of STEAM, activity demonstrations by students and teachers, and a walkthrough of the school portal and reporting.
- Sindh Teachers Education Development Authority (STEDA) and STEAM Pakistan will collaborate on developing teacher training modules, certification for teachers, and art guides in the coming months along with assisting in subject-specific teacher training workshops.

- Six training sessions were held for master trainers from Quaid-e-Azam Academy for Educational Development (QAED), Punjab in the three districts of Rawalpindi, Lahore, and Multan, engaging 210+ trainers who will now be tasked with training teachers in their own regions.
- Second stocktake was held in Sindh setting bi-monthly targets for school engagement and activities conducted.
- STEAM Pakistan, in collaboration with PIE, will be facilitating a national workshop on research methods and data collection tools for the matriculation exam analysis.
- Pakistan Cables sponsored STEAM Pakistan's second STEAM Safari visit, a highly motivational and encouraging field trip to TDF MagnifiScience Center in Karachi for 60 girls from the programme's recently most active school in all of Karachi's 6 districts, SMB Fatima Government Girls School.
- STEAM Pakistan held multiple exploratory conversations with existing and prospective partners discussing avenues to initiate and build on collaborations. Such conversations were held with IBA Karachi, Habib University, Indus Valley School of Art and Architecture, University of Sindh, and GetzPharma.

Moreover, the program activities and outputs are being tracked against deliverables for the purpose of monitoring and evaluation. The bi-monthly STEAM report will contain an overview of the program outputs and the challenges encountered during implementation.

## Project update

This section of the report will include strand-wise updates for the deliverables covered within the months October to November.

## Learning

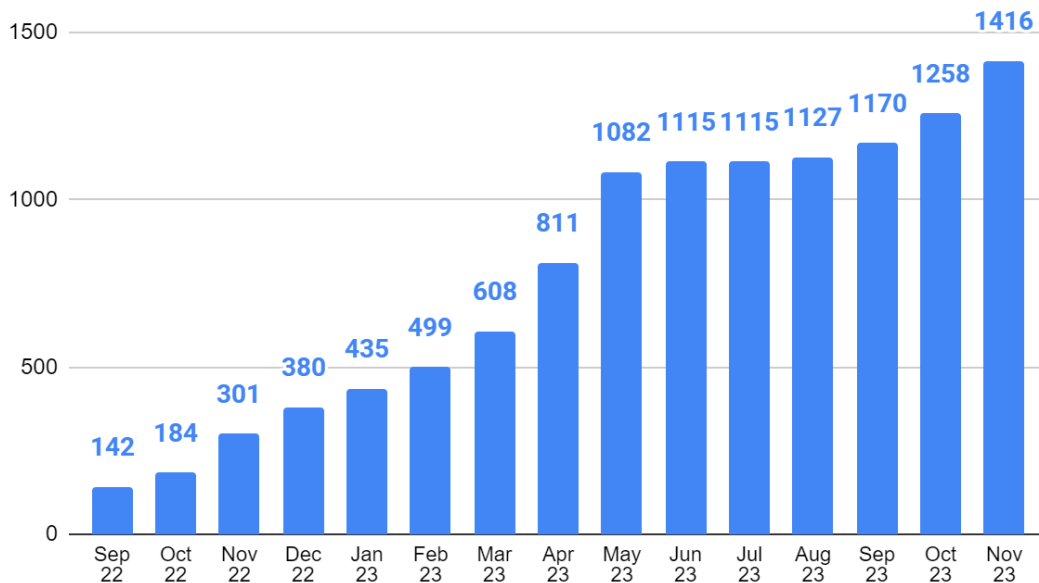
This section will provide updates on partner school's status as of November 2023 by geographical coverage, level of activities, student and/or teacher engagement, an update on training/fresher sessions, orientation sessions, and/or portal development.

### 1. Partner Schools' Highlights

#### A. Journey to date

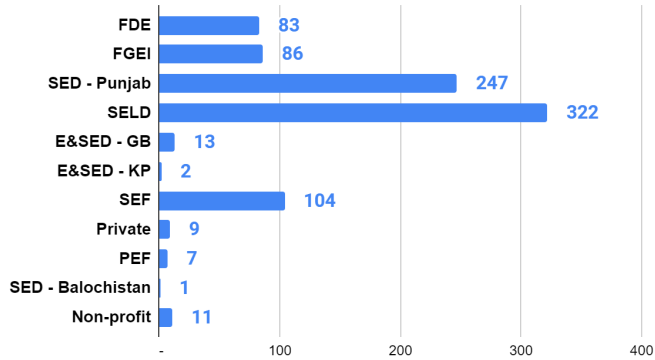
**1,416 Government Schools Engaged**  
**79 Districts Covered**  
**122,310 Students Engaged**  
**73% Girls, 27% Boys**  
**670 STEAM Clubs**  
**3,269 STEAM Club Activities**

No. of Schools Registered Over Time

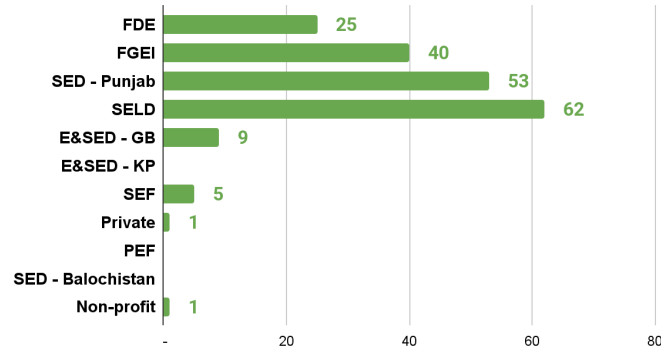


## B. Level-wise progress

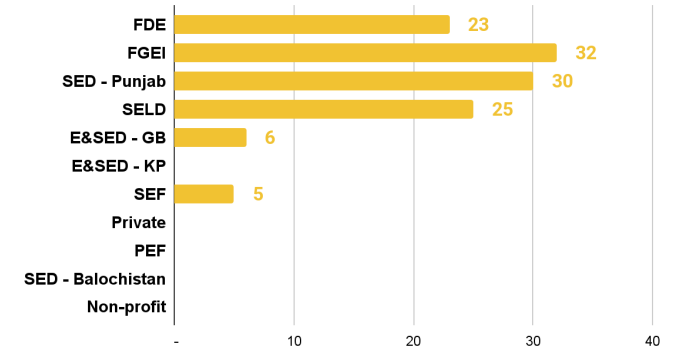
Level 1 by Institute



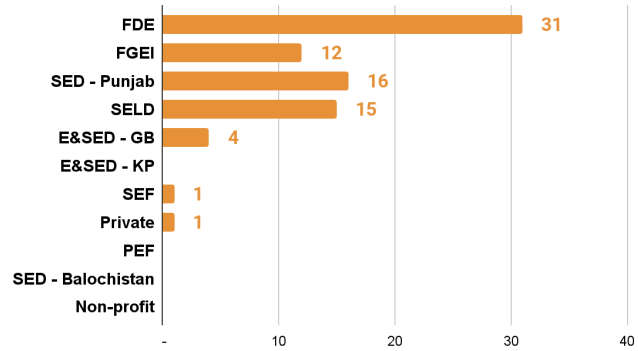
Level 2 by Institute



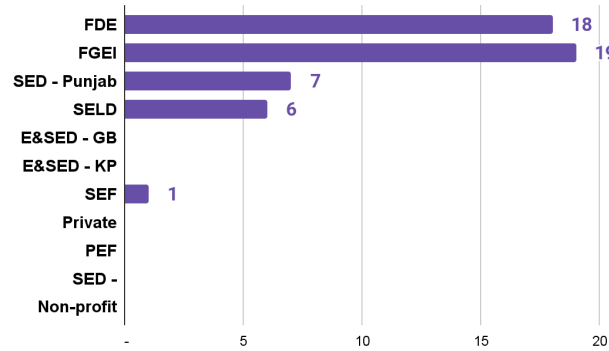
Level 3 by Institute



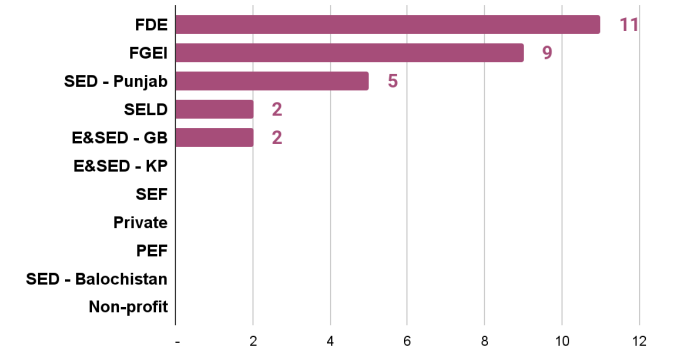
Level 4 by Institute



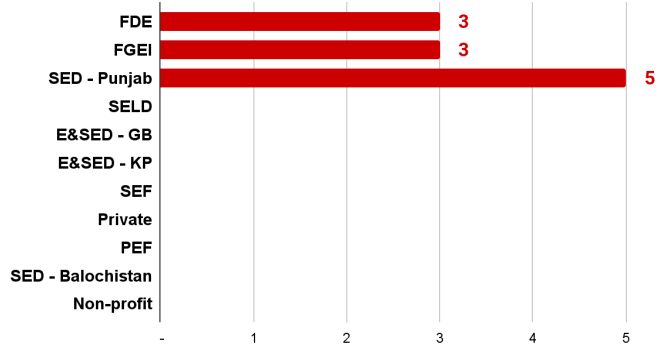
Level 5 by Institute



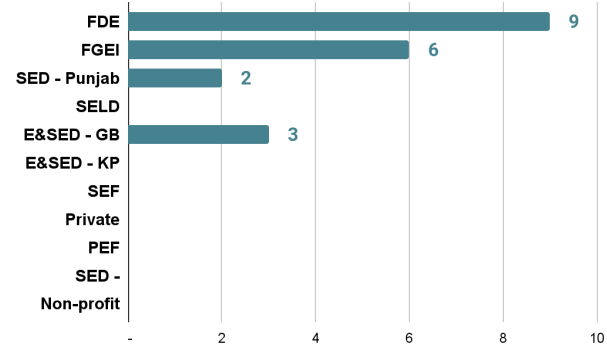
Level 6 by Institute



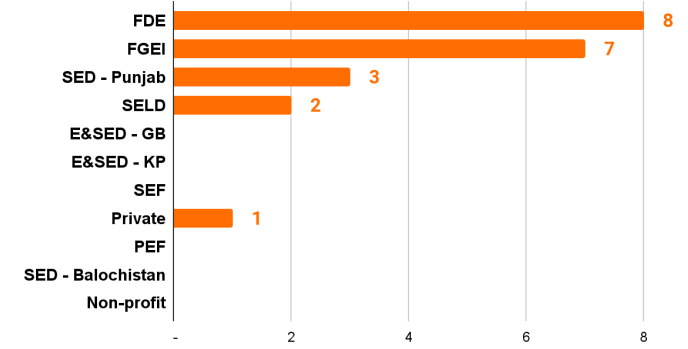
Level 7 by Institute



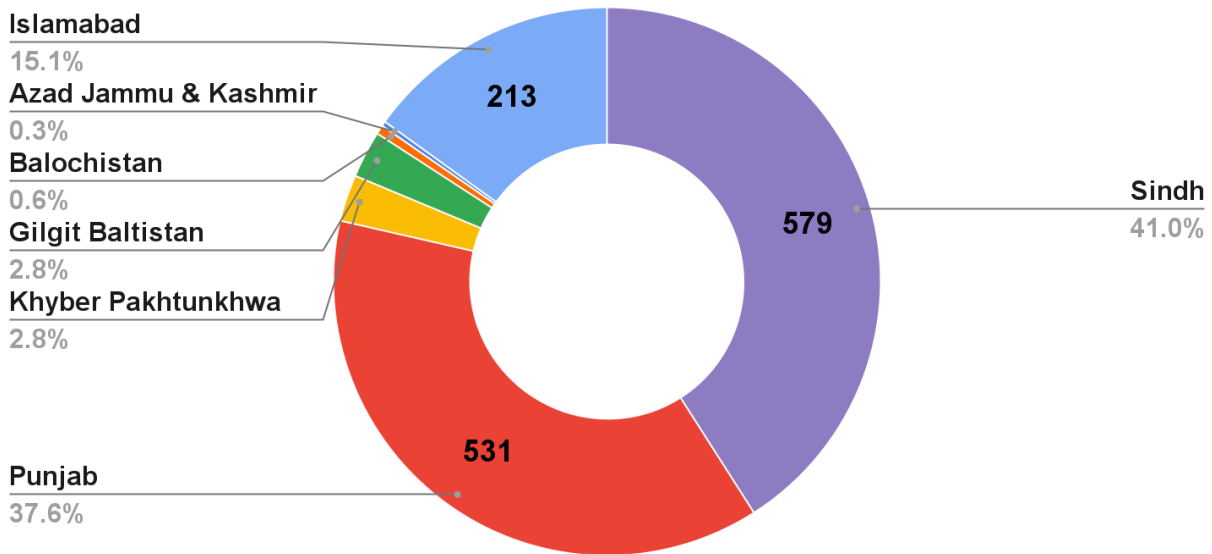
Level 8 by Institute



Level 10 by Institute

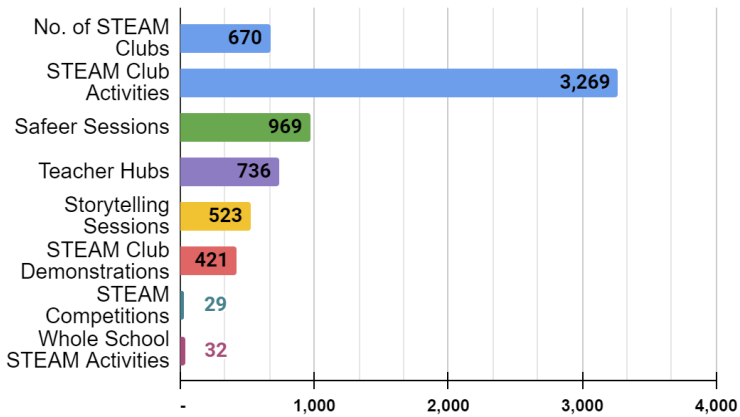


### C. Region-wise partner school distribution

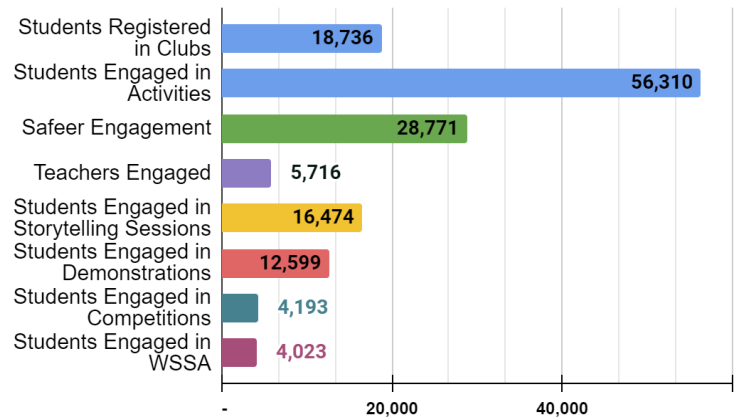


### 2. Activities in partner schools

#### Components



#### Engagements





## **2. FDE STEAM Competition**

STEAM Competition is an annual celebration of our partner schools' progress throughout their academic year journey. Eligibility criteria for FDE partner schools, mutually agreed with senior management of FDE, is schools level 4 and above in the journey. The notification for the same issued by FDE is viewable [here](#). Submissions are category based, and have been divided into student and teacher categories. These categories are designed to be inclusive to the use of technology, pop culture, creative freedom, and academic relevance.

The competition consists of 3 rounds, school round, area round and final round. All participants will be given digital certificates of participation, and winners in the final round, scheduled to be held on the day of the award ceremony, will be given cash prizes, along with having their winning entry published in a digital how-to guide, authored by the winning student and teacher.

Details were shared with schools including overall poster, school round poster and school round instructions document through the FDE schools WhatsApp group. Additionally, the deadline to achieve level 4 qualification was extended from 15th November to 30th November.

More details can be viewed in the bi-monthly report shared with FDE accessible [here](#).

## **3. FDE schools' celebration with Secretary MoFEPT**

The Secretary of the Ministry of Federal Education & Professional Training, Waseem Ajmal, hosted head teachers and teachers from 7 high performing STEAM Pakistan schools from FDE on 16th October, 2023. As part of the Ministry's STEAM Pakistan program, the head teachers and the program's focal persons were invited to tea to celebrate these schools' commitment to improving the learning experience of their students.

The Secretary Waseem Ajmal remarked, "From the establishment of STEAM Clubs, organizing Safer sessions, encouraging students to conduct STEAM demonstrations, these schools have shown how we can transform schools just through committed teachers and head teachers."

At the meeting, the Secretary also announced a one-month bonus salary for each of the teachers and head-teachers present, as well as a one-time grant of PKR 100,000 for each of the 7 schools to be used at the discretion of the head-teacher. The ministry had shared this same report on their social media handle as well viewable [here](#).

STEAM Pakistan has observed a dramatic increase in activities since the Chai with the Secretary of top performing schools and AEOs actively pushing schools to take part in the journey.

## **4. Meeting with FDE AEOs and hi-tea**

## Meeting

A meeting was held with education managers of FDE on 27th September, a notification for which can be viewed [here](#). The following items were discussed in detail.

### *Continuous Professional Development*

The observation tool was shared with AEOs explaining to them the purpose i.e. for principals to provide feedback to teachers on improving teaching pedagogy. AEOs are to inquire about the observation tool from the principals during their visit to schools.

### *STEAM Competition*

A list of all schools on Level 1 and Level 2 from each sector was shared with AEOs. A mutual decision between AEOs and the STEAM Pakistan team was to include a condition for qualification in the STEAM Competition i.e. schools need to be level 4 and above to be eligible.

### *Schools' Progress*

AEOs also suggested the team visit the sectors and hold a meeting with each AEO on sector-wise progress additional to a refresher for schools on level 1 & 2. This has taken place in Sihala, Nilore and Tarnol so far. For the remaining sectors, AEO transitioning was in process due to which this was put on hold, and will continue in the coming weeks. More details on these can be viewed in the "In-person refresher training in Islamabad section" under "Refreshers" below.

## Hi-tea

STEAM Pakistan and FDE organised a hi-tea for the Area Education Officers on 7th November inviting all AEOs (those being transferred out and the newly appointed) to acquaint them with the programme deliverables and goals. In the aforementioned meeting, dates for briefing L1 and L2 schools were decided as 10th November in Nilore and 14th November in Tarnol. The purpose of these sessions was to give schools a quick programme recap to help them achieve level 4 of the journey to ensure eligibility for the STEAM competition.

## **5. SE&LD orientation sessions**

Orientation sessions are a key feature for the newly registered schools with the STEAM Pakistan programme. These were held for Sindh Education & Literacy Department (SE&LD) in the month of November from 26th October to 16th November with participation from 355 head teachers / focal person from 305 schools. These orientation sessions will continue in the month of December for districts Sukkur, Larkana, Shaheed Benazirabad, and Karachi South. Details from sessions from October to November can be viewed below.

Date	District	Participants
26-Oct-23	Karachi Korangi	53
31-Oct-23	Karachi West	66
02-Nov-23	Karachi Malir	50
11-Nov-23	Karachi Central	57
13-Nov-23	Hyderabad Group A	39
14-Nov-23	Hyderabad Group B	31
16-Nov-23	Karachi East	59

It is worth noting that the STEAM focal person from GGHS Latifabad No. 10, the top performing school in Sindh, is leading the “STEAM Awareness Sessions” and also led parts of the orientations taking place in Hyderabad for schools that were being onboarded. More on the “STEAM Awareness Sessions” can be found in the section for the same under “Sindh”.

## 6. Refreshers

### In person refresher trainings in Islamabad

As discussed in the meetings on 27th September and 7th November with FDE, in-person refresher sessions were held with level 1 and 2 schools to boost their progress. The schedule for these sessions is below.

Date	Sector	Attending Schools
19-Oct-23	Sihala	21
10-Nov-23	Nilore	33
14-Nov-23	Tarnol	25

### Weekly virtual refreshers

STEAM Pakistan initiated virtual weekly refreshers for all institutions starting 17th August 2023. These are optional sessions aimed at recapping various elements of the school journey as well as addressing any problems teachers might be facing in progressing further. 8 sessions have successfully been held in the months of October and November with 671 teachers participating in total. These sessions are generally held on Mondays each week from 3-4 PM. The schedules for the months of October and November can be found below:

October			
S#	Name of Session	Date	Time
1	Level 2 & 3 - Reporting + STEAM Club	02-Oct-23	4-5pm
2	Level 4 - Storytelling + Teacher Hub Refresher Session	09-Oct-23	3-4pm
3	Level 5 - STEAM Safer Refresher Session + Reporting	16-Oct-23	3-4pm
4	Level 2 & 3 - Refresher Session	23-Oct-23	3-4pm
5	Level 6 - STEAM Club Demonstration	30-Oct-23	3-4pm
November			
6	Level 2 & 3 - Reporting + STEAM Club	06-Nov-23	3-4pm
7	Level 4 - Storytelling + Teacher Hub + Reporting Refresher Session	13-Nov-23	3-4pm
8	Level 5 - STEAM Safer Refresher Session + Reporting	27-Nov-23	3-4pm

## 7. New training components

### Classroom observation tool

STEAM Pakistan in collaboration with the Federal Directorate of Education initiated a pilot in September to introduce an observation tool to help head teachers assess practices of educators in their classrooms. Out of the 25 schools that participated, a total of 21 schools actively carried out observations at least once a month. Schools were made to share their observations and a WhatsApp group was formed for easy coordination. As of 30th November, a total of 164 observations have been carried out.

The team selected 5 schools, 3 female and 2 male, to observe teachers and evaluate their teaching practices in a lesson with the head teachers. Comparing the 3 months, it was found that the most drastic improvements were in the introduction, conclusion and class management indicators of the tool. AEOs were also informed of the classroom observation tool and asked to inquire about it from headteachers. The same exercise will also be conducted with the new AEOs that have recently been transferred.

A follow-up meeting with FDE on the observation tool is to be tentatively scheduled in early December and officials will be asked to conduct classroom observations with headteachers to gauge the effectiveness of the tool. A refresher training will be planned during the winter break where feedback from head teachers will be taken. This pilot is intended to scale-up and include all FDE schools in the upcoming academic year for which training will be designed by the team.

## 8. Lahore Science Mela (LSM)

The Lahore Science Mela is an annual event that is hosted by Khwarizmi Science Society (KSS) every year. This year marked their 5th annual iteration on 28th and 29th October. As an incentive

for the top performing schools, 12 schools from FDE, SELD, SED Punjab, and FGEI, head teachers along with their focal person were sponsored to attend the event for the first day, 28th October to help them broaden their exposure in STEM related activities. A detailed press release outlining details from the event can be viewed [here](#). These schools can be viewed below:

School	Institution
IMCG M/T Humak (Sihala)	FDE
IMSG (VI-X) G-6/2 (Urban I)	FDE
IMCG F-6/2 (Urban I)	FDE
IMSG (I-X) NHC (Bhara Kahu)	FDE
IMSG Jhangi Syedan (Tarnol)	FDE
FG Fazaia 2nd Shift Jinnah Camp, Chaklala	FGEI
FG Sir Syed Public School (Girls), Rawalpindi	FGEI
FG SMHS (N.H) Public School (Girls), Multan	FGEI
FG Public School (Boys) Tufail Road Quetta Cantt	FGEI
GGHS Shalimar Town Lahore	SED - Punjab
GGCMES 229/RB FSD	SED - Punjab
GGH/s campus Latifabad no 10	SELD

The STEAM Pakistan team had an opportunity to interact and inquire about the impact of the programme within their schools and their experiences at the Lahore Science Mela. Notably, many educators expressed their admiration for the remarkable student projects and stalls at the mela, expressing their desire for students from their schools to partake in similar experiences.

In line with this enthusiasm, these teachers are keen for respective institutions to take the initiative to bring a similar educational experience to regions beyond Lahore, enabling students to participate and benefit from them. Additional details from the LSM can be found in the “Lahore Science Mela (LSM)” section under “Punjab”.

### 9. Star Journey

The “Star School Journey” is for schools that have completed level 10 and are wondering “What’s next?”. The objective of each school will be to unlock all 5 stars (in whatever order they prefer). A star is unlocked when the tasks under ‘A’ are accomplished (‘A’ category tasks are mandatory for each star). The ‘A+’ category provides an optional challenge for schools that would like to go the extra mile. This will be in continuation of the 10-school journey. The Star Journey was rolled out on the 26th of September, with 19 schools currently on this level. This special journey can be accessed [here](#) with an explainer video [here](#).

## 10. Monthly Maker Challenge (MMC)

### October

In comparison to 3 schools participating in September, the MMC saw 12 schools submit applications in the month of October. The challenge for this month was themed “Eggstronaut” with the objective to create a project capable of securely landing an egg from a minimum height of 15 feet. A report shared by the Pakistan Science Club with STEAM Pakistan with additional details can be viewed [here](#). The list of winners can be found below.

Position	Participating Student(s)	School
1st	Rafiya and Tahira	Government Girls High School Latifabad No. 10
2nd	Nayia Madhur, Sidra Javed and Sana	GGCMES 229/RB Fsd
3rd	Muhammad Hamza, Muhammad Jawed, Muhammad Siraj and Abdul Rehman	GBHSS Ghazi Muhammad Bin Qasim

### November

For November’s iteration, the challenge is to develop an “Aqua Guardian”. The objective is to create a device, machine, or a system that helps households use less water. 20 students participated from 8 schools for this month’s challenge. The report shared by the Pakistan Science Club for November can be viewed [here](#). The list of winners can be found below.

Position	Participating Student(s)	School
1st	Fawaz	Govt Comprehensive Higher Secondary School Sahiwal
2nd	Maira Batool and Mahnoor	IMCG, F-10/2 Islamabad
3rd	Khadijah Amjad	Islamabad Model College for Girls, G-9/2, Islamabad

## 11. Math content development

Content for math activity guides has been developed and has now proceeded to the designing stage. Once complete, the document is going to take the shape of one of the math guides that will be included on the STEAM Pakistan website and also shared with teachers to help in mathematics instruction. While guides for science are already present on the website, these will be the first of its kind for mathematics.

A second document has also been prepared with math/cricket activities and thought-provoking questions. It contains math questions themed in cricket that will be used for pop quizzes/quick

trivias. It will be continuously updated, and content from it will also begin rolling out soon. Illustrated content from this document was to be used during the world cup, however, owing to Pakistan's early exit, the deployment of the content has been paused for future.

## 12. STEAM portal

The school STEAM Portal is a platform for schools to access important resources such as guides and tutorials for school staff. Additionally, all reporting activities are performed through this portal. It can be accessed on the STEAM Pakistan website ([www.steampakistan.com](http://www.steampakistan.com)). Along with multiple other tweaks, following are significant developments till taking place between October and November 2023:

- The portal will soon display school-wise components and gender segregated engagements to the programme team
- An infographic showing the pending and complete items of the next level for a school is underway to display on the school's portal dashboard. This should be completed by the end of this week. The purpose is to give schools a visual of what items they need to complete to achieve the next level in real time.
- All sessions on the school portal are now logged out at 12 am every night, requiring each user to login. This has been done so that any development changes made to the portal are reflected in the user's account. Previously, a school's level would not update unless a school logged out and logged in again.

## 13. Helpdesk

A helpdesk has been set up to file queries from focal persons of our partner schools regarding STEAM journey levels, activity ideation and the portal reporting mechanism. The helpdesk is functional across three avenues of communication.

- Schools can reach out with queries over WhatsApp (0300-0606063)
- They can reach out via email at [info@mathsandscienc.pk](mailto:info@mathsandscienc.pk)
- Zoom helpdesk - Tuesdays and Thursdays, 10:30 AM to 11:30 AM and 3:00 PM to 4:00 PM

## 14. Analytics for existing video content

Statistics for existing STEAM Pakistan content on [YouTube](https://www.youtube.com) can be viewed below:

Months / Cumulative	Modules	Views	Hours Watched
October - November	5	13,903	432.6
Cumulative	50	39,535	1,086.1

## STEAM Safer

The STEAM Safer component of the program aims to inspire students and connect them with skilled professionals who use STEAM concepts on a daily basis. Through sessions, STEAM Safer exposes students to available in-school and out-of-school resources in the form of mentors who share their experiences, expertise and achievements to inspire and motivate them. Highlights for the last two months can be viewed below.

**33 Government Schools Engaged**

**35 Sessions Conducted**

**1,612 Students Engaged**

**43 Professionals**

**15 Organizations**

**9 Districts  
Covered to  
Date**

### Newsletter

Newsletters published in the months of October and November can be accessed below:

- [Sep 23](#)
- [Oct 23](#)

Previous monthly STEAM Safer newsletters can be accessed [here](#).

### Dedicated webpage and portal

A dedicated landing page for STEAM Safer and a back-end portal has been designed and developed. The landing page has been live at [www.steampakistan/safer](http://www.steampakistan/safer) since January 2023. The most recent iteration of portal developments has seen a significant change. Starting November, Math Circles facilitated by the partnerships team will also be set up through the STEAM Safer portal. This will help in structuring and collecting reliable data regarding the circles that are conducted with the help of the partnerships team.

### Waasta team pilot

The Waasta program is based on school facilitation through continuous engagement with the school. Currently the STEAM Pakistan team is conducting an internal pilot for this component by visiting schools and engaging them twice a month. Activities include but are not limited to ones conducted by Safer sessions.



### **Highlight Safer session**

Reckitt's R&D MENA Director, Sana Khan, held an exciting session at GGSS Haji Wali Muhammad Yaqoob, Lyari, with 25 7th grade students. She spoke about becoming a scientist followed by her team conducting a stain removing workshop with the students. Two students from the STEMForward program also gave a poster presentation to their peers. Glimpses from the session can be viewed [here](#). More details can be found in the "Reckitt" section under "Corporate partnerships".

## Policy Deliverables

### Sindh

#### SE&LD Schools Orientation

The Partnerships and Sindh team were both involved in setting up and conducting in-person orientations as requested by DEOs and SE&LD leadership in the stocktake held in October. Orientations were conducted in Karachi Korangi, Karachi West, Karachi Central, Karachi East, Karachi Malir, and Hyderabad on two separate days due to the large number of schools. These sessions covered several schools that were already registered on the portal but had never received an orientation.

Weekly check-ins with district focal persons began in November after all DEOs designated a focal person for STEAM. The purpose of this exercise is to provide checkpoints between stocktake meetings to ensure steady progress of schools in the STEAM School journey through ownership and proactive leadership by district officials.

#### STEAM Awareness Session

Hyderabad STEAM awareness session was hosted by Sindh's top-performing STEAM partner school, Latifabad No 10, the first school to achieve level 8 in Sindh. This was an initiative of the Directorate of School Education, inviting all Hyderabad district schools as well as DEOs of other districts in the division to learn from the top performer about the program and get inspired to emulate them. Due to the significant number of registered schools in the district, the sessions were carried out in four batches.

The first session was conducted on 2nd November 2023 and was attended by the DSE Hyderabad, Deputy Director (QA), Deputy Director (Finance), Asst. Director Primary, Chief Headmaster, Coordinator of Science Exhibition, and Ghulam Asghar Memon. The session started with an elaborate introduction to "STEAM" and building on that, saw a range of activity demonstrations led by students and teachers for other schools to take inspiration from. Following that, the focal person also gave a walkthrough of the STEAM Pakistan website and covered reporting as well. More of these sessions are planned for December.

This was an entirely organic initiative with STEAM Pakistan being invited by the school's STEAM focal person and Deputy Director Schools, Hyderabad. The invitation letter to the event on 2nd November can be found [here](#).

#### Meeting with Sindh Teachers Education Development Authority (STEDA)

##### Training material sharing & module development

STEDA has agreed to share all training material on science, mathematics, and numeracy subjects that have been previously developed and approved. These will be reviewed by the

STEAM Pakistan team which will collate them to ensure coherence. The programme team will also be making recommendations for tweaking the existing training material for improvements and revisions.

### Virtual and in-person subject specific training modules

While STEDA does not maintain a specific training calendar, they are open to approving a calendar designed by STEAM Pakistan. These focused training sessions can be dedicated to areas which teachers typically find challenging during an academic year. On this front, the potential of collecting feedback from the field to identify challenging topics and other areas of interest from teachers across Sindh was briefly discussed.

### Certification modules

STEDA supports the idea of approving a Middle School Science Certification (MSSC) and a Middle School Math Certification (MSMC). STEDA is willing to adopt this as a "STEDA Certification". The responsibility for developing the modules for certification will lie with STEAM Pakistan which will then be reviewed by STEDA's subject specialists on two stages, first the content stage and then the implementation stage. Feedback will also be provided to the STEAM Pakistan team for any possible changes.

### Teacher Workshops

STEDA is open to collaborating with university professors to conduct subject-specific workshops on acquiring engaging pedagogical techniques for teachers. For instance, IBA Karachi or NED to host teachers for a two day workshop.

### STEAM Art Guides

STEDA has recommended engaging Art teachers as torchbearers for the STEAM Pakistan's Art guides. While these guides are designed for non-art teachers, STEDA's Executive Director believes it would be beneficial to involve passionate art educators with government-approved credentials.

## **Gilgit-Baltistan**

### **Development and review of examinations**

STEAM Pakistan has been actively involved in assisting the BEEGB in developing exam papers, aligning them with the table of specifications, and creating a marking scheme to ensure fairness in assessment. This included developing and reviewing the special examination papers for the snow-bounded regions of Gultari and Astore held in November. Additionally, the Programme also assisted in the same for annual examinations held in December.

## Development of model papers

STEAM Pakistan made significant contributions to the development of model papers which have been shared with schools across Gilgit Baltistan. The model papers are structured to assist the Board of Elementary Examination Gilgit-Baltistan (BEEGB), in effective preparation for the school's annual summative exams. These papers are an effort to move away from rote learning, encouraging critical thinking, problem-solving, and a deeper understanding of the subjects. The notifications including the papers for grade 5 and 8 can be accessed [here](#).

## Punjab

### Lahore Science Mela

The Lahore Science Mela (LSM) is an annual citizen science festival organized by the Khwarizmi Science Society (KSS) with its upcoming fifth edition planned on 28th and 29th October 2023. More details regarding STEAM Pakistan's role can be found in the "Lahore Science Mela (LSM)" section under "Learning". Like the previous year, STEAM Pakistan is proud to be a partial sponsor for this event.

Lahore Science Mela 2023 had over 200 performers presenting more than 3000 unique experiments, demonstrations, and performances from various fields, and attracted over 75,000 visitors over both days. Featuring a public planetarium and a large exploratorium with live experiments, indigenous inventions, puzzles, and demonstrations, the event was well-received, attracting people from all walks of life.

### Training of Master Trainers

A meeting was held on 8<sup>th</sup> November 2023, with the Special Secretary, School Education Department, Punjab and Additional Director General, Quaid-e-Azam Academy for Educational Development (QAED). As a result, it was decided that 216 Master Trainers from QAED will be trained by the STEAM Pakistan team. A letter notifying the same can be viewed [here](#) as per the following schedule:

Date	Time	District
15 <sup>th</sup> November 2023	9:30 am to 1 pm	Rawalpindi
16 <sup>th</sup> November 2023	9:00 am to 12 pm	Lahore
17 <sup>th</sup> November 2023	9:00 am to 12 pm	Multan

3-hour sessions were conducted where the programme representatives introduced STEAM Pakistan, the school journey and its components, the registration process, and school reporting. These master trainers will now be assigned schools for training the focal persons on behalf of the programme.

## Federal

### Matriculation exam analysis

STEAM Pakistan is undertaking data analysis of examination results of matriculation to enable school education departments to introduce data-driven, informed policy reforms. Programme is collaborating with Pakistan Institute of Education, the premier institution mandated to inform education policy in Pakistan, and Inter Boards Committee of Chairmen (IBCC), and its member Boards of Intermediate/Secondary Education (BISEs/BSEK). Using data from 27 education boards, the study conducted will be Pakistan's first in-depth analysis on the following metrics for matriculation examinations:

- Access: Availability of school and type of school
- Quality: School performance, teacher subject specialists, question paper analysis, and assessment framework
- Gender parity: Schools, performance, and geographic distribution
- Subject/topic performance: Science versus arts/humanities

In the past two months, the collaborating teams have gained permission/support from the Ministry of Federal Education & Professional Training, established the contract documents between the partners, finalized the research methodology, and reached out to prospective boards for the examination results data. A one-day workshop on data analysis techniques has been arranged for early December by the partner organizations for the research departments of the boards to provide technical assistance on analyzing data and gain access to the examination results.

### STEM classroom observation tool for head teachers

STEAM Pakistan facilitated the development and initial delivery of a classroom observation instrument for head teachers in FDE schools. The goal is to enable head teachers to conduct periodic observation and guide teachers in very specific areas (content, pedagogy, assessment, classroom engagement and others). This tool and its pilot in 25 schools currently will help inform FDE's monitoring and evaluation regime. Based on input from the pilot schools, the tool will be revised, with an interest from FDE to scale it to the remaining schools. More information on operational delivery of the pilot can be found in the learning section of the report.

## Partnerships

### International Skills Forum Asian Development Bank (ADB)

The Head of Partnerships presented the STEAM Pakistan programme and shared its evolving gender-transformative design as well as relevant learnings so far at a panel discussion on gender-transformative education for a climate resilient future at ADB's International Skills Forum in Manila. The social media post for the event by STEAM Pakistan can be accessed [here](#) highlighting the event..

### University Partnerships

#### Overview

To date, STEAM Pakistan has signed LoU with a total of 12 universities and successfully on-boarded 15 other universities. 8 universities are actively conducting STEAM activities with their partner schools in various regions of Pakistan. An LoU is expected to be signed with the remaining universities, NUST, COMSATS, Bahria University Karachi, and Habib University Karachi being in the highlight.

#### IBA Karachi

Dr. Shabana Nisar, a particle physicist and professor at IBA Karachi, has conducted multiple Maths Circles, including two in male schools, presenting a powerful gender-transformative experience to the schoolboys who were inspired by a woman leader in STEAM.

Two follow-up meetings with Dr. Danish Ali, focal person for IBA Karachi, were held to plan their STEAM activities for this term. Due to Dr Ali's packed teaching schedule, IBA Karachi's other planned activities have been delayed towards the end of the year. They are expected to conduct a Math Circles workshop for IBA students as well as to host an Open Day for multiple STEAM partner schools featuring math games for school children, an experiential Math Circles workshop for school teachers focused on self-identified topics where students struggle, as well as Safer sessions by non-Math professors.

#### Habib University Karachi

STEAM Pakistan had a meeting with Dr. Aatir Khan, Assistant Professor Social Development and Policy at Habib University, regarding a collaboration on a service-based learning course to be offered at Habib in the fall term as well as another course offered in the next (spring) term. Next steps include the university sharing an overview of the spring course and the Programme team sharing brief ideas that students could collaborate on, both in ongoing and new projects.

#### Indus Valley School of Art and Architecture (IVSAA)

Meetings were held with Tazeen Hussain, Communication Design Professor and Amima Sayeed, Continuing Education Programme Director to explore partnership with them for STEAM partner schools. Areas of partnership they showed interest in include designing the Programme's guides

as a CD final year project, IVSAA visits/tours for STEAM Pakistan's partner school students, inviting schools to their degree show, joint STEAM workshops with STEAM Pakistan at IVSAA, and Safer sessions by their students. In terms of next steps, they will invite STEAM Pakistan to the degree show and plan for other partnership avenues for the next term.

### **Lahore University of Management Sciences (LUMS)**

LUMS expanded its Math Circles outreach to Mardan, Peshawar, Sialkot, Islamabad. A variety of professors from the departments of mathematics, computer science, economics have started conducting sessions in STEAM Pakistan partner schools in the aforementioned cities. These sessions are in addition to continuing its Maths Circles in Lahore and Karachi. This expansion of Maths Circles beyond Lahore has been enabled with the support of Syed Babar Ali Foundation's seed funding. LUMS also conducted a Maths Circles workshop at BUIETMS Quetta for its young faculty members to establish a culture of Maths Circles in local government schools in the region. They plan to conduct more such workshops in Sindh and Gilgit Baltistan in the coming months.

### **NED University**

NED UET hosted a STEM workshop for a diverse audience including schoolchildren, including sessions on STEM by Duncan Thomas from STEM UK and on calligraphy. One of their STEAM Pakistan partner schools was also in attendance. The partnership team also presented its work as well including a music and science demonstration.

### **University of Sindh**

A meeting was held with the Director of Sindhology Museum, University of Sindh, Jamshoro regarding a partnership whereby students from the top-performing schools of Hyderabad can get a free guided tour of the museum. The partnerships team toured the museum having a collection of local culture, arts, crafts, and literature and discussed a potential collaboration with the Director. Next steps include setting up a conversation with the Registrar to take things forward.

### **Additional conversations**

Meetings were held with Namal and Quaid-e-Azam University who shared their plans for STEAM activities for the year as well as the support they needed from the Sindh Policy Unit.

### **Updates on activities in universities**

A major element of university partnerships is the range of activities that they undertake. These activities are designed to cultivate a close relationship between higher education institutions and schools. These could take the form of math circles, teacher baithaks, Safer sessions, university tours, field trips, boot camps and so on. Highlights from the last two months can be viewed below.

51 Government Schools Engaged  
 22 Sessions Conducted  
 1,087 Students Engaged  
 43 Faculty Members & Students  
 4 Organizations

25  
 Districts  
 Covered to  
 Date

## Corporate Partnerships

### Reckitt

STEAM Pakistan held an exciting session led by Reckitt R&D's MENA Director, Sana Khan at GGSS Haji Wali Muhammad Yaqoob, Lyari, with 25 7th grade students. This was both a Safer session as well as a STEAM Club activity which was also facilitated by other members of the R&D team at Reckitt who did a stain-removing formulation workshop. The session started off with a Safer session by Sana about how to become a scientist and the different kinds of scientists one can aspire to be. Two 9th grade students who had previously attended the STEMForward program, Maheen and Areesha, delivered a poster presentation about their time at Reckitt for their juniors. Following this, they formulated a variety of hygiene products with guidance and supplies from Reckitt.

Later, for a longer-term, broad-based collaboration, draft MoUs were shared and a meeting to discuss the same was held with both their R&D and legal representatives. Discussions also took place on Reckitt supporting STEAM beyond Safer for e.g. through longer-term mentoring, content creation on relevant topics, and sponsorship of STEAM competitions and prizes and will be presented internally to their senior management.

### Pakistan Cables

STEAM Pakistan, supported again by Pakistan Cables, took a second set of students on a STEAM Safari, a highly motivational and encouraging field trip to TDF MagnifiScience Center in Karachi. The trip was organized for 60 schoolgirls from SMB Fatima Jinnah Govt Girls School, the most active school across all six districts of Karachi for the month of September. More details can be found on STEAM Pakistan's Facebook posts [here](#) and [here](#). Pakistan Cables are also continuing their Safer sessions as part of their "70 at 70" campaign and have put out a call for volunteers for their second Safer cycle for this term.



### **Additional conversations**

- STEAM Pakistan met with GetzPharma and presented the programme, proposing various avenues of collaboration. They expressed their interest in supporting a variety of initiatives, with a keen interest to start with Safeer.
- After an initial meeting with Interloop, they are in the process of evaluating different features of our proposed collaboration and will respond after a discussion with their senior leadership.

### **Partnership with NPOs**

#### **Zindagi Trust**

As part of the MoU signed with Zindagi Trust for 10 art guides and 10 complementing videos, all the guides and videos have now been shared with STEAM Pakistan. These are uploaded on the STEAM portal and also shared with schools to include art activities. For the advocacy-related items in the MoU, further discussions will be held in the coming months.

## Communications

This section highlights social media developments, the progress made in creating strategic plans, expanding communications guidelines for programme impact and visibility.

### Strategies and branding

#### Earned media and influencer plans

The earned media plan is being developed with the support of an external communications expert; while the plan is being documented, STEAM Pakistan's outreach has already used its digital assets to engage and generate conversations around the programme outcomes and can be seen from the earned media numbers, i.e., the number of posts and content shared from non-STEAM digital assets.

### Social media

#### Statistics

October and November have seen strong growth on Twitter and LinkedIn, where followers have increased by 5% and 13%, and engagement by 79% and 23% respectively.

Below are the social media analytics for the months of October and November 2023:

Platform	Posts	Stories	Accounts Reached / Profile Visits / Reactions	Engagements / Impressions	Followers	New Followers	Sample Post
<a href="#">Facebook</a>	39	-	25.7K	16.2K	4,290	130	<a href="#">Link</a>
<a href="#">X (Twitter)</a>	48	-	-	14.1K	857	40	<a href="#">Link</a>
<a href="#">Instagram</a>	34	11	4,003	15.8K	1,569	128	<a href="#">Link</a>
<a href="#">LinkedIn</a>	42	-	509	11.8k	2,124	407	<a href="#">Link</a>
<a href="#">Threads</a>	-	-	-	-	189	20	-
Platform	Unique Visits		Total Visits		Hits		
<a href="#">Website</a>	15,955		24,738		1,097,095		

## Notable follows

Influential personalities/public figureheads who have followed STEAM Pakistan in the months of October and November are highlighted below:

Name	Role	Organization / Entity	Profile
The Leather Dude	Sustainability Consultant for Leather Industry, Creative Head & Founder	Essential Element Leather	<a href="#">Link</a>
Pakistan Foundational Learning Hub	Official Page - The Pakistan Foundational Learning Hub is a unit supporting the MoFEPT to improve foundational literacy and numeracy across Pakistan.	Ministry of Federal Education and Professional Training	<a href="#">Link</a>
Exploration - Cosmos to Classroom	Official Page - A registered organisation working for astronomy & space in Pakistan since 2016.	Exploration - Cosmos to Classroom	<a href="#">Link</a>

## Driving conversations

This section covers conversations about STEAM Pakistan led by influential personalities. Below are social media posts made by such corporations in October & November:

Name	Role	Organization	Link to Post
Dr. Majida Kazmi	Associate Professor, NED University of Engineering and Technology	NED University of Engineering and Technology	<a href="#">Link</a>
Namal University	Official Page	Namal University	<a href="#">Link</a>
Duncan Thomson	Lecturer/Programme Leader at University of the West of Scotland	University of the West of Scotland	<a href="#">Link</a>

## Additional updates

Moreover, STEAM Pakistan events and activities were covered on all platforms, including:

- Top performing schools' celebration with Secretary, MoFEPT
- Announcement of the FDE STEAM Competition 2024 which has kicked off with the School Round
- Inaugural STEAM Safari trip, in partnership with Pakistan Cables, to the TDF MagnifiScience Museum in Sindh
- World Teachers' Day celebration in schools
- World Space Week events and activities
- International Day of the Girl Child celebration
- STEAM Safer session dedicated to the International Week of Science and Peace
- The newest installment of the Pak Science Club Monthly Maker Challenge collaboration
- STEAM Safer sessions and activities conducted in partner schools

## Program Management

### Head teacher engagement

A draft concept note has been developed for head teachers' engagement, with plans to commence activities centered around the school leadership in the January-March 2024 quarter. The activities planned for this year will serve as a pilot for a broader engagement in the next grant cycle with a dedicated budget line for this audience expected to be included in the proposal for the 2024-25 grant period.

### Punjab Policy Unit

The Punjab policy unit has now been permitted a working office space for the team in SED's SDG Cell 4. Since the space is in the School Education Department, it allows for improved quality of correspondence, coordination, and collaboration with the department, attached departments, head teachers, and CEOs.

### Meetings with stakeholders

#### Malala Fund Global

Humaira Wakili, Chief Operating Officer, Malala Fund

The meeting was held on 27th November 2023 at the STEAM Policy Unit, with the project team giving programme overview and discussing future plans. Summary of the discussion is below:

- Diversifying donor investment into the programme for expansion
- Measuring and evaluating impact of various interventions
- Ways to leverage technology and engineering from "STEAM"
- Professional development of teachers

Sateer Ikpaahindi, Safeguarding Officer, Malala Fund

The meeting was held on 19th October 2023 with the STEAM Pakistan team giving a detailed presentation of the program components, and discussing safeguarding protocols.

#### Meeting with Amjad Khan, DG, FDE

##### October

- A meeting was held on analyzing grade 5 and grade 8 examination data of the FDE schools in further improving the pedagogy and SLOs in early grades.
- Meeting was held regarding the STEAM Journey at the FDE schools, and best-performing schools beyond level 7.

##### November

- Technical support was provided on engaging AEOs (Area Education Officers) in supervising the STEAM activities in their sectors.

## Monitoring and evaluation

After the baseline was conducted in August, the MEL team worked on data entry for all the components which was completed in November. A briefing prior to the first draft of the baseline report was given by the third party consultants on 11th October. The draft was submitted on 24th October which was reviewed by the Programme team, following which feedback was shared. The final report was submitted on 5th December.

## Stocktake meetings

**Federal:** No stocktake was held in the months of October and November.

**Sindh:** Second stocktake for SELD was held on 17th October with participation by select DEOs or their relevant STEAM focal persons, setting bi-monthly targets for activities by schools in their districts and committing to push their schools to achieve the same with support from the Policy Unit. Meeting minutes from the session can be viewed [here](#).

## Punjab

### First Programme Stocktake

On 13th October 2023, a STEAM Pakistan review meeting was conducted by the School Education Department, Punjab under the Special Secretary. Representatives from School Education Department, PMIU-PESRP, Quaid-e-Azam Academy for Educational Development (QAED), National Museum of Science and Technology (NMST), Punjab Curriculum and Textbook Board (PCTB) and Punjab Education Commission (PEC) were present. The notification can be found [here](#). Main Decisions of the meeting were as follows:

- A stocktake will be held in the coming weeks to review progress of the programme  
Director NMST would be the technical lead of the STEM programme
- QAED will be a part of the trainings and their master trainers will be trained by the STEAM Pakistan team
- The STEAM Pakistan team will meet with QAED to discuss teacher training.
- PMIU-PESRP will increase the number of schools in the STEM PC-I and submit it to SED before the upcoming stocktake
- The STEM Competition in Punjab will be held in February 2024 and the STEAM Pakistan team will share the plan for this with SED.

### Second Punjab Stocktake

A Stocktake was held in Punjab on 2<sup>nd</sup> November 2023, under the chairpersonship of Special Secretary, School Education Department, Punjab. Representatives from School Education Department, PMIU-PESRP, Quaid-e-Azam Academy for Educational Development (QAED), National Museum of Science and Technology (NMST), Punjab Curriculum and Textbook Board (PCTB) and Punjab Education Commission (PEC) were present. The notification for the meeting can be accessed [here](#). Main decisions were as follows:

- STEM Competition’s provincial event to be scheduled in April 2024. PAMS to share a revised plan considering this change.
- Training plan to be shared by PAMS with QAED; QAED to confirm date for the 2, one-day orientation sessions for the Master Trainers scheduled for November 7<sup>th</sup> and 8<sup>th</sup> or 8<sup>th</sup> and 9<sup>th</sup>.
- Orientation trainings of all 2700 schools under the STEM PC-I will be completed before the STEM Competition is held.
- All SED Punjab high schools to have STEM Clubs established by March 2024.
- QAED to be custodian of the STEM Clubs program at the end of the term of the PC-1
- Revised draft PC-1 to be shared with the Special Secretary’s office for review and finalization.

### Bi-monthly reporting regime

Institute-specific bi-monthly reporting has been initiated starting August 2023. Each month, three institutes will receive their reports, while three others will receive them the following month with this cycle repeating. The reports shared and upcoming schedule can be viewed below.

Reporting period: October 2023	
Institute	Link to Report
FDE	<a href="#">Link</a>
FGEI	<a href="#">Link</a>
SED - Punjab	<a href="#">Link</a>
Reporting period: November 2023	
Institute	Due Date
E&SED - Gilgit Baltistan	11th December
SE&LD	11th December
SEF	11th December

## Challenges and Mitigation Strategies

This section of the report will include critical challenges addressed during the two months, and the respective mitigation strategy for the challenge. Dedicated efforts from all stakeholders will be required for timely delivery of program components within the revised work plan.

Challenges	Mitigation Strategy
Initially low engagement in the monthly maker challenge (MMC) for schools	Started highlighting monthly maker winners and prize unboxing on social media and WhatsApp groups to motivate more schools to participate
There was a need for math-based content illustrations which was not being met	Hired an illustrator to create cricket based math questions and activities