

# Report on Innovation and STEAM Resource Center At Shree Janahit Secondary School



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# Table of Contents

<b>Background</b>	<b>1</b>
<b>Deliverables</b>	<b>1</b>
<b>Training Details</b>	<b>1-3</b>
<b>Feedback and Recommendations</b>	<b>3-4</b>
<b>Conclusions</b>	<b>5</b>

## Background

A Memorandum of Understanding (MOU) between **Karkhana Private Limited** and **Shree Janahit Secondary School** was signed on 4th May, 2022 (21 Baishak 2079) to deliver a STEAM orientation training session for 4 hours.

## Deliverables

This report consists of the deliverables that are related to the STEAM training sessions. A four hour workshop of STEAM was delivered by Mr. Surya Gyawali from Karkhana Pvt Ltd and the objective of this session was to:

- Make a joyful and meaningful classroom environment using karkhana science, Karkhana Make, Story and engineering kits.
- Understanding of the concepts such as STEAM and learning to deliver it to the classroom.
- Integrating design thinking cycle in the learning environment.
- Develop curiosity in Science with a hands-on learning approach.

## Training Details

The Training and orientation session took place on 4th may 2022 at Shree Janahit Secondary School at Dapcha village and this is what happened in our 4 hour short session.

- Session started with a quick sharing of what teachers already know about STEAM and the uses of karkhanas kits in the school
  - There were 3 school teacher from Shree Janahit Secondary where 2 of them were science teachers, they share that they have done a foo machine lesson from demo kits in their classroom
    - Teacher shared that they simply gave the materials and asked students to follow the lesson and make their machine
    - Teachers also shared that students were very engaged as it was there first experience of learning through play and also

had a chance to learn about simple machine using foo  
machine lesson

- After a brief sharing about their understanding about STEAM, I wanted to know their expectation from this orientation.
  - A lot of those answer were about how to MakerSpace tools and ways to use karkhana kits in schools classroom
- To give the feel of how to use kits in classroom we did a basic of electronic session were teacher were asked to use some leds, battery and asked them to use them
  - To give a feel on how to generate curiosity we asked question as how would we connect bigger battery with low voltage led
  - We also gave a few challenges about series and parallel connections and the way we can use these kits to help students understand concepts of science using the karkhana science kit.
- After the challenges and talk about how we can generate curiosity to students, teachers were asked if this way of teaching would help them in making their class more engaging and more understandable.
- Giving students materials is one way of conducting class so We shared story with engineering kits of karkhana
  - Teacher explored the kit and share materials that they have see and haven't see from story and engineering kit
  - After kit exploration we asked teachers to read a story book that is included in the kit
  - We share that the story book contains varieties of story which has problems and we can ask students to make solution after reading the story
    - We shared that this method of teaching as problem based learning experience
- After a quick break, we began exploring makerspace materials and share their uses
  - Generally we all know the use of hammer but we often forget about safety and type of hammer to be used for different tasks so we share teachers different type of hammer and their uses
  - We share that students must be constantly reminded about the safety precautions and also asked teacher to use gloves for this session

- After a brief sharing about all makerspace tools we share the used of hot glue gun and soldering iron
  - The electricity was fluctuating a lot so we could only give a demo to the teachers
  - Teachers also learned to use glue gun by using it in one of the torn shoes of the one teacher
- At the end of our session teacher were confident enough to share their learning to the class but they wanted more support so at last we share a google classroom to teacher were they will get access to all the videos about how to run session and materials uses
  - Because of constant fluctuation of electricity and hence fluctuation of the internet we were only able to share the classroom but couldn't give them experience of the classroom.

## Feedback and Recommendations

- We had 5 teacher from two different school but because of teachers other commitments, some teacher could not join the full session
  - We recommend teacher to clear their schedule before attending these type of session as it is once in a while session
- Participants did not get to experience the uses of hot glue gun and soldering iron because power cut off
  - These type of challenge might happen when conducting it to students so having a backup such as generator or inverter would help
- By the end of session teacher were eager to share their experience to their schools teachers
- Makerspace was well managed but some of the materials were damaged due to rain water
  - We would recommend keeping kits to some safe areas where there is less chance of getting in contact with water and direct sunlight.
- Some teachers were already prepared on what they wanted to ask in the session and were also taking notes on tips and tricks to take sessions.

## **Conclusion**

The main objective of our session was to give the teacher the feel of hands-on learning and using STEAM to make the classroom playful and joyful which is what we believe we delivered through our 4 hour interaction. Teachers were very positive about their experience and were also relating their time of learning and how students of lower grades are getting the same experience that they got when they were in their higher level of studies. Some of the teachers also share those kits will help them to make their classroom more engaging and create learning environment.