RAMAIAH
College of Arts, Science
& Commerce

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

REPORT ON GOVERNMENT SCHOOL VISIT

Visit to Government School of Kaiwara , Bangalore

Title : Visit to **GOVERNMENT SCHOOL OF KAIWARA**

Date: 04th March 2025

Venue: Government School of Kaiwara , Bangalore

Participants: I and II Year Bsc students

Co-ordinators:

Mrs Ramya Kumari (HOD)

Dr. Shashidhar Bharadwaj

No. of Participants: 12

Objective:

- **To demonstrate basic chemical reactions in a safe and controlled environment.**
- **To explain the underlying principles behind these reactions in a simple and understandable way for school students.**
- **To make learning chemistry more interactive and enjoyable for young learners.**
- **To inspire curiosity and encourage further exploration of science.**
- **To provide an opportunity for college students to share their knowledge and develop their communication and teaching skills.**

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On 4th March, 2025, the Department of Chemistry and Biochemistry , MSRCASC, organized an outreach activity to the Government School of Kaivara 2025. This report outlines the activities and outcomes of a chemistry demonstration session at Government School of Kaiwara , Bangalore . The primary objective of this initiative was to introduce fundamental chemical concepts to young students in an engaging and practical manner through live demonstrations of various chemical reactions. This outreach program aimed to foster an interest in science, particularly chemistry, among school students and bridge the gap between theoretical knowledge and real-world applications. A total of 12 students from the first and Second-year B.Sc. programs participated in this educational visit.

Prior to the visit, the Chemistry Club members:

Identified suitable chemical reactions: The reactions were selected based on their visual appeal, safety, and relevance to basic chemical concepts taught at the primary and middle school levels.

Gathered necessary materials and equipment: This included chemicals, glassware, safety goggles, gloves, beakers, test tubes, stirring rods, and other relevant apparatus.

Prepared detailed demonstration procedures: Each demonstration was planned with clear steps and explanations tailored for the target audience.

Coordinated with the school authorities: Communication was established to finalize the date, time, venue, and the number of participating students. Safety protocols and guidelines were discussed and agreed upon.

During there visit to Kaiwara School program Student demonstrated different chemical reactions

Golden Rain Demonstration

Demonstration: Mix two colorless solutions: lead(II) nitrate ($Pb(NO_3)_2$) and potassium iodide (KI). A bright yellow precipitate of lead(II) iodide (PbI_2) will form, appearing to fall like golden flakes through the solution.

Explanation: This demonstrates a precipitation reaction. When the two solutions are mixed, the lead(II) ions (Pb^{2+}) and iodide ions (I^-) react to form the insoluble lead(II) iodide, which separates out of the solution as a solid precipitate. The balanced chemical equation is:

$Pb(NO_3)_2(aq) + 2KI(aq) \rightarrow PbI_2(s) + 2KNO_3(aq)$

Titration

Demonstration: Slowly add a solution of known concentration (the titrant) from a burette to a solution of unknown concentration (the analyte) in a flask, usually with an indicator. Observe for a color change signaling the endpoint.

Explanation: Titration is a technique used to determine the unknown concentration of a solution by reacting it with a solution of precisely known concentration. The measured volume of titrant needed to reach the endpoint allows for calculation of the analyte's concentration.

Elephant Toothpaste

Demonstration: Quickly mix concentrated hydrogen peroxide, dish soap, and a catalyst (like potassium iodide or yeast solution) in a narrow container. Observe a rapid production of foamy "toothpaste" overflowing the container.

Explanation: This demonstrates a rapid decomposition of hydrogen peroxide catalyzed by the added substance, producing oxygen gas. The soap traps the gas, creating a large volume of foam that is pushed out of the container.

DNA Extraction

Demonstration: Gently mash a soft fruit (like a strawberry) in a bag with salt solution. Add detergent, mix gently, then add cold alcohol. Observe a cloudy white substance (DNA) precipitate out at the alcohol-water interface.

Explanation: This demonstrates a basic DNA extraction by breaking open cells (mashing), dissolving membranes (detergent), separating DNA from proteins (salt), and making the DNA visible by precipitating it in cold alcohol.

Chemical Chameleon Reaction

Demonstration: Add a solution of potassium permanganate (purple) to a basic sugar solution. Observe a series of color changes, typically from purple to blue, then green, yellow, and finally colorless.

Explanation: This demonstrates a redox reaction where potassium permanganate

(Mn in +7 oxidation state) is progressively reduced by the sugar in a basic environment, passing through intermediate manganese oxidation states that exhibit different colors.

Polymers Reaction

Demonstration: Mix two solutions, such as sodium silicate ("liquid glass") and copper(II) chloride solution. Observe the formation of long, colorful, worm-like strands of insoluble metal silicate polymers precipitating out.

Explanation: This demonstrates a **polymerization reaction** where small monomer units (silicate ions) link together to form long chains (the metal silicate polymer) that are insoluble in the solution and thus become visible.

Throughout the demonstrations, the college students actively engaged with the school students by:

Asking questions: Encouraging them to predict outcomes and explain their observations.

Providing clear and concise explanations: Using age-appropriate language and relating the concepts to everyday life.

Ensuring safety precautions: Emphasizing the importance of wearing safety goggles and handling chemicals responsibly.

Answering their queries: Addressing the questions raised by the school students with patience and clarity.

The chemistry demonstration session at Government School of Kaiwara , was a successful endeavor in promoting science education and fostering a love for chemistry among young students. The enthusiasm and engagement displayed by the school students, coupled with the dedication of the college student volunteers, highlight the value of such outreach initiatives. We believe that this program has contributed to making learning science more accessible and enjoyable, and we look forward to organizing similar events in the future to continue inspiring the next generation of scientists.

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OUTCOMES:

- The school students showed significant interest and enthusiasm during the demonstrations. Their active participation and inquisitive questions indicated a positive engagement with the subject matter.
- The visual and interactive nature of the demonstrations helped in making abstract chemical concepts more tangible and understandable.
- The college students gained valuable experience in communicating scientific ideas to a younger audience and fostering an interest in science.
- The teachers from the government school expressed their appreciation for the initiative and its potential to enhance science learning for their students.
- The demonstrations provided a practical application of the theoretical knowledge acquired by both the college and school students.

Co-ordinators :

Mrs. Ramya kumari (HOD)

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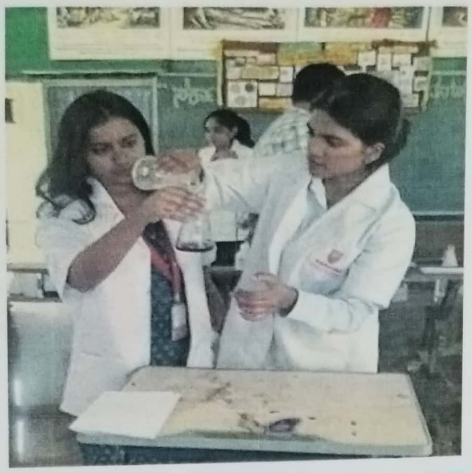
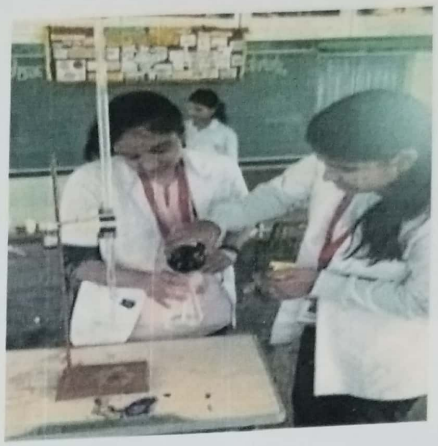
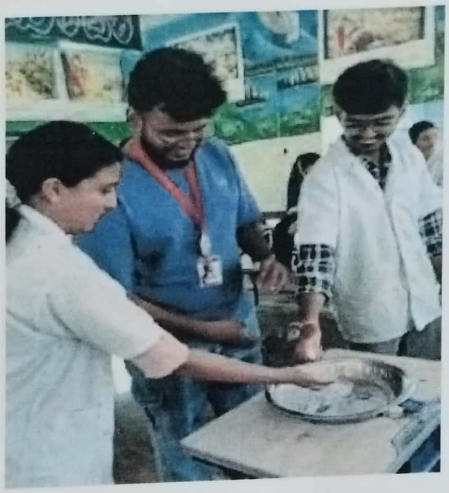
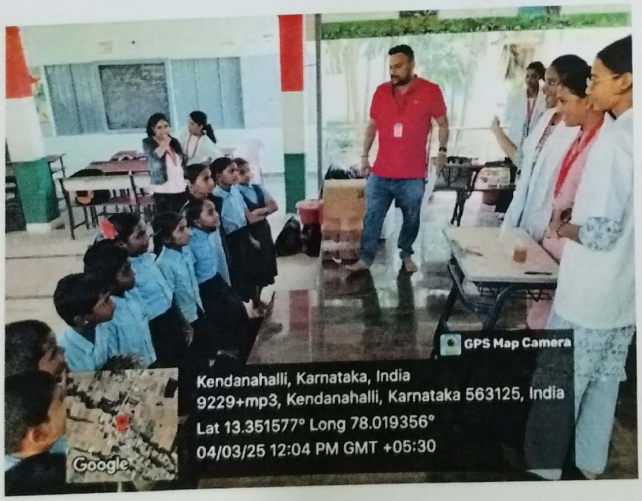
GLIMPSE OF THE VISIT :









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Department of chemistry and biochemistry

Visit to Government School of Kaiwara , Bangalore by 1 and 2 year BSC students on 4th March 2025

Attendance sheet (04/03/2025)

Sl.No	Register No.	Student name	Signature
01	U18EV23S0047	Chinmaye B M	
02	U18EV23S0046	Vasuki B V	
03	U18EV23S0189	Musfira Ayman	
04	U18EV23S0386	K Amoolya	
05	U18EV23S0102	Surya	
06	U18MB24S0037	Pratiksha G P	
07	U18MB24S0014	Nikita Sagar	
08	U18MB24S0015	Yuktha M P	
09	U18MB24S0024	Varsha Girish	
10	U18MB24S0075	Deepa R	
11	U18MB24S0013	Tanmayee Sivakoti	
12	U18MB24S0093	Thejaswini C N	