



D.B.M.S. College of Education

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Affiliated to Kolhan University, Chaibasa & J. A. C., Ranchi, Jharkhand

Road No. 23, Farm Area, Kadma, Jamshedpur-831005 | Phone : 2309097

E-mail : dbms.edu23@gmail.com | Website : dbmscollege.in

STUDENT DEVELOPMENT PROGRAMME

REPORT

Title of the Programme	: One Month Workshop on Curiosity Science Station (Hands- On Activities, Fun Experiments and Scientific Thinking)
Organizing Cell	: IQAC of D.B.M.S. College of Education
Duration	: 1 Month (April, 2025)
Venue	: College Campus
No. Of Participants	: All Students

CONTEXT

During the month of April 2025, Semester 1 students at D.B.M.S. College of Education actively participated in a series of science experiments conducted by the IQAC Cell under the concept of Curiosity **Science Station**. The primary aim of these activities was to promote hands-on learning and reinforce core scientific concepts through observation-based and interactive experiments.

The experiments focused on a range of fundamental physics phenomena, including heat transfer, refraction, centrifugal force, and atmospheric pressure. By engaging directly with these concepts through visual demonstrations and practical tools, students developed a deeper understanding of the principals involved and enhanced their analytical and observational skills.

These sessions exemplified the importance of experiential learning in science education, fostering curiosity, critical thinking, and a genuine interest in scientific exploration.



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OBJECTIVES

- To visualize and understand scientific concepts through working models, experiments, and diagrams.
- To encourage active participation and curiosity among students.
- To improve observation, reasoning, and analytical thinking skills.
- To connect theory with real-life applications for deeper understanding.
- To promote teamwork and interest in scientific exploration.

SCIENCE EXPERIMENT PRESENTATION

SCHEDULE – APRIL 2025

S.NO.	DATE	STUDENTS	EXPERIMENT TOPIC
1	01 April	Rohit Poddar, Nikky Tamsoy, Jagriti Singh	Colour Changing Experiment
2	02 April	Varsha Srivastav, Sweta Kumari	Refraction of Light
3	03 April	Manisha Kumari, Priya Kumari, Nilu Kumari, Parimal Paul	Acid-Base Reaction
4	04 April	Sweta Kumari	Static Electricity
5	05 April	Ankita Kumari, Shoumini Das	Density of Water
6	09 April	Nancy Anand, Manisha Das, Anandita Maity	Oxidation
7	10 April	Sarandeep Kaur, Jyoti Kumari, Nikita Kumari	Smoke Bubble Experiment
8	11 April	Sushmita Ghatuary, Rupa Kumari	Glitter Germs



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9	16 April	Trisha Sarkar, Reema Roy, Tanushree Saha	Lava Lamp
10	21 April	Siddhi Jalan, Nisha Kumari	Air Pressure
11	23 April	Manju Kumari Mahato, Anupriya Jha, Ayush Prasher	Vapor Ignition on Water Surface
12	24 April	Nisha Kumari, Priya Poddar	Density of Water
13	25 April	Insha Siddiqui, Eliza Samad	Rainbow Experiment
14	25 April	Kumari Shivani Tudu, Preeti Burh, Asai Kalundia	Electric Charge Generation Experiment
15	25 April	Pramila Kumari, Pranita Kumari, Nupur Kumari	Surface Tension Experiment
16	26 April	Muskan Kumari	Specific Heat Measurement Experiment
17	28 April	Rohit Poddar	[Experiment not specified]
18	29 April	Arpita Paul, Manisha Kumari	Refraction of Light
19	29 April	Anushka Kumari Singh, Ruchika Mishra	Lemon and Highlighter Experiment
20	30 April	Shivani Kumari, Neha Kumari Patel, Puja Kumari	Density of Water, Capillary Action Experiment
21	30 April	Shristy Kumari, Amrita Kaur	Invisible Fire Experiment
22	30 April	Surbhi Kumari, Nilu Kumari, Baby Rani Jana	Centrifugal Force
23	30 April	Kavita Sundi, Mahima Nag	Air Pressure Experiment
24	30 April	Namanti Kandulna	Gravitational Force



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DAY-1

EXPERIMENT 1: Colour changing acid-base experiment

Participants: Jagriti Singh, Nikky Tamsoy, Surbhi Kumari and Rohit Poddar

Objective: To investigate how different levels of pH affect different solutions. It is a fun and educational demonstration of acid-base chemistry.

Materials Required:

- Lemon,
- Turmeric powder,
- Detergent (a colour-changing or pH-sensitive detergent),
- Water,
- Glass

Procedure:

- Mix turmeric powder with water
- Mix detergent powder
- Then add lemon juice and observe another colour change

Results:

- The lemon juice has a pH of around 2-3 making it acidic
- The detergent has a pH of above 7 making it basic
- The turmeric solution changes colour in response to the pH changes.

Science behind it:

The colour changes occur due to the acid-base reactions and the properties of turmeric.

Conclusions: Findings confirmed the expected behaviour of acids and bases, providing valuable insights into their properties and reactions



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PHOTOS OF EXPERIMENT-1





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DAY- 2

EXPERIMENT 2: Refraction of light

Participants: Varsha Srivastav, Sweta kumari

Objective: To observe the bending of light as it passes from one medium to another.

Materials Required: A transparent glass, A paper, A pen, And Water.

Procedure: A transparent glass is filled with water. A paper with two arrows pointing in opposite directions (left and right) is placed behind the glass. Upon viewing the arrows through the water-filled glass, their direction appears reversed

Results:

- When the arrow-marked paper is placed behind the water-filled glass and observed from the front, the arrows appear to reverse direction.
- The left-pointing arrow appears to point right, and the right-pointing arrow appears to point left.
- This reversal is clear and consistent when observed through the centre of the curved glass.

Science Behind It:

This phenomenon occurs due to **refraction of light**—the bending of light as it passes from one transparent medium to another with a different refractive index.

- **Refractive Index Differences:** Air, glass, and water each have different refractive indices. When light passes from air to glass, and then from glass to water, it bends at each interface.
- **Convex Lens Effect:** The curved surface of the glass acts like a **convex lens**, inverting the image. As light rays bend and converge, they create a virtual image on the opposite side of the actual object.



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- This causes the arrow to **appear flipped** due to the **realignment of light paths** and image formation properties of convex lenses.

Conclusions:

The experiment demonstrates the fundamental property of light refraction and how lenses (like a curved glass of water) can manipulate images. It visually proves that **light changes direction** when passing through materials with different optical densities. The apparent reversal of the arrows highlights how the **path of light is altered** due to refraction, providing a simple yet powerful illustration of this key concept in physics.



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DAY- 3

EXPERIMENT 3: Colour Changing Cabbage (Acid-Base) Reactions

Participants: Priya kumari, Parimal Paul, Manisha Kumari, Nilu Kumari

Objective: To study acids, bases, and the concept of PH.

Materials required: Red cabbage leaves, Water, a Pot or a blender, a Strainer, Glasses or bowls, a Variety of substances to test (vinegar, lemon juice, baking soda, etc.)

Procedure:

- Prepare the Cabbage Indicator: Grate a small red cabbage. Put the grated cabbage into a large bowl or pot.
- Boil a pot of water. Use caution when handling the boiling water. Pour the boiling water into the bowl with the cabbage pulp until the water just covers the cabbage.
- Leave the cabbage mixture steeping, stirring occasionally, until the liquid is room temperature. This may take at least half an hour. The liquid should be reddish purple in colour. Place a strainer over another large bowl or pot and pour the cabbage mixture through the strainer to remove the cabbage pulp. Press down on the pulp in the strainer, such as by using a large spoon, to squeeze more liquid out of the pulp.
- In the bowl, we now have a clear liquid that will either be purple or blue in colour. (It should look darker after the pulp is removed.) This will be your indicator solution.

Test with Various Solutions:

- Set up the test: Place five glasses or small dishes side by side.
- Pour the indicator: Pour a small amount of the red cabbage indicator liquid into each glass or dish.



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Test solutions:

Add a few drops of lemon juice, vinegar, water, and baking

Soda and bleaching powder to different glasses to observe

The colour changes.

OBSERVATION:

Substance	Colour Change	Acidic/Basic	pH Level
Lemon Juice	Bright red / Pinkish red	Acidic	Below 7
Vinegar	Pink / Pinkish red	Acidic	Below 7
Water	Purple (No change)	Neutral	7
Baking Soda	Green / Blue	Basic	Above 7
Bleaching Powder	Yellow / Green	Basic	Above 7

Result:

The red cabbage colour-changing experiment demonstrates the pH indicator properties of anthocyanin, a pigment found in red cabbage.

When red cabbage juice is mixed with acids, it turns pink or red; with bases, it turns blue or green; and with neutral solutions, it remains

purple. This experiment is a fun and accessible way to explore the concepts of acids and bases, as well as demonstrate the role of indicators in chemistry.

Science Behind It:

The red cabbage experiment is a classic demonstration of **acid-base chemistry** using a **natural pH indicator**. Red cabbage contains a pigment called **anthocyanin**, which changes colour depending on the **pH level** of the solution it is in. Anthocyanins are **flavonoid compounds** that react visibly to the hydrogen ion concentration (H^+) in substances.



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Conclusion:

The colour-changing cabbage experiment demonstrates that red cabbage juice can be used as a natural PH indicator to test the acidity or basicity of various substances.

This experiment shows that:

1. Acids (like lemon juice and vinegar) turn the juice red or pink.
2. Bases (like baking soda and bleaching powder) turn the juice green or yellow.
3. Neutral substances (like water) have little to no effect on juice's colour.

This experiment provides a fun and educational way to learn about pH levels, acids, and bases, and the properties of anthocyanin, the pigment responsible for the colour change.



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DAY- 4

EXPERIMENT 4: Static Electricity Generation Through Friction

Participants: Sweta Kumari

Objective: To demonstrate the generation and discharge of static electricity through friction and observe the resulting electric shock when contact is made

Materials required: Chair, Woollen cloth

Procedure:

1. Place a non-metallic chair (preferably plastic) in the centre of the room.
2. Have one person sit on the chair, ensuring:
 - o Their feet are lifted off the ground.
 - o They are wearing rubber-soled shoes to minimise grounding.
3. Vigorously rub the back of the chair with a woollen cloth for about 1–2 minutes.
4. After continuous rubbing, ask another person to touch the person sitting on the chair.
5. Observe and record the reaction during the contact.

Results:

- The person who touches the seated individual often feels a small electric shock or tingling sensation.
- Sometimes, a tiny spark may also be visible at the point of contact, especially in dim lighting.

Science Behind It:

This experiment illustrates the concept of **static electricity**, which is the buildup of electric charge on the surface of an object.



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- When the woollen cloth is rubbed against the plastic chair, **electrons are transferred** due to **friction**, a phenomenon known as **triboelectric charging**.
- The person sitting on the chair becomes **electrically charged**, especially since their body is insulated from the ground by rubber soles.
- When another person (who is grounded or at a different potential) touches them, the **accumulated charge is suddenly discharged**, creating a small electric shock.
- This is an example of **electrostatic discharge (ESD)**.

Conclusions:

This experiment effectively demonstrates the generation of static electricity through friction and the sudden discharge that occurs when a charged object comes in contact with a conductor. It helps students understand key principles of electrostatics, such as charge transfer, insulation, and electric potential difference. The shock experienced reinforces the real-world impact of electrostatic phenomena



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PHOTOS OF EXPERIMENT-4



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04/04/2025 08:10 AM GMT +05:30



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DAY- 5

EXPERIMENT 5: Density of Water

Participants: Ankita Kumari, Shoumini Das

Objective: To observe how the density of water affects the buoyancy of an object and to demonstrate the scientific principle through a simple and relatable example.

Materials Required: Two transparent glasses, Plain tap water, Table salt, two lemons, Spoon for stirring

Procedure.

1. First, one glass was filled with plain tap water. A lemon was gently dropped into it. Observation: the lemon sank to the bottom.
2. In the second glass, plain water was again filled, and a significant amount of salt was added and stirred until fully dissolved.
3. A second lemon was dropped into the salt water.

Results: The lemon floated on the surface.

Science Behind it:

This experiment demonstrates the concept of density. Plain water has a lower density than a lemon, which is why the lemon sinks. When salt is added to the water, it increases the water's density. Once the density of salt water becomes greater than that of the lemon, the lemon begins to float. A real-world example of this phenomenon is the Dead Sea, where the water is so salty (dense) that people can float effortlessly on its surface.

Conclusion:

The experiment successfully showed how increasing the density of water using salt can cause objects that usually sink to float instead. This simple yet effective demonstration deepened our understanding of buoyancy and density.



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DAY -6

EXPERIMENT 6: Invisible ink with lemon juice – Exploring Oxidation

Participants: Nancy Anand, Manisha Das, Anandita Maity

Objective: To demonstrate how lemon juice can be used as invisible ink and to explore the concept of oxidation through a simple heat reaction.

Materials Required: Lemon Juice, White Paper, Cotton Swap, Heat, Electric Press

Procedure:

1. Dip a cotton swab into lemon juice.
2. Use the swab to write a secret message on a clean white sheet of paper.
3. Allow the paper to dry completely. The written message becomes invisible to the naked eye once dry.
4. After drying, gently iron the paper using a household iron or place it near a heat source.
5. Observe the paper as the heat is applied.

Result:

- As the paper is heated, the areas where lemon juice was applied gradually turn brown.
- The previously invisible message becomes clearly visible in a brownish hue.

Science Behind It:

Lemon juice is a mild acid that contains organic compounds. When applied to paper, these compounds remain colourless while wet and after drying. However, upon heating:

- **Oxidation** occurs — a chemical reaction in which the organic compounds in the lemon juice react with oxygen in the air.



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- Heat accelerates this reaction, causing the compounds to break down and change colour.
- The affected areas turn brown, revealing the hidden message

Conclusion:

We successfully revealed a hidden message using lemon juice and heat.

This simple experiment showed how oxidation can be used to create invisible ink and provided insight into basic chemical changes.



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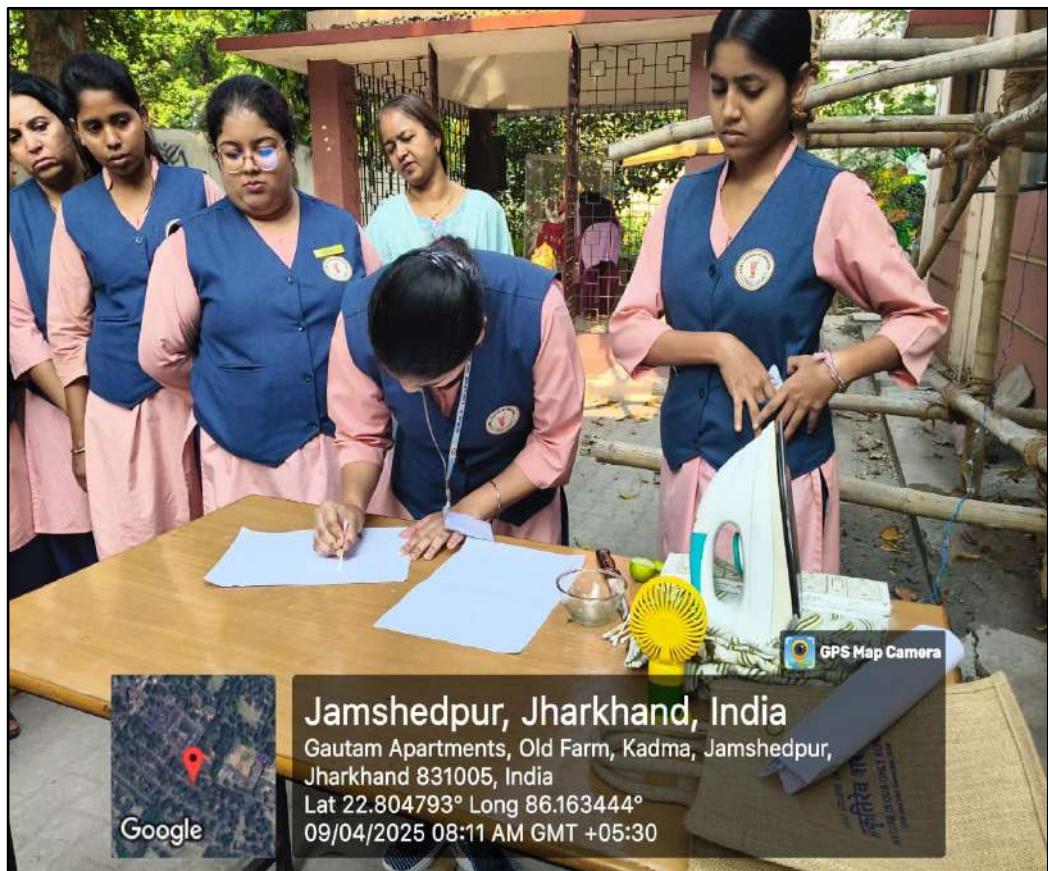
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DAY -7

EXPERIMENT 7: Smoke Bubble with Shampoo & Sugar

Participants: Jyoti kumari, Nikita kumari and Sharandeep Kaur

Objective: To create smoke-filled bubbles using simple household items and understand the science behind bubble formation and smoke entrapment.

Materials Required: Clinic Plus shampoo (or any available shampoo), Granulated sugar, Water, Straw (or bubble wand), Incense stick (for smoke), Matchstick or lighter, Bowl for mixing, Plate or tray

Procedure:

1. Mix 2 tablespoons of shampoo with 1 tablespoon of sugar in a bowl.
2. Added half a cup of water and stirred the mixture until the sugar dissolved.
3. Lit an incense stick to produce smoke.
4. Dipped a straw into the bubble solution.
5. Collected some smoke into the straw from the incense stick.
6. Blew a bubble from the smoke-filled straw and let it fall gently onto a plate.

Results:

The bubbles appeared white and cloudy instead of clear because the smoke got trapped inside. They floated and looked magical, but they were formed using simple science.



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Science Behind it:

- Surface Tension: Shampoo reduces water's surface tension, allowing bubbles to form.
- Sugar's Role: Sugar strengthens the bubble film, making it more stable and long-lasting.
- Smoke Entrapment: The smoke from the incense stick is carried inside the bubble, making it visible. It demonstrates how gas can be trapped inside a liquid film.

Conclusion:

This experiment shows how a combination of air, soap, and sugar can create strong bubbles and how smoke particles can be held inside. It is a fun and educational way to learn about gas behavior and liquid surfaces.

PHOTO OF EXPERIMENT- 7





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DAY-8

EXPERIMENT 8: LAVA LAMP

Participants: Trisha Sarkar, Reema Roy, Tanushree Saha

Objective: To demonstrate the concept of density and chemical reaction by creating a homemade lava lamp using easily available kitchen ingredients.

Materials Required: Refined Oil, Vinegar, Baking Soda, Food Colouring (any bright colour), Transparent plastic or glass bottle. Spoon

Procedure:

1. A clean transparent bottle was taken and filled about $\frac{3}{4}$ with refined oil.
2. In a separate cup, vinegar was mixed with a few drops of food colour.
3. This coloured vinegar was then poured slowly into the oil-filled bottle.
4. A spoonful of baking soda was added to initiate the reaction.
5. As soon as the baking soda touched the vinegar, bubbles of carbon dioxide gas formed, causing the coloured vinegar to rise through the oil in blobs – just like a lava lamp

Science behind it:

Density Difference: Oil is less dense than vinegar, so it floats on top.

- Chemical Reaction: The baking soda (a base) reacts with vinegar (an acid) to produce carbon dioxide gas, which creates the bubbling lava effect.

Results:

- Vibrant blobs of coloured vinegar moved up and down in the oil.
- The reaction continued for several minutes, and adding more baking soda revived the effect.



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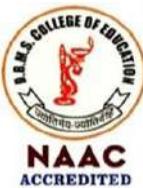
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Conclusion:

The experiment was a fun and visual way to understand density and acid-base reactions. It also showcased how household materials can be used to explain complex scientific principles.

PHOTOS OF EXPERIMENT- 8





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DAY- 9

EXPERIMENT 9: Rising Water Level Due to Candle Combustion

Participants: Nisha Kumari and Siddhi Jalan

Objective: To show how atmospheric pressure changes as oxygen burns inside the glass compared to atmospheric pressure outside the glass surface.

Materials Required: Candle, matchstick, colored water, plate and glass

Procedure:

1. Take a flat plate and place it on a stable surface.
2. Put a short candle at the center of the plate and fix it upright using melted wax or adhesive.
3. Pour some coloured water into the plate (just enough to form a shallow pool around the candle).
4. Light the candle carefully.
5. Once the candle is burning steadily, cover it with a transparent glass or jar, ensuring the rim is submerged in the water.

Result:

After a few moments, the candle flame dims and eventually goes out. Once the flame extinguishes, the coloured water begins to rise inside the glass and reaches a noticeably higher level than before.

Science Behind It:

This phenomenon can be explained through the principles of **combustion, gas expansion and contraction, and air pressure**:

- When the candle burns, it consumes **oxygen** inside the glass and produces **carbon dioxide** and water vapor.



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- Initially, the heat from the flame causes the gases inside the glass to expand slightly.
- As the flame goes out due to lack of oxygen, the air inside begins to **cool**.
- Cooling leads to **contraction of the gases**, creating a **partial vacuum** (lower pressure) inside the glass.
- The **higher atmospheric pressure** outside the glass pushes the coloured water up into the lower-pressure space inside the glass to equalize the pressure difference.

Conclusion:

This simple experiment visually demonstrates how combustion uses up oxygen and affects air pressure. The rising water level inside the glass shows the effect of pressure difference caused by the cooling and contraction of gases after the flame goes out. It is a clear and effective way to understand the role of air pressure in natural phenomena.



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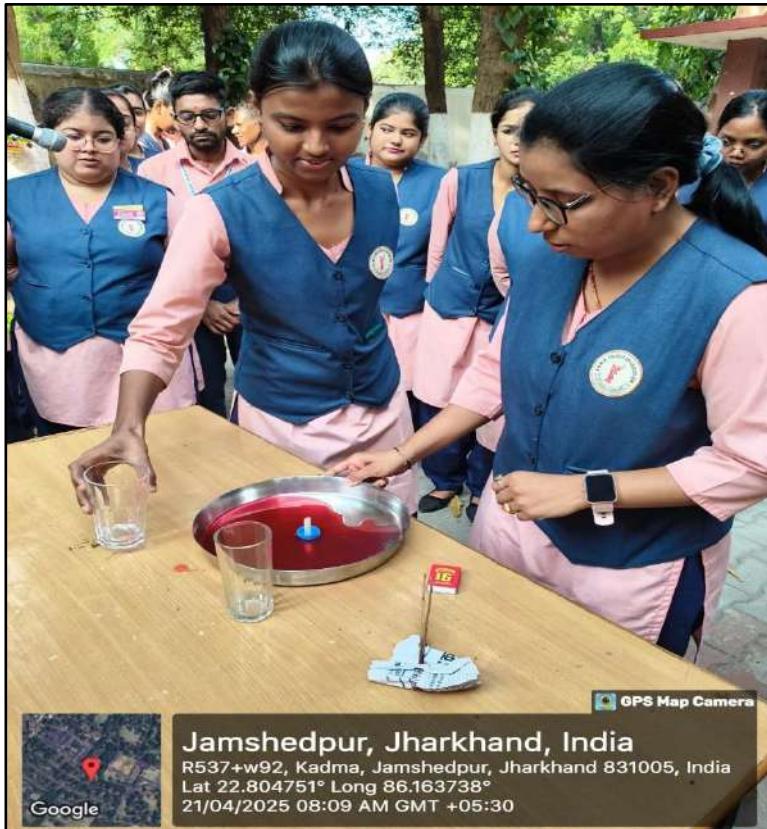
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DAY- 10

EXPERIMENT 10: The ignition of vapours on water surfaces

Objective: To demonstrate the ignition of vapour from a volatile liquid (nail polish) floating on a water surface.

Materials Required: A bowl of water, Nail polish (containing volatile solvents like ethyl acetate or butyl acetate), A lighter or matchstick, Safety equipment (goggles, gloves, fire extinguisher)

Procedure:

1. Fill a bowl with water and place it on a stable, non-flammable surface.
2. Carefully pour a few drops of nail polish onto the surface of the water.
3. Allow a few seconds for the vapours to accumulate.
4. Using a matchstick or lighter, carefully bring a flame close to the vapour cloud just above the water surface.
5. Observe the brief ignition of vapour without the nail polish or water catching fire.
6. Safety Precautions
 - ✓ Experiment in a well-ventilated area or under a fume hood.
 - ✓ Keep a safe distance and use appropriate personal protective equipment.
 - ✓ Have a fire extinguisher or water source nearby in case of emergency.

Results:

- A small flame or "flash" is observed as the vapours ignite.
- The water remains unburned, acting as a heat sink and a safety barrier.
- Ignition of Vapour on Water Surface: Nail Polish Experiment



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- The nail polish layer may appear slightly disturbed but does not sustain combustion.

Science Behind It:

This experiment demonstrates the **flammability of volatile organic compounds (VOCs)**, which are present in nail polish. Nail polish contains **highly volatile solvents** like **acetone, ethyl acetate, and butyl acetate**. These substances **evaporate quickly**, forming a cloud of **flammable vapours** just above the surface of the water.

When a flame is brought near this vapor cloud:

- The vapours **ignite briefly**, producing a small flash of fire.
- The **nail polish itself and the water do not catch fire** because:
 - The combustion occurs only in the vapor phase.
 - Water acts as a **heat sink**, absorbing heat and preventing sustained combustion.
 - The actual liquid nail polish is partially submerged and does not reach its ignition temperature.

This experiment highlights key scientific concepts such as:

- **Volatility:** How quickly a liquid turn into vapor.
- **Flash point:** The lowest temperature at which a liquid produces enough vapor to ignite in air.
- **Flammable vapours vs. flammable liquids:** It is often the **vapours**, not the liquid, that burn.

Conclusion:

The experiment illustrates how volatile vapours can form flammable mixtures with air, even when



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floating on water. It emphasizes the importance of handling flammable liquids with caution, especially near open flames.

PHOTOS OF EXPERIMENT -10





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DAY- 11

EXPERIMENT 11: Difference in Density

Participants: Nisha Kumari and Priya Poddar

Objective: to show the difference in density of normal water and salt water by dropping “red dye” into it.

Material required: Two glasses, water, salt, red color

Procedure:

First, we take two glass of normal water then mix some salt in one of the glass and stir till it get dissolved. In the second glass, plain water was again filled, and add food color on that.

Results:

When red dye was added, it spread quickly in the plain water, showing low density. In the salt water, the dye stayed on the surface for some time before slowly mixing, indicating higher density of salt water compared to plain water.

Science behind it:

This experiment demonstrates the concept of density. Plain water has a lower density than a food color easily mixed. When salt is added to the water, it increases the water's density. Once the density of salt water becomes greater than that of the food color then color begins to float. A real-world example of this phenomenon is the Dead Sea, where the water is so salty (dense) that people can float effortlessly on its surface.

Conclusion:

The experiment successfully showed how increasing the density of water using salt can cause objects that usually sink to float instead. This simple yet effective demonstration deepened our understanding of buoyancy and density.



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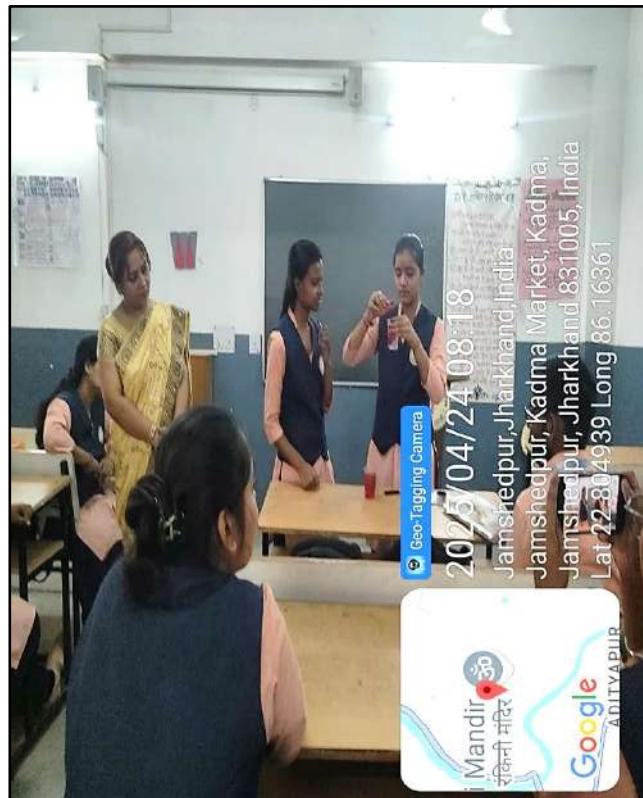
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PHOTOS OF EXPERIMENT- 11





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DAY – 12

EXPERIMENT 12: Surface Tension of Water

Participants: Pramila Kumari, Pranita Kumari, Nupur Kumari

Objective: To investigate and demonstrate the conditions under which a jar can be inverted without its contents spilling out.

Materials required: Transparent glass jar (with a wide mouth), Water or small objects like beads, Strainer made of plastic or metal, Stopwatch (optional, for timing experiments), Towel or tray (to catch spills)

Procedure:

- Fill the jar completely with water (or beads) up to the brim.
- Place a strainer on the mouth of the jar, ensuring it is evenly covered.
- While holding the strainer in place, invert the jar slowly.
- Slowly remove your hand supporting the strainer.
- Observe whether the contents remain in place or fall out.

RESULTS:

- In many cases, especially with a completely full jar and a tight seal, the strainer stays in place due to atmospheric pressure.
- The water does not spill out because the air pressure acting on the card is greater than the pressure of the water inside.
- With mesh, surface tension and pressure differences help hold the liquid in, though this is more effective for small amounts.

Science Behind It:

This experiment demonstrates the principles of **air pressure, surface tension, and cohesion**. When the jar is completely filled and inverted with the strainer covering its mouth, several forces come into play.

1. **Atmospheric Pressure:** The air pressure outside the jar pushes upward against the strainer with more force than the pressure of the water



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pushing down. This difference in pressure helps keep the water (or beads) from falling out.

2. **Surface Tension:** Water molecules stick together due to cohesive forces. At the opening, the surface tension of the water interacts with the fine mesh of the strainer, creating a "seal" that resists breaking apart, thus preventing the water from escaping.
3. **No Air Entry:** Because the jar is completely full and sealed by the strainer, air cannot enter the jar to replace the water. Without an equal volume of air entering, water cannot easily fall out, as it would create a vacuum.

These forces together create a situation where the contents remain suspended inside the inverted jar, defying what we might expect based on gravity alone.

Conclusion:

The activity effectively demonstrates how **air pressure** and **surface tension** can prevent liquids from spilling even when a jar is inverted. It shows that under certain conditions—like a full jar, a tightly placed strainer, and a stable hand—the outside air pressure is sufficient to support the weight of the water or beads inside the jar. This simple experiment helps students visualize key scientific concepts and the hidden forces acting around us in everyday life



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PHOTOS OF EXPERIMENT-12



2025/04/25 08:21

Jamshedpur, Jharkhand, India
R537+W92, Kadma, Jamshedpur, Jharkhand 831005, India.
Lat 22.804897 Long 86.16367



2025/04/25 08:22

Jamshedpur, Jharkhand, India
R547+493, Kadma Market, Kadma, Jamshedpur, Jharkhand 831005, India
Lat 22.80495 Long 86.163627



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Jamshedpur, Jharkhand, India
R547+493, Kadma Market, Kadma, Jamshedpur, Jharkhand 831005, India
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Lat 22.80493 Long 86.163642



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DAY- 13

EXPERIMENT 13: Static Charge

Participants: Kumari Shivani Tudu, Preeti Burh, Asai Kalundia

Objective: To generate of static electricity by combing hair and observing its effects.

Materials required: Plastic comb, Dry hair, Small pieces of paper

Procedure:

1. Ensure our hair is dry and the comb is free from any moisture.
2. Comb our hair vigorously with the plastic comb for about 30sec to 1 min.
3. Hold the comb near small pieces of paper and observe what happens.
4. Repeat the process several times to ensure consistent results.

Results:

- The comb attracts small pieces of paper after combing hair.
- The attraction is due to static electricity generated by friction between the comb and hair.

Science Behind It:

This activity demonstrates the phenomenon of **static electricity**, which is a form of electric charge generated by **friction**. When a plastic comb is rubbed against dry hair, **electrons** (negatively charged particles) are transferred from one material to the other—typically from the hair to the comb.

As a result, the comb becomes **negatively charged** while the hair becomes **positively charged**. This imbalance of electric charges creates a **static electric field** around the comb. When the charged comb is brought near small, neutral objects like paper pieces, it induces a temporary charge in them, causing them to be **attracted to the comb**.



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This is a classic example of **electrostatic induction** and shows how materials can become charged and interact due to the forces of static electricity

Conclusion:

The experiment successfully demonstrates how **friction between two materials**—in this case, a plastic comb and dry hair—can generate **static electricity**. The resulting electric charge causes the comb to attract small pieces of paper, providing a clear and engaging way to observe electrostatic forces. This simple activity highlights fundamental concepts of electricity and matter that form the basis of many real-world technologies and natural phenomena.

PHOTO OF EXPERIMENT-13





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DAY-14

EXPERIMENT 14: Specific Heat of Water (Specific Heat Measurement or Heat Transfer and Balloon Expansion)

Participants: Muskan Kumari,

Objective: To demonstrate the principles of heat transfer and its effect on the expansion of air inside a balloon.

Materials required: Balloons, Water, Fire source (candle or lighter)

Procedure:

1. Blow up a balloon to a moderate size and tie it off.
2. Hold the balloon over a flame, observing what happens.
3. Repeat the process with a balloon filled with water.
4. Record observations and note any differences.

Results:

When the air-filled balloon is exposed to heat from the flame, it expands rapidly and bursts due to increased air pressure. The water-filled balloon does not burst when exposed to the same heat source. The water absorbs the heat, preventing the balloon material from reaching its breaking point.

Science Behind It:

This experiment demonstrates the principles of **heat transfer**, **thermal expansion**, and **specific heat capacity**.

1. Air-Filled Balloon:

When an air-filled balloon is brought close to a flame, the **heat energy is transferred** from the flame to the air inside the balloon. As air heats up, its molecules move faster and spread out, causing the air to **expand**. This increases the **pressure** inside the balloon. Since the balloon is made of thin rubber, it cannot withstand the increasing pressure and **bursts**.



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2. Water-Filled Balloon:

In contrast, when a balloon filled with water is exposed to the same flame, it **does not burst**. This is because **water has a high specific heat capacity**, meaning it can absorb a large amount of heat without a significant rise in temperature. The water inside the balloon **absorbs the heat** from the flame and distributes it, preventing the balloon's rubber from getting hot enough to weaken or break. As a result, the balloon remains intact.

Conclusion:

This experiment illustrates the principles of heat transfer and how different materials (air and water) respond to heat. The significant difference in outcomes between the air-filled and water-filled balloons demonstrates the importance of specific heat capacity in determining how materials react to thermal energy.



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DAY- 15

EXPERIMENT 15: Water Miniscus Experiment

Participants: Rohit Poddar

Objective: To demonstrate the concept of water meniscus, showcasing the effect of adhesive and cohesive forces on the shape of a liquid's surface.

Materials required: A glass, a Water Bottlecap, A needle needle-free injection

Procedure:

1. Fill the glass with water.
2. Carefully place the bottle cap in the centre of the glass, ensuring it floats.
3. Observe the bottle cap floats to the edge of the glass
4. Now with the help of the injection, fill the glass drop by drop carefully
5. Now the water level is up to top layer of the glass, in convex shape (type of meniscus)

Results:

- The water surface curves upward (convex meniscus) near the bottle cap.
- This curvature is due to the cohesive forces between water molecules being stronger than the adhesive forces between water and the bottle cap.



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Science Behind It:

This experiment illustrates the formation of a **convex meniscus** and the roles of **cohesive and adhesive forces** in shaping the surface of a liquid.

- 1. Cohesive Forces:** These are the attractive forces between **like molecules**—in this case, water molecules. Water has strong cohesive forces due to **hydrogen bonding**, which causes the molecules to cling tightly to each other.
- 2. Adhesive Forces:** These are the attractive forces between **unlike substances**, such as water and the bottle cap (typically plastic or metal). If the adhesive forces between the water and the cap are **weaker** than the cohesive forces among water molecules, the water tends to **pull itself together** rather than spreading along the surface of the object.
- 3. Convex Meniscus Formation:** As you carefully add water to the brim of the glass using the injection, the surface of the water begins to **bulge upward**, forming a **convex meniscus**. This shape occurs because the cohesive forces dominate and the water resists spilling over due to **surface tension**.
- 4. Cap Migration to the Edge:** The floating bottle cap tends to drift toward the edge of the glass due to subtle differences in surface tension and the curvature of the water surface, a phenomenon sometimes called the **Cheerios effect**—named after how cereal pieces cluster together or float to the bowl's edge.



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Conclusion:

The experiment was a fun and visual way to understand the formation of a convex meniscus when a non-wetting object (bottle cap) is placed in water, highlighting the role of surface tension and intermolecular forces

PHOTOS OF EXPERIMENT-15





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DAY- 16

EXPERIMENT- 16: INVISIBLE FIRE EXPERIMENT

Participants: Shristy Kumari, Amrita Kaur

Objectives: To demonstrate chemical reactions can release energy in invisible form, like heat or light, in non-visible spectra.

Material Required: One glass full of water, hand sanitiser, a matchbox and a piece of paper.

Procedure:

Take 1 glass of water, add a few drops of hand sanitiser.

Now, with the help of a matchbox box lit the fire above the water surface made of sanitiser. As we can see, the hand sanitiser makes a thin layer above the water, which will burn, and the flame is in light blue colour or invisible. When we put a piece of paper above the Burning flame, the paper catches fire.

Results:

- After adding hand sanitiser to the water, a thin flammable layer formed on the surface.
- When a match was brought close, **the sanitiser ignited**, producing a **light blue or nearly invisible flame**.
- Although the flame was difficult to see with the naked eye, it was **hot enough to ignite a piece of paper** held above it.
- The paper caught fire even though the flame itself was barely visible.

Science Behind It:

This experiment demonstrates that **chemical reactions can release energy in the form of heat and light**, including in parts of the **electromagnetic spectrum** that are not visible to the human eye.



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- 1. Combustion Reaction:** Hand sanitiser contains alcohol (typically ethanol or isopropyl alcohol), which is highly flammable. When it burns, a **combustion reaction** takes place, converting the alcohol into carbon dioxide, water vapour, and **heat energy**:
- 2. Blue or Invisible Flame:** Alcohol burns with a **clean, blue flame** that produces very little soot and often emits light primarily in the **blue or ultraviolet range**. This makes the flame **less visible**, especially in well-lit areas or daylight.
- 3. Energy in Invisible Spectra:** Although the flame may appear faint or invisible, it still emits **infrared radiation (heat)** and **ultraviolet light**, both of which are **invisible** to the naked eye but can still cause burns or ignite objects like paper.
- 4. Surface Burning:** Since alcohol is less dense than water, it floats on the surface. This allows it to burn in a **thin layer**, making the flame more difficult to see but no less dangerous.

Conclusion: The experiment was fun and visual way to display the difference of blue and yellow colour flame also invisible flame and heat with the use of easy handy materials.



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PHOTOS OF EXPERIMENT-16





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DAY- 17

EXPERIMENT 17: Gravity and Air Resistance

Participant- Namanti Kandulna

Objective: To demonstrate the effect of **air resistance** and **gravitational force** on the motion of falling objects with different weights and surface areas.

Materials Required:

- One **notebook**
- One **lightweight sheet of paper**

Procedure:

1. Hold the notebook and the paper separately at the same height.
2. **First**, drop the **paper alone** and observe how it falls.
3. **Next**, drop the **notebook alone** and observe how it falls.
4. **Now**, place the paper **on top of the notebook** and drop them **together** from the same height.
5. Observe and compare the fall in each case.

Results:

- The **paper alone** falls **slowly**, swaying and floating because of **air resistance**.
- The **notebook alone** falls **quickly and straight down**.



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- When dropped **together**, the **paper stays on top of the notebook** and **falls quickly** with it.

Science Behind It:

- Gravitational Force** acts **equally** on all objects, regardless of their mass. In a vacuum, all objects fall at the same rate.
- But in the presence of air, objects are also affected by **air resistance** (also called **drag**).
- Air resistance** depends on the object's **shape**, **surface area**, and **speed**. Lighter and broader objects like paper experience **greater air resistance**, which slows their fall.
- A **heavier and compact object** like a notebook experiences **less air resistance**, so it falls faster.
- When the paper is placed **on top of the notebook**, the notebook cuts through the air and **blocks air resistance**, allowing the paper to fall along with it.

Conclusion:

- Gravity** acts on all objects **equally**, but the **presence of air resistance** affects how fast they fall.
- Lighter objects** with a **larger surface area** (like a sheet of paper) fall slower due to **greater air resistance**.
- When placed on a **heavier object**, the lighter object is shielded from air resistance and falls faster.



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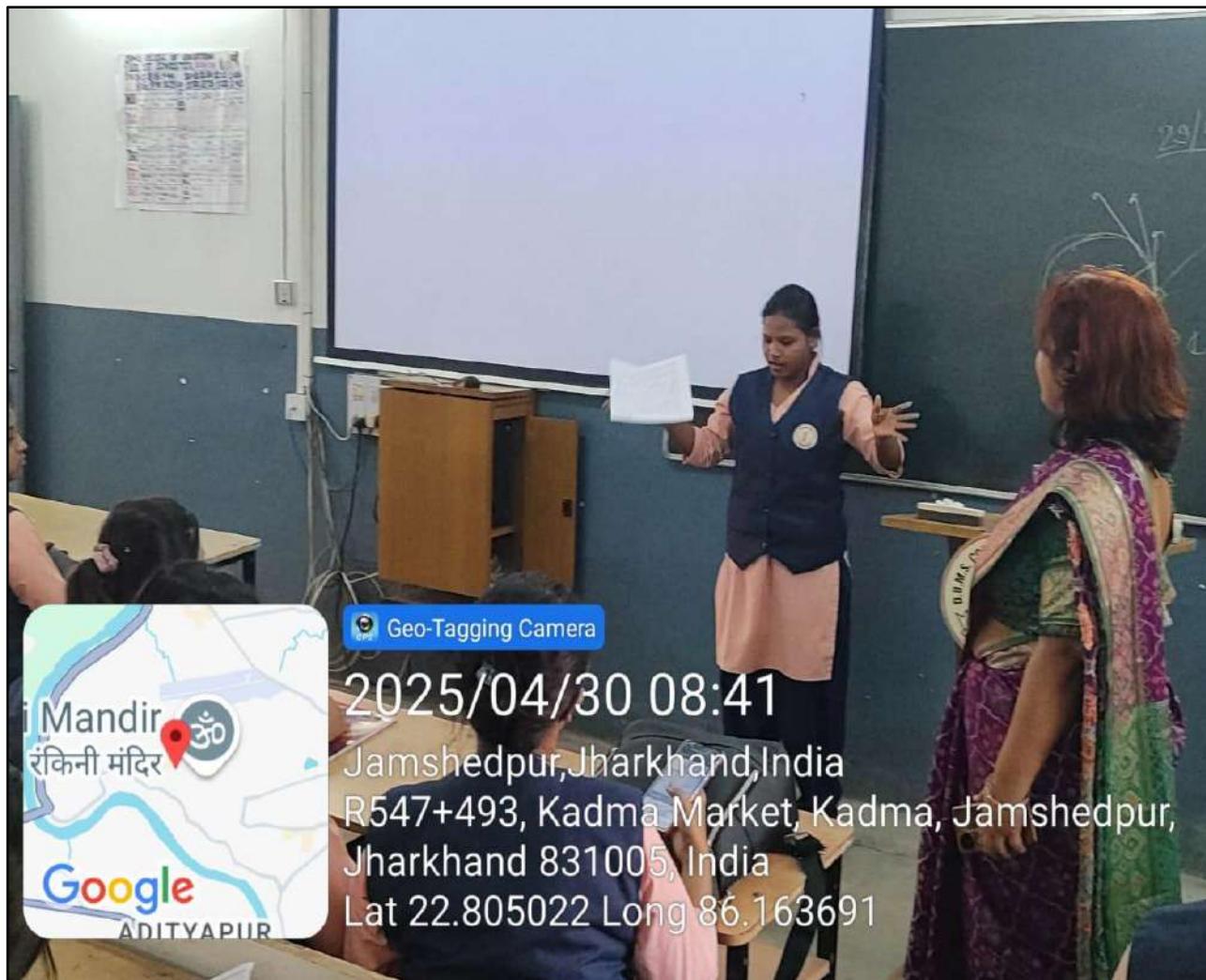
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- This experiment clearly shows how **air resistance influences motion**, not gravity itself.

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DAY- 18

EXPERIMENT 18: Refraction of Light

Participants: Arpita Paul, Manisha Kumari

Objective: To demonstrate how **refraction of light** can make an object (like a coin) appear to **disappear** when viewed through water and glass from a certain angle.

Materials Required:

- A **coin**
- An **empty transparent glass**
- A **jar of water**
- A **flat surface** (like a table)

Procedure:

1. **Place** the coin on a flat surface like a table.
2. **Place** the empty transparent glass **directly over the coin**, so it is centered beneath the glass.
3. **Pour water** slowly into the glass until it is full.
4. **Look from the side** of the glass, keeping your eyes at the same level as the table surface.



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Results:

- When you view the glass from the side at table level, **the coin appears to disappear**.
- If you change the viewing angle, the coin may reappear partially or fully.

Science Behind It:

This phenomenon is due to **refraction** — the bending of light as it passes from one medium to another (in this case, from water to glass to air).

- When the glass is filled with water, **light rays from the coin** bend as they move through the **curved surfaces** of the glass and the water.
- These **bent rays** are redirected in such a way that **they do not reach your eyes** when you view the setup from a low, side angle.
- Because no light from the coin enters your eyes from that position, the coin **seems to vanish**.
- This effect shows how **refraction can change the apparent position or visibility of an object**.

Conclusion:

- This experiment shows how **refraction of light** can cause an object to appear **invisible** from certain angles.
- Light does not travel in a straight line when it moves between materials of different densities.



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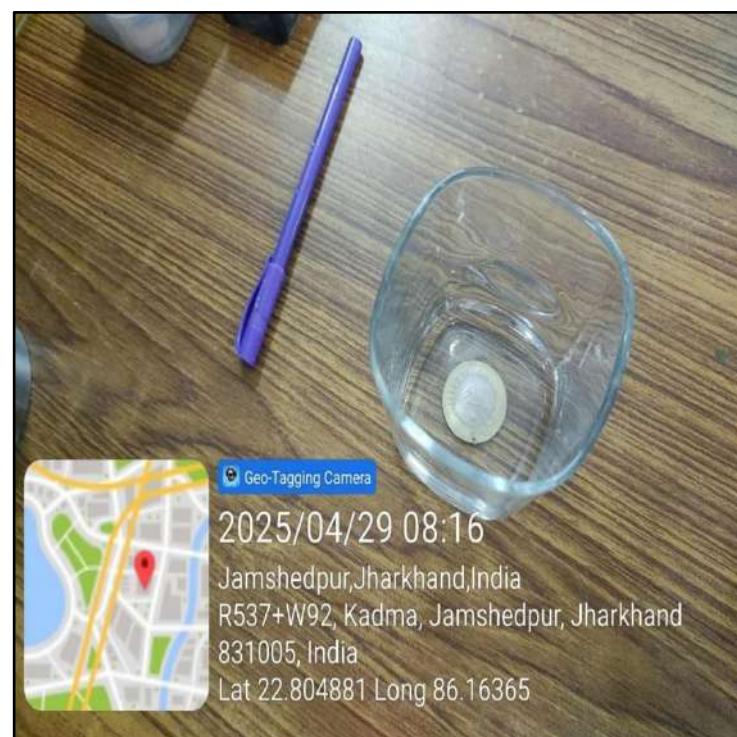
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- Understanding this principle helps explain many optical effects in everyday life, such as why objects appear bent in water or how lenses work.

PHOTOS OF EXPERIMENT-18





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DAY-19

EXPERIMENT 19: Lemon and Highlighter Experiment

Participants: Ruchika Mishra & Anuska kumari Singhe

Objectives: To remove highlighter ink with lemon juice.

Materials required: Lemon, Knife, Swab sticks, Bowl, Paper, Highlighter.

Procedures:

Step 1: Find a flat surface, and then grab your yellow highlighter and a white piece of paper.

Step 2: Draw on your paper with the highlighter. You can make it artsy.

Step 3: Get a cutting board and a lemon.

Step 4: Cut the lemon in half with a knife.

Step 5: Squeeze lemon juice in a bowl.

Step 6: Gently, dip the cotton tip into the lime juice. So that, the tip soaks the juices.

Step 7: Use the wet cotton tip to swab over the highlighter mark. What happens.

Step 8: Get creative! Make some highlighter artwork.

Results:

When we drag the cotton, tip dipped in lemon juice from the Highlighter mark, the mark gets removed or becomes invisible.

Science behind it:

As highlighter contains pyranine, a molecule that's attracted to water and works as a fluorescent dye, by absorbing ultraviolet light, while re-emitting the characteristic yellow coloured light on the visible spectrum. Pyranine also acts as a pH indicator, meaning it's capable of detecting acidity or basicity of a solution. Lemon juice has a natural citric acid, which falls on the acidic side



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of the pH scale. when it comes in contact with pyranine, it causes the molecule to loose the bond structure that enables it to absorb UV light, shifting that emitted light from yellow to outside of the visible colour spectrum, essentially making it invisible.

Conclusion:

With this simple experiment, we can gain a better understanding of fundamental chemistry concepts and they relate to world around us.

PHOTOS OF EXPERIMENT-19





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DAY- 20

EXPERIMENT 20: Atmospheric Pressure

Participants- Mahima Nag, Kavita Kumari Sundi

OBJECTIVE:

To demonstrate the concept of exploring the impressive force of air and learn how air pressure affects daily life.

Materials required: Two plastic bottles, Two balloons

Procedure:

1. You need a plastic bottle A and B close to the neck but not directly in it.
2. Bottle B create a small hole in the side of bottle.
3. Try to inflate the balloon while it's in the bottle A you cannot succeed.
4. Bottle B blow air into the bottle its now inflate inside the bottle.

Result:

Bottle A -When a balloon is placed inside the bottle, it will not inflate, since the bottle already filled with air particles with no escape route. The air inside the bottle compresses a little bit not enough to permit the balloon to inflate.

Bottle B- When you create a hole in a bottle, the air molecules in the bottle have an exit. They are pushed out as a balloon fills the space inside resulting in the balloon to inflate.



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Science Behind It

This experiment demonstrates the principle of **air pressure** and how it influences our ability to move or manipulate air-filled objects like balloons. Air is made up of molecules that occupy space and exert pressure in all directions.

In **Bottle A**, the balloon cannot inflate because the bottle is already filled with air. When you try to blow into the balloon, the air inside the bottle resists compression and has no way to escape. This trapped air pushes back against the balloon, preventing it from expanding. This shows that **air takes up space and resists being compressed without an outlet**.

In **Bottle B**, a hole is made in the side of the bottle. When you blow into the balloon, the air inside the bottle can now escape through the hole. This release allows the balloon to expand because there's less opposing pressure inside the bottle. This demonstrates that **reducing internal air pressure by providing an exit allows the balloon to inflate more easily**.

Through this activity, we learn a fundamental concept:

Air is matter — it has mass, takes up space, and exerts pressure.

This principle is applied in many everyday situations, such as how suction works in a vacuum cleaner, how airplanes fly using differences in air pressure, and why we can't breathe in a completely sealed bag.

Understanding air pressure helps us see how invisible forces around us shape our physical world.



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Conclusions:

The experiment was interesting and learn how air pressure affects their daily lives. Through science, we discovered that air is matter, and it takes up space.

PHOTO OF EXPERIMENT-20





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DAY- 21

EXPERIMENT 21: Surface Tension Experiment Under Virtual Lab (Glitter Germs)

Participants: Sushmita Ghatuary and Rupa Kumari

Objectives: To visually demonstrate the importance of hand washing with soap using glitter to represent germs.

Materials Required: White plate, Water, Glitter, Dish soap

Procedure:

- 1) Fill the plate with water. Sprinkle glitter over the surface of the water.
- 2) Now dip one finger in the glitter water. We can see that glitter sticks in the finger.
- 3) But when we dip one finger in dish soap and then dip that finger into the centre of the plate, the glitter scatters away, clearing the area around it.

Results:

The simple yet visually engaging experiment highlights how soap plays a vital role in hygiene. By lowering the water's surface tension, soap helps lift and separate dirt and germs from the skin. It provides a powerful metaphor for children and adults alike, promoting proper hand washing practices.

Science Behind It

This experiment visually demonstrates how **soap effectively removes germs**, using glitter as a stand-in for microbes.

When you sprinkle glitter on the surface of water, it floats due to the **surface tension**—a property that causes water molecules to stick together, forming a sort of “skin” on the surface. When you dip an unsoaped finger into the water, glitter sticks to it, just like germs stick to unwashed hands.

However, when you first coat your finger with **dish soap** and then touch the water, the glitter rapidly moves away. This is because **soap molecules reduce**



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the water's surface tension. Soap breaks the cohesive bonds between water molecules, disrupting the surface layer and causing the glitter to scatter.

Additionally, soap has special molecules with two ends:

- One end **attracts water** (hydrophilic),
- The other **attracts oils and dirt** (hydrophobic).

When you wash your hands with soap, these molecules surround dirt, grease, and germs, lifting them off your skin and allowing them to be rinsed away with water.

This simple demonstration provides a powerful scientific message:

Soap doesn't just rinse germs away — it breaks the bonds that let them stick to your skin.

CONCLUSION:

This happens because soap lowers the surface tension of the water, which causes the molecules to scatter.

This is a great science experiment to teach the importance of washing hands—the soap will literally make the germs scatter.



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PHOTOS OF EXPERIMENT-21





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DAY -22

EXPERIMENT 22: Splitting White Light into a Rainbow

Participants: Eliza Samad, Insha Siddiqui

Objective: To visually demonstrate how white light splits into a rainbow, illustrating the scientific concepts of **refraction** and **dispersion** of light.

Materials Needed:

- A clear glass or bowl of water
- A small mirror
- A white sheet of paper or notebook
- Sunlight or a strong flashlight

Procedure:

1. Fill the glass or bowl with water almost to the top.
2. Place the small mirror inside the glass at an angle so that it is partially submerged.
3. If indoors, turn off the lights and shine the flashlight onto the mirror through the water. If outdoors, position the setup near a window so sunlight hits the mirror.
4. Hold the white sheet of paper above the glass to catch the light reflected from the mirror.
5. Observe the appearance of a small **rainbow** on the paper.

Results:

A spectrum of colours (a mini-rainbow) appears on the white paper. This occurs because the white light entering the water is split into its component colours as it reflects off the submerged mirror and exits the water.



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Science Behind It:

This experiment demonstrates two key light phenomena:

1. **Refraction** – When light passes from one medium to another (from air into water), it changes speed and bends. This bending of light is called **refraction**.
2. **Dispersion** – White light is made up of many different colours. When it bends (refracts), each colour bends at a slightly different angle. This separation of colours is known as **dispersion**.

As the light enters the water, it slows down and bends. The mirror reflects the light back through the water and glass surface. Due to dispersion, the different colours (red, orange, yellow, green, blue, indigo, violet) spread out and become visible as a **rainbow** on the white paper.

This is similar to how rainbows form in nature when sunlight passes through raindrops in the atmosphere.

Conclusion:

The experiment successfully demonstrates how white light splits into a rainbow when it passes through water and reflects off a mirror. This illustrates the principles of **refraction** and **dispersion**, helping us understand the science behind natural rainbows and the behaviour of light.

This shows the dispersion of light — white light contains all the colours of the rainbow: red, orange, yellow, green, blue, indigo, and violet.



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PHOTOS OF EXPERIMENT-22





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DAY-23

EXPERIMENT 23: Demonstration of Centrifugal Force Using Green Coconut and Potato

Participants: Surbhi Kumari, Baby Rani Jana, Nilu Kumari

Objective:

To demonstrate the concept of **centrifugal force** and understand how it generates a radial outward push in a rotating system, which can lead to the separation or movement of objects based on their **mass** and **inertia**.

Materials Required:

- One green coconut
- One potato
- A small piece of hard pipe (like a PVC pipe)
- A strong rope

Procedure:

1. Take a strong rope and pass it through the hole of the hard pipe.
2. Tie the **potato** to the upper end of the rope and the **green coconut** to the lower end.
3. Hold the pipe horizontally in one hand so that both the coconut and the potato hang on either side of the rope.
4. Begin to rotate or swing the system in a circular motion using your hand holding the pipe.



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5. Observe what happens to the coconut and the potato during the circular motion, especially as you increase speed or try to pull the coconut upward without using your other hand.

Results:

When the rotating motion increases, the **green coconut**, due to its larger mass, resists upward motion more strongly than the lighter **potato**. You will observe that it becomes difficult to pull the coconut upward because of the outward force acting on it during the rotation.

Science Behind It:

This experiment illustrates the concept of **centrifugal force**, a pseudo force experienced in a rotating frame of reference. When an object moves in a circular path, it tends to move outward, away from the centre of rotation. This is not a real force but a result of the object's **inertia** — its tendency to resist changes in motion.

In the rotating system:

- The **green coconut**, having more mass, experiences a **greater centrifugal force** and is pushed outward more forcefully.
- The **potato**, being lighter, experiences less centrifugal force.
- The rope transmits this force through the pipe, making it difficult to lift the heavier object (the coconut) during motion.



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This principle is used in **centrifuges**, where heavier particles are pushed outward and separated from lighter ones due to differences in centrifugal force.

Conclusion:

The experiment successfully demonstrates how **centrifugal force** acts on objects in a rotating system. It shows that heavier objects experience a stronger outward push, making them harder to lift or move inward. This concept is essential in understanding rotational motion and is widely used in scientific and industrial processes such as particle separation and fluid dynamics.



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DAY-24

EXPERIMENT 24: Demonstration of Capillary Action

Participants: Shivani Puja Neha

Objective: To demonstrate the natural phenomenon of **capillary action**, where liquid rises in narrow spaces due to cohesive and adhesive forces. The objective is to understand how capillary action plays a vital role in nature, such as the absorption of water by plant roots.

Materials Required:

- Tissue paper
- A container of water
- Food colouring or dye (optional, for better visibility)

Procedure:

1. Fill a container with water. If desired, mix in a few drops of food colouring to make the water more visible.
2. Take the tissue paper and slowly dip one end into the container of water.
3. Observe the movement of the water inside the tissue paper over time.

Results:

As soon as the tissue paper is dipped in water, you will observe that the water **rises up** on its own, without any external force.



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Science Behind It:

This phenomenon is known as **capillary action**. It occurs due to two key forces:

1. **Cohesive forces** – the attraction between water molecules.
2. **Adhesive forces** – the attraction between water molecules and the inner surface of the tube.

When the adhesive forces between the water and the tube's surface are stronger than the cohesive forces within the water, the liquid climbs up the tube. This happens without any external pressure or force, purely as a result of molecular interactions.

Capillary action is **essential in nature**. For example:

- It helps plants draw water from the soil up through their roots and stems.
- It plays a role in how tears spread across the eye or how ink flows in a pen.

Conclusion:

The experiment clearly demonstrates the process of **capillary action**, showing how water can rise in narrow spaces due to molecular-level forces. This principle is not only a fascinating scientific concept but also a critical mechanism in many natural and practical processes.



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PHOTOS OF EXPERIMENT-24





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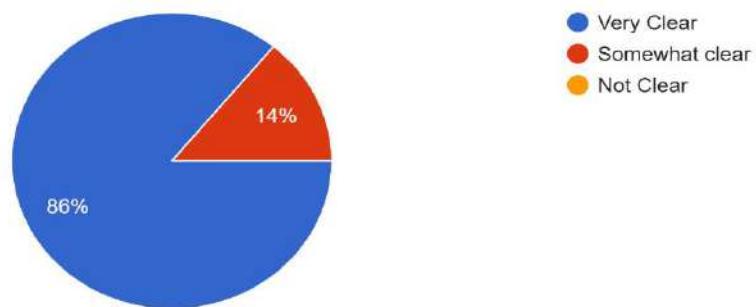
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FEEDBACK:

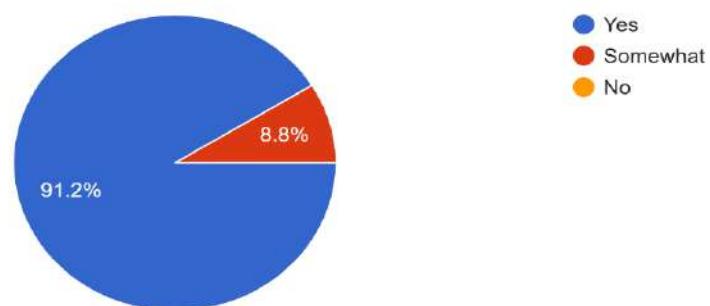
1. How clear were the objectives of the visual lab experiments?

57 responses



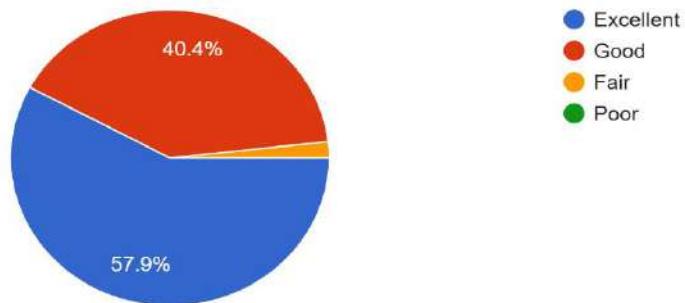
2. Were the instructions for the experiments easy to follow?

57 responses



3. How would you rate the quality of the visual materials (videos, things used in daily life)

57 responses





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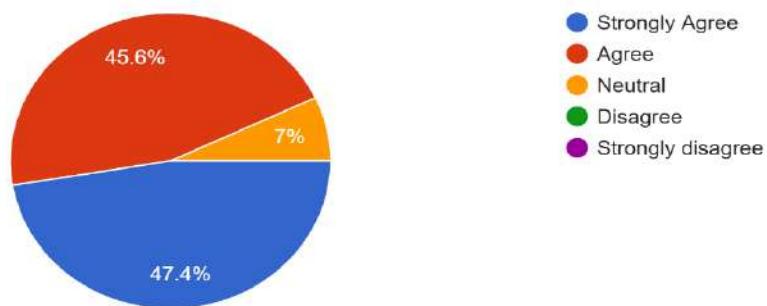
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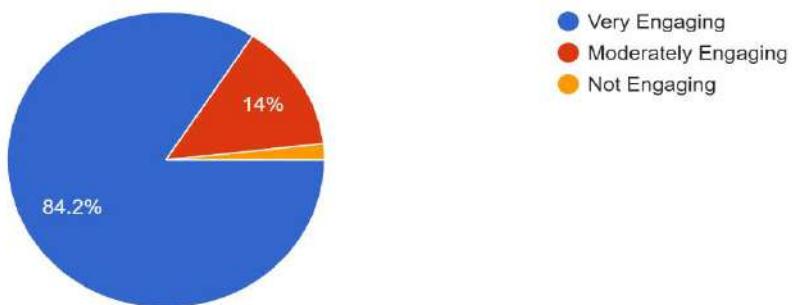
4. Did the experiments help you understand the theoretical concepts better?

57 responses



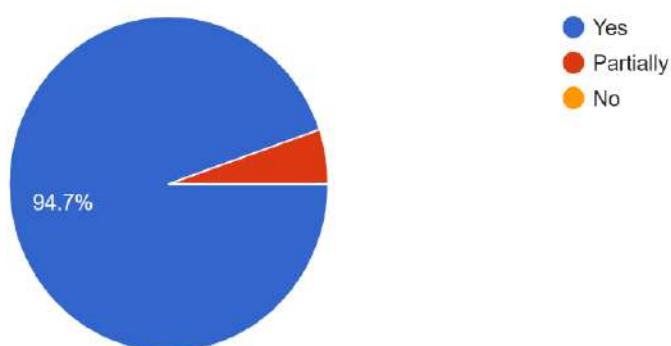
5. How engaging did you find the visual lab sessions?

57 responses



6. Did the lab environment (digital or physical) support your learning?

57 responses





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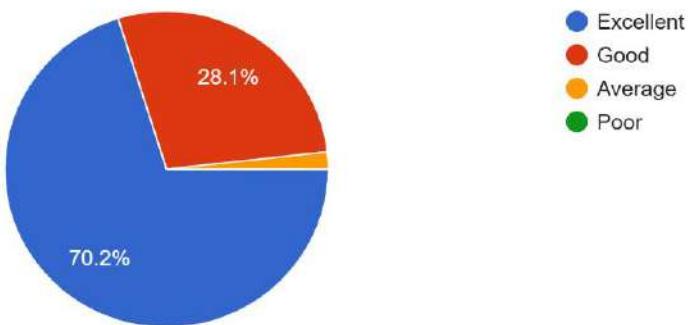
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10. Overall, how would you rate the visual lab helpful in your course?

57 responses



Overall Outcomes:

- Enhanced Conceptual Understanding:**

Students gained clarity on fundamental scientific concepts such as static electricity, refraction, density, chemical reactions, air pressure, and more through direct observation and experimentation.

- Promotion of Curiosity and Inquiry-Based Learning:**

The activities sparked curiosity and encouraged students to ask questions, explore "why" and "how" things happen, and think like young scientists.

- Development of Scientific Skills:**

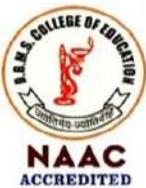
Students improved in essential skills such as observation, hypothesis formation, analysis, and drawing conclusions from experimental data.

- Strengthened Teamwork and Collaboration:**

Working in groups helped students develop communication, coordination, and responsibility while conducting experiments safely and effectively.

- Linking Theory with Practice:**

Real-life demonstrations helped bridge the gap between textbook knowledge and its practical application in daily life.



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- Boosted Confidence and Presentation Skills:**

Students gained confidence in performing and explaining scientific experiments during assembly and classroom activities.

- Instilled Scientific Temper:**

The hands-on nature of the program helped cultivate a scientific mindset, fostering logic, critical thinking, and a rational approach to problem-solving.

CONCLUSIONS:

CURIOSITY SCIENCE STATION provided an engaging and enriching platform for students to explore scientific principles through hands-on experiments. Across a diverse range of activities—including static electricity, acid-base reactions, refraction, density, air pressure, and more—students actively applied theoretical concepts in real-life situations. These experiments fostered scientific thinking, improved observation and reasoning skills, and encouraged teamwork and curiosity.

The initiative successfully bridged the gap between textbook learning and practical application, making science more relatable and exciting. Students gained confidence in conducting experiments, learned the importance of safety and precision, and developed a deeper understanding of how scientific phenomena influence everyday life. Overall, the program promoted experiential learning and laid a strong foundation for future scientific exploration.



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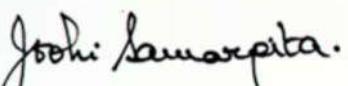
CERTIFICATE OF PARTICIPATION

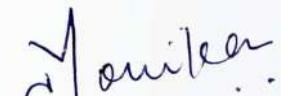
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Rohit Poddar

of B.Ed. (Session 24-26) who has actively participated in the One Month Workshop on Curiosity Science Station Activities conducted by Internal Quality Assurance Cell, D.B.M.S. College of Education during the month of April 2025 with the objective of promoting hands-on scientific learning and concept-based visualization.


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Sweta kumari

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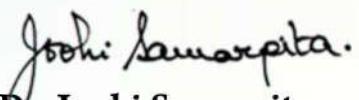
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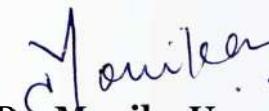
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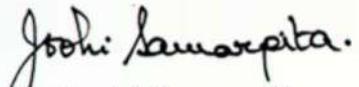
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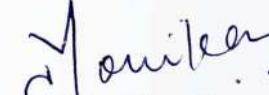
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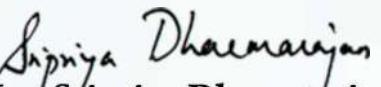


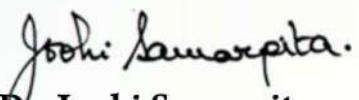
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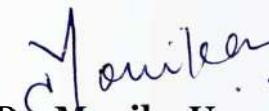
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