KENDRIYA VIDYALAYA GUNUPUR

JUNIOR SCIENCE LABORATORY UTILIZATION REPORT

Academic Session: 2026–2027

1. Introduction

The Junior Science Laboratory of **Kendriya Vidyalaya Gunupur** was utilized effectively during the academic session **2026–2027** for conducting practical activities, demonstrations, experiments and hands-on learning experiences for students of the primary and middle classes.

The laboratory activities were planned in accordance with the prescribed curriculum and were aimed at developing **scientific temperament, curiosity, observation skills, creativity, analytical thinking and practical knowledge** among students.

Students were encouraged to participate actively in experiments and demonstrations under the guidance and supervision of the Science teacher.

2. Objectives of Junior Science Laboratory Utilization

The major objectives were:

1. To provide students with hands-on experience in Science.
2. To develop curiosity and interest towards scientific phenomena.
3. To connect classroom concepts with real-life experiences.
4. To develop observation and experimentation skills.
5. To familiarize students with common laboratory apparatus and materials.
6. To encourage students to ask questions and draw conclusions based on observations.
7. To develop scientific attitude and logical thinking.
8. To promote teamwork and cooperative learning.
9. To inculcate laboratory safety and cleanliness habits.
10. To make Science learning joyful, experiential and activity-based.

3. Activities Conducted in the Junior Science Laboratory

Sl. No.	Activity / Experiment	Learning Outcome
1	**Testing of Acids and Bases Using Indicators**	Students identified acidic and basic substances through colour changes using suitable indicators.
2	**Iron Nails in Copper Sulphate Solution**	Students observed a displacement reaction and understood the relative reactivity of metals.
3	**Reaction of Metals with Acids**	Students observed the reaction of metals with acids and understood the formation of salt and hydrogen gas.
4	**Burning of Magnesium Ribbon in Air**	Students observed the bright white flame and formation of magnesium oxide.

Sl. No.	Activity / Experiment	Learning Outcome
5	**Neutralisation Reaction**	Students understood that an acid reacts with a base to form salt and water.
6	**Separation of Mixtures**	Students learned sedimentation, decantation, filtration, magnetic separation and other methods.
7	**Sublimation Activity**	Students understood the separation of a sublimable substance from a mixture.
8	**Refraction Through Glass Slab**	Students observed the bending of light while passing through a transparent medium.
9	**Onion Peel Cell Under Microscope**	Students observed the basic structure of plant cells using a microscope.
10	**Observation of Animal Tissues Under Microscope**	Students observed and compared different types of animal tissues.
11	**Types of Bones**	Students identified different types of bones and studied their shapes and functions.
12	**Crystallization of Copper Sulphate**	Students observed the formation of crystals and understood the process of crystallization.
13	**Coagulation Activity**	Students understood how suspended particles can be brought together to facilitate separation.
14	**Differentiation of Colloidal Solutions**	Students studied the properties of colloidal solutions using starch and egg albumin samples.

4. Major Skills Developed Among Students

The laboratory activities helped students develop the following skills:

- Observation and identification
- Measurement and recording
- Handling of simple laboratory apparatus
- Microscopic observation
- Drawing scientific diagrams
- Classification and comparison
- Making predictions and inferences
- Recording experimental results
- Drawing conclusions
- Teamwork and cooperation
- Problem-solving and logical thinking
- Scientific communication

5. Learning Outcomes

After participating in the laboratory activities, students were able to:

1. Understand scientific concepts through direct observation.
2. Differentiate between physical and chemical changes.
3. Identify acids and bases using indicators.
4. Recognize common chemical reactions.

5. Understand different methods of separation of substances.
6. Explain basic properties of light and refraction.
7. Observe plant cells under a microscope.
8. Identify basic types of tissues and bones.
9. Understand the importance of practical experimentation.
10. Apply classroom learning to everyday situations.

6. Laboratory Safety and Discipline

Proper safety measures were followed during all laboratory activities. Students were instructed to:

- Handle glassware and apparatus carefully.
- Use chemicals only under teacher supervision.
- Avoid direct contact with chemicals.
- Never taste laboratory substances.
- Maintain cleanliness in the laboratory.
- Follow instructions before starting an activity.
- Handle microscopes and other instruments carefully.
- Keep the working area clean after experiments.
- Dispose of laboratory waste appropriately.
- Follow all safety instructions given by the teacher.

7. Teacher's Role

The Science teacher supervised all laboratory activities and ensured that:

- Activities were conducted according to the curriculum.
- Appropriate materials and apparatus were arranged.
- Students understood the purpose and procedure of each activity.
- Safety precautions were followed.
- Students were actively involved in the experiments.
- Observations and conclusions were properly recorded.
- Laboratory equipment was handled and maintained properly.

8. Overall Impact

The effective utilization of the Junior Science Laboratory made the teaching-learning process more **interactive, experiential and student-centred**. Students showed enthusiasm and active participation during practical activities.

The laboratory experiences helped bridge the gap between **theoretical knowledge and practical application** and contributed towards the development of scientific attitude, creativity, observation, reasoning and problem-solving abilities.

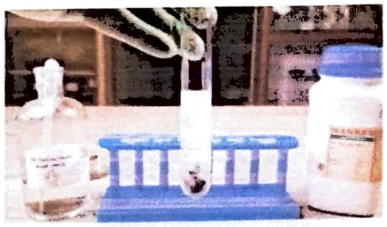
IMAGES OF EXPERIMENT DOING



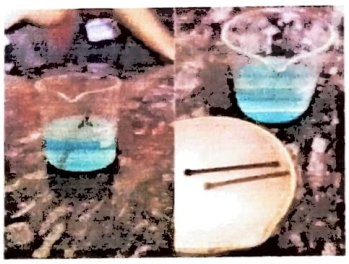
ACID, BASE INDICATORS



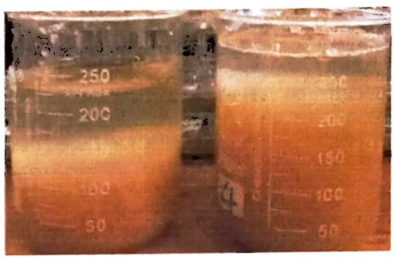
NEUTRALISATION REACTION



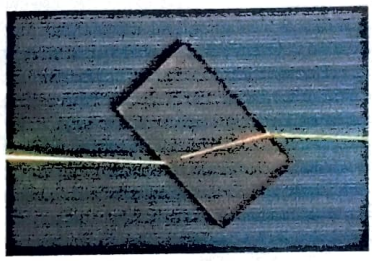
METALS WITH ACID



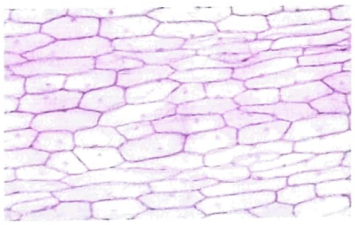
IRON NAIL IN $CUSO_4$ SOL



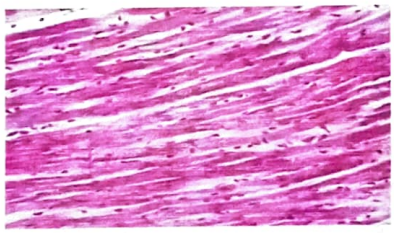
COAGULATION (ALUM AND SAND)



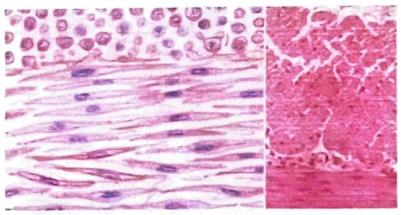
REFRACTION THROUGH GLASS SLAB



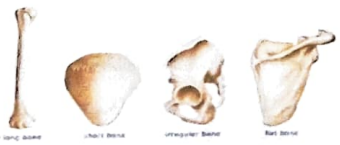
ONION PEEL CELL



CARDIAC MUSCLES



SMOOTH MUSCLES



TYPES OF BONES



CRYSTALIZATION PROCESS



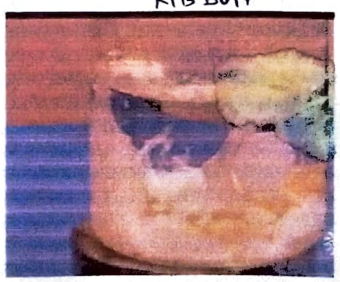
BURNING OF MAGNESIUM RIBBON



SUBLIMATION



COLLOIDAL SOLUTION STARCH IN WATER



EGG ALBUMIN IN WATER COLLOIDAL SOLUTION

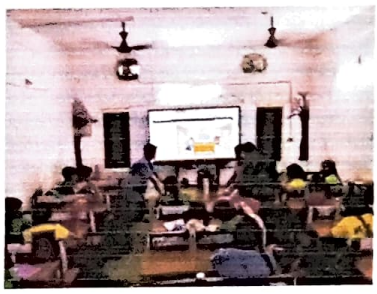
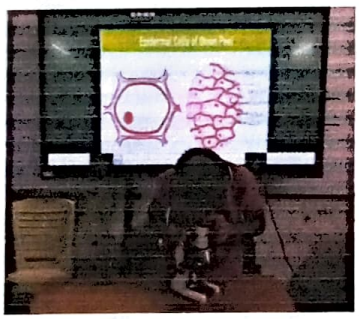
TEACHER SIGN-

PRINCIPAL SIGNATURE-









Epidermal Cells of Onion Peel



