

**ANDHRA PRADESH
BIOLOGICAL SCIENCE TEACHERS FORUM**

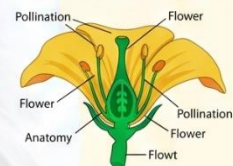


**FORMATIVE
ASSESSMENT-1**

2026-27

PROJECTS AND LAB ACTIVITIES

VI -X CLASSES



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ANDHRA PRADESH STATE COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING
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SELF ASSESSMENT – I

2026-2027

CLASS X

LAB ACTIVITY 1

Experiment to show the presence of starch in a leaf.

Aim: To test the presence of starch in a leaf.

Materials Required: Leaf, beaker, test tube, water, alcohol (spirit), iodine solution, petri dish, dropper, tripod stand with wire gauze, burner, and forceps/tweezers.

Procedure:

1. Take a leaf from a plant that was kept in sunlight.
2. Boil the leaf in **water** for **2–3 minutes**.
3. Then boil the leaf in **alcohol (spirit)** using a **water bath** until it becomes colourless.
4. Wash the leaf with **warm water** to soften it.
5. Place the leaf in a **petri dish** and add a few drops of **iodine solution**.

Observation:

1. The **green parts of the leaf turn blue-black** after adding iodine.
2. The **non-green parts remain brown or yellow**.

Conclusion: The appearance of a blue-black coloration indicates the presence of starch in the leaf extract.

Precautions:

1. Keep the plant in a dark room for three days so that all the starch gets used up.
2. We should boil the leaf in Spirit over a water bath carefully.
3. We should boil the leaf till it will become pale white.



Lab Activity 2

Experiment: Chlorophyll is necessary for photosynthesis (Variegated leaf Experiment).

Aim: To show that chlorophyll is necessary for photosynthesis.

Materials Required: Variegated leaf plant (money plant/croton), beaker, alcohol, water, burner, iodine solution, forceps.

Procedure:

1. Take a **variegated plant** and keep it in the **dark for 2–3 days**.
2. Keep the plant in **sunlight for a few hours**.
3. Pluck a leaf and note the **green and non-green parts**.
4. Boil the leaf in **water for a few minutes**.
5. Then place it in **alcohol** and heat in a water bath to remove green colour.
6. Wash the leaf and add **iodine solution**.

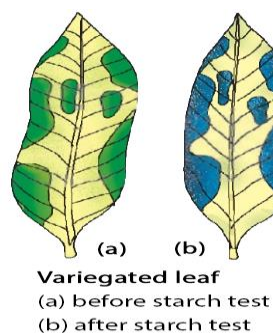
Observation:

1. Green parts of the leaf turn **blue-black**.
2. Non-green parts do **not change colour**.
3. Leaf becomes **colourless** after boiling in alcohol and alcohol turns green.

Conclusion: Starch is present only in **green parts**. So, **chlorophyll is necessary for photosynthesis**.

Precautions:

1. Use a **healthy variegated leaf**.
2. Heat alcohol in a **water bath only** (not directly).
3. Wash the leaf before adding iodine.



LAB ACTIVITY 3

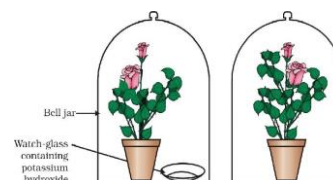
Experiment to show the Carbon dioxide is essential for photosynthesis.

Aim: To show that carbon dioxide is essential for photosynthesis.

Apparatus: Two potted plants, two bell jars, potassium hydroxide (KOH), small dish, vaseline, iodine solution.

Procedure:

1. Take two healthy potted plants and keep them in the dark for 2–3 days.
2. Place each plant under a separate bell jar.
3. Keep a small dish of KOH in one jar to absorb carbon dioxide.



4. Keep the other jar without KOH.
5. Seal the jars with vaseline and keep them in sunlight for a few hours.
6. Take a leaf from each plant and test with iodine solution for starch.

Observation:

The leaf from the plant with KOH does not turn blue-black.

The leaf from the other plant turns blue-black.

Conclusion: Carbon dioxide is essential for photosynthesis.

Precautions:

1. Close the bell jars tightly.
2. Both plants should get same sunlight.

LAB ACTIVITY 4

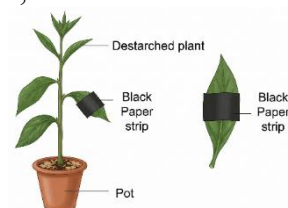
Experiment: Sunlight is essential for photosynthesis.

Aim: To show that sunlight is necessary for photosynthesis.

Materials Required: Potted plant, black paper, clips, iodine solution, beaker, alcohol, burner.

Procedure:

1. Take a **potted plant** and keep it in the **dark for 2–3 days**.
2. Cover part of a leaf with **black paper** and fix it with clips.
3. Keep the plant in **sunlight for 2 hours**.
4. Pluck the leaf and **remove the paper**.
5. Test the leaf with **iodine solution for starch**.



Observation:

The part of the leaf exposed to sunlight turns **blue-black**, while the covered part does not.

Conclusion:

Sunlight is **necessary for photosynthesis**.

LAB ACTIVITY 5

Experiment: To show the action of saliva on starch.

Aim: To show that effect of saliva on starch.

Materials Required: Two test tubes (A and B), 1% starch solution, saliva, iodine solution, dropper, test tube stand.

Procedure:

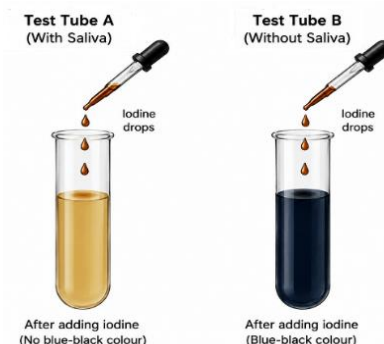
1. Take **1 ml of starch solution** in two test tubes A and B.
2. Add **saliva to test tube A**.
3. Keep test tube B **without saliva**.
4. Leave both for **20–30 minutes**.
5. Add a few drops of **iodine solution** to both.

Observation:

1. Test tube B turns blue-black.
2. Test tube A does not turn blue-black.

Conclusion:

Starch is present in test tube B but not in A. This shows that **Saliva digests starch into simple sugars**.



LAB ACTIVITY 6

Experiment: Carbon dioxide is more in exhaled air.

Aim: To show that exhaled air has more carbon dioxide than inhaled air.

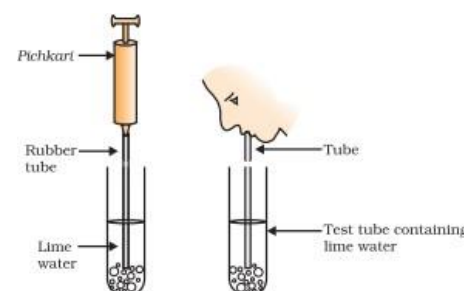
Apparatus: Two test tubes, lime water, straw/syringe/pichkari, test tube stand.

Procedure:

1. Take two test tubes and label them **A and B**.
2. Fill both with equal amounts of **fresh lime water**.
3. Blow **normal air** into test tube A using a syringe/pichkari.
4. Blow **exhaled air** into test tube B using a straw.
5. Observe which test tube turns milky faster.

Observation:

Lime water in **test tube B** turns milky faster than in test tube A.



Conclusion:

Exhaled air contains **more carbon dioxide** than inhaled air.

Precautions:

1. Use **fresh lime water**.
2. Blow **slowly and carefully**.
3. Take **equal amounts** of lime water in both test tubes.

LAB ACTIVITY 7

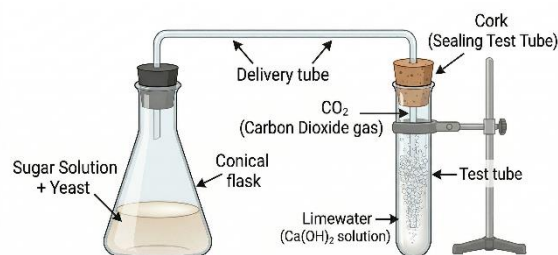
Experiment: Anaerobic Respiration in Yeast.

Aim: To show that respiration can occur without oxygen.

Apparatus: Sugar solution/fruit juice, yeast, conical flask/test tube, cork, bent glass tube, lime water.

Procedure:

1. Take **sugar solution** and add some **yeast**.
2. Pour the mixture into a **test tube or flask**.
3. Close it with a **cork fitted with a bent glass tube**.
4. Dip the other end of the tube into a test tube with **lime water**.
5. Leave it for some time and observe.
6. Open the cork after some time and **smell the solution**.



Observation:

1. Lime water **turns milky**.
2. The solution has a **smell of alcohol**.

Conclusion:

Yeast carries out **fermentation** and produces **alcohol and carbon dioxide**.

Precautions:

1. Use **fresh yeast and lime water**.
2. Keep the setup **airtight**.
3. Do the experiment in a **well-ventilated place**.

LAB ACTIVITY 8

Experiment: Transpiration in Plants.

Aim: To show that plants lose water through their leaves.

Materials Required: A healthy potted plant, polythene cover, rubber band.

Procedure:

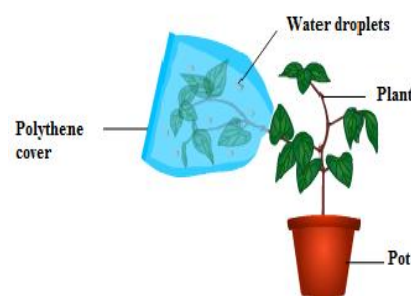
1. Take a healthy, well-watered plant.
2. Keep the plant in sunlight.
3. Cover one leafy branch with a polythene cover.
4. Tie the cover tightly with a rubber band.
5. Leave it undisturbed for a few hours.

Observation: Water droplets appear inside the polythene cover.

Conclusion: The leaves release water in the form of vapour. This process is called **transpiration**.

Precautions:

1. Use a healthy plant with broad leaves.
2. Make sure the polythene cover has no holes.
3. Tie the cover tightly.
4. Do not disturb the setup.



PROJECT WORK-1

Name of the lesson: Life Processes

Name of the project: Effect of Exercise and Pranayama on Breathing Rate.

Aim: To observe how physical activity and yogic breathing techniques (pranayama) affect breathing rate in humans.

Objectives:

1. To understand the relationship between physical activity and respiratory rate.

2. To compare the effects of vigorous exercise vs. pranayama on breathing patterns.
3. To analyze how the body maintains oxygen balance during different activities.
4. To develop awareness of breathing control and its impact on health.

Materials Required: Stopwatch or timer, Notebook, Quiet space for pranayama, Space for jumping jacks or running.

Procedure:

Part A: After Exercise (Aerobic)

1. Sit calmly and count your resting breathing rate (breaths per minute).
2. Do 30 jumping jacks or run in place for 2 minutes.
3. Immediately after stopping, count your breathing rate.
4. Record again after 1 minute and 3 minutes of rest.

Part B: After Yoga/Pranayama

1. Sit in a calm position. Do alternate nostril breathing (**Anulom-Vilom**) or deep belly breathing for 5 minutes.
2. Count your breathing rate before and after the session.
3. Note how you feel (relaxed, energetic, etc.)

Data Table:

Condition	Breathing Rate (breaths/min)		Observation
	Common	Myself	
Resting Before Activity	16		Normal, calm
After Exercise (0 min)	30		Heavy breathing, fast
After Exercise (1 min rest)	24		Still elevated
After Exercise (3 min rest)	18		Almost normal
Before Pranayama	16		Normal
After 5 mins of Pranayama	12		Slower, deeper, more relaxed

Analysis:

- Exercise caused an immediate increase in breathing rate to meet oxygen demand and remove CO₂.
- Pranayama reduced the breathing rate, indicating improved oxygen efficiency and mental calmness.
- This shows two opposite but healthy responses of the respiratory system – one to stress (exercise), and the other to relaxation (yoga).

Conclusion:

- Breathing rate increases during physical activity due to higher oxygen demand.
- Yogic practices like pranayama slow down breathing, improving oxygen efficiency and calming the nervous system.
- Both are beneficial: exercise builds stamina; pranayama improves breath control and mental health.

Experience of the Student (Self-reflection):

"After doing jumping jacks, I felt tired and my breath became fast. It took a few minutes to return to normal. But after doing pranayama, I felt calmer and more focused. My breathing slowed down naturally. It was a peaceful experience."

Acknowledgement:

I sincerely thank my Biological Science teacher for helping me understand the practical impact of breathing and the role of exercise and yoga in maintaining good health.

Reference Material: State Board Class – 10 text book, NCERT & CBSE text books and You Tube Videos.

PROJECT WORK-2

Name of the lesson: Life Processes

Name of the project: Comparison of Excretory Products in Humans and Plants

Aim: To study and compare the different types of excretory products produced by humans and plants.

Objectives:

1. To understand the process of excretion in humans and plants.
2. To identify the types of waste materials excreted by each.
3. To observe how excretory products are eliminated or stored.
4. To compare the excretory mechanisms of two living systems.

Materials Required: Charts or diagrams of human and plant excretory systems, Whiteboard or chart paper, Leaves, flower petals, or any classroom plants, Human body charts or models.

Procedure:

1. Discuss and record the major excretory products of humans (e.g., urea, sweat, CO₂).
2. Observe classroom plants and note resin, gum, latex, and oxygen release through stomata.
3. Create a comparative table listing excretory products and their elimination methods.
4. Classify each product as gaseous, solid, or liquid.

Data Table:

Comparison of Excretory Products:

Organism	Excretory Products	Type	Mode of Excretion
Human	Urea	Liquid	Through urine via kidneys
Human	Sweat	Liquid	Through sweat glands (skin)
Human	CO ₂	Gaseous	Through lungs during breathing
Plant	Oxygen	Gaseous	Through stomata in leaves
Plant	Water vapor	Gaseous	Through transpiration
Plant	Resins, Gums, Latex	Semi-solid	Stored in bark or vacuoles

Data Analysis:

- Humans have specialized organs for active excretion (kidneys, lungs, skin).
- Plants passively excrete through transpiration and storage.
- Human excretory products are harmful if retained; plants use storage or diffusion.

Conclusion:

Excretion is essential for survival in both humans and plants. Though both produce waste, their methods and products vary due to different biological structures and needs.

Experience of the Student (Self-reflection):

"I was amazed to learn that even plants excrete waste! I had always thought only humans did. It was interesting to compare how both systems work in different ways to stay healthy."

Acknowledgement:

I thank my Biological Science teacher for guiding me through this project and helping us observe and compare the amazing ways living things manage waste.

Reference Material: State Board Class – 10 text book, NCERT & CBSE text books and You Tube Videos.

CLASS IX

Activity 1: Onion Peel Cells

Aim: To observe plant cells from onion peel.

Materials Required: Onion, forceps, slide, cover slip, water, safranin, needle, microscope.

Procedure:

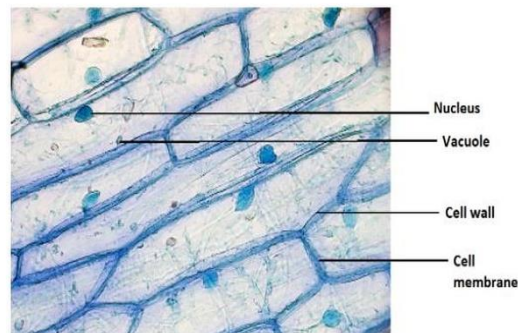
1. Take a small piece of onion.
2. Peel the thin inner skin (epidermis).
3. Place it in water to prevent drying.
4. Put it on a slide with a drop of water.
5. Add a drop of safranin stain.
6. Cover with a cover slip carefully.
7. Observe under a microscope.

Observation:

1. Small rectangular box-like structures are seen.
2. Each structure is a cell with a nucleus.

Result: Onion peel is made of many cells.

Conclusion: Onion peel is made up of many cells. Cells are the basic units of life.



ACTIVITY 2: Different Types of Cells

Aim: To observe different types of cells.

Materials Required: Onion peel, leaf peel, root tip, slide, microscope.

Procedure:

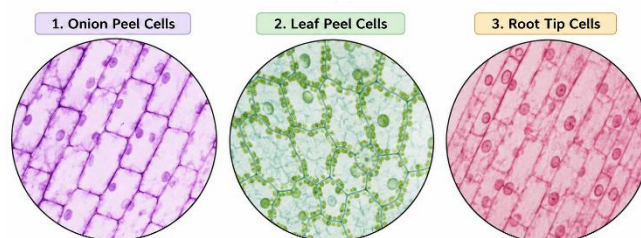
1. Prepare slides of onion peel, leaf peel, or root tip.
2. Observe each slide under a microscope.
3. Compare their shape and structure.

Observation:

1. Cells differ in shape and size.
2. Onion cells → rectangular
3. Leaf cells → irregular
4. Root cells → elongated

Result: Cells show variation in shape.

Conclusion: Cells vary in shape and size depending on their function.



ACTIVITY 3: Osmosis (Egg Experiment)

Aim: To demonstrate osmosis.

Materials Required: Egg, dilute hydrochloric acid, water, salt solution.

Procedure:

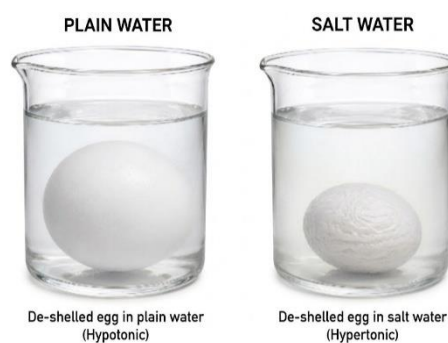
1. Remove eggshell using dilute acid.
2. Place the egg in pure water.
3. Observe after some time.
4. Place another egg in salt solution.
5. Observe again.

Observation:

1. Egg in water swells.
2. Egg in salt solution shrinks.

Result: Water moves through membrane.

Conclusion: Osmosis is movement of water across a semi-permeable membrane from low concentration to high concentration (osmosis).



PROJECT WORK – 1

Lesson: The Fundamental Unit of Life

Name of the Project: Analysis of differences between plant cell and animal cell.

Aim: To identify and analyze the differences between plant cell and animal cell.

Objectives:

1. To observe onion peel cell and cheek cell under microscope.
2. To collect information about plant and animal cells.
3. To write differences in a table.
4. To analyze and conclude the differences.

Procedure:

1. Observe plant cell and animal cell diagrams.
2. Prepare slides of onion peel and cheek cells.
3. Observe them under microscope.
4. Draw diagrams of both cells.
5. Discuss observations with teacher.
6. Write differences in a table.

Differences between Plant Cell and Animal Cell:

S. No	Cell Organelle	Plant Cell	Animal Cell
1	Cell wall	Present	Absent
2	Chloroplast	Present	Absent
3	Vacuole	Large	Small/Absent
4	Centriole	Absent	Present

Analysis:

1. Plant cells have a cell wall which gives strength.
2. Plant cells have chloroplast to prepare food.
3. Plant cells have a large vacuole to store water.
4. Animal cells do not have cell wall and chloroplast.
5. Animal cells have centrioles for cell division.

Conclusion: The structure and life processes of plant cells and animal cells differ from each other. Therefore, they contain different organelles to perform their specific functions.

Student Experience: I observed onion peel and cheek cells under the microscope. I understood the differences between plant and animal cells and learnt how to prepare slides.

Acknowledgement: I thank my teacher, parents, and friends for their constant support and encouragement.

Resources: AP State Board Class 9 textbook, ChatGPT, Gemini AI, YouTube videos.

PROJECT WORK – 2

Lesson: The Fundamental Unit of Life

Name of the Project: Making of a typical cell model.

Aim: To make a model of a typical cell with all the cell organelles.

Objectives:

1. Collecting information about different cell organelles and their functions.
2. Drawing the diagram of a typical cell.
3. Collecting materials to make a model.
4. Preparing the model.

Procedure:

1. Study about different cell organelles and their functions.
2. To make a model of a typical cell.
3. Plan the parts to be included in the model.
4. Collect information about each cell organelle.
5. Prepare a table of organelles and their functions.

Table:

S. No	Part of the Cell / Organelle	Functions
1	Cell wall	Protects the cell and gives shape and strength.
2	Cell membrane	Semi-permeable, controls entry and exit.
3	Nucleus	Controls all activities of the cell.
4	Rough Endoplasmic Reticulum (RER)	Protein synthesis.
5	Smooth Endoplasmic Reticulum (SER)	Lipid synthesis.
6	Golgi bodies	Storage and transport of proteins.
7	Lysosomes	Digestion of wastes.
8	Ribosomes	Protein synthesis.
9	Mitochondria	Energy production (powerhouse).
10	Chloroplast	Photosynthesis.
11	Centrioles	Help in cell division.

Materials Collected to Make the Model: Thermocol sheet, chart paper, colours, labels, glue.

Method: Used the collected materials to prepare a model of a typical cell and labelled all the parts clearly.

Conclusion: By collecting information about the cell, we were able to make a model successfully and understand the structure and functions of cell organelles.

Student Experience: This project helped to understand cell structure and functions clearly. It was interesting to observe cells and make a model. It improved knowledge and practical skills.

Acknowledgement: I thank my teacher, parents, and friends for their constant support and encouragement.

Resources: AP State Board Class 9 textbook, ChatGPT, Gemini AI, YouTube videos.

CLASS VIII

ACTIVITY-1 – Let Us Observe

Aim: To observe how a water-filled flask acts like a magnifying glass.

Requirements: Round-bottom glass flask, Water, Cork, Book with printed letters, Magnifying glass

Procedure:

1. Fill the round-bottom flask with water and close it with a cork.
2. Place the flask on a book with printed letters.
3. Look at the letters through the flask.
4. Observe a small insect (like an ant) using a magnifying glass.

Observation:

S.No	Observation
1	Letters appear bigger through the flask.
2	The ant looks enlarged and body parts are clearer.

Conclusion: Water-filled flask acts like a magnifying glass and makes small objects appear larger.

Precautions:

1. Handle the glass flask carefully.
2. Keep the flask clean for a clear view.



Fig. 2.1: Round-bottom flask

ACTIVITY -2 – Study of Onion Peel Cells

Aim: To observe plant cells in an onion peel under a microscope.

Requirements: Onion bulb, Forceps, Safranin stain, Water, Glass slide, Coverslip, Glycerin, Brush, Microscope

Procedure:

1. Peel a thin transparent layer from the onion.
2. Stain it with safranin for 30 seconds and rinse with water.
3. Place the peel on a slide, add glycerin and cover with a coverslip.
4. Observe under a microscope.

Observation:

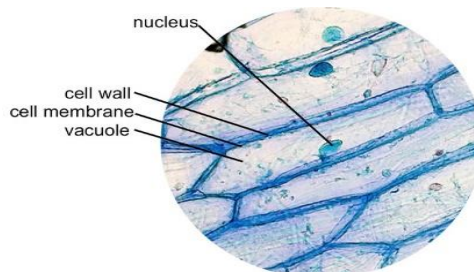
Cell Part	Observation
Shape	Rectangular
Arrangement	Closely packed
Cell wall	Present
Nucleus	Visible

Conclusion

Plant cells are rectangular and have a cell wall.

Precautions

1. Place the coverslip gently to avoid air bubbles.
2. Use a thin onion peel.



ACTIVITY -3 – Study of Human Cheek Cells

Aim: To observe human cheek cells under a microscope.

Requirements

1. Toothpick
2. Glass slide
3. Water
4. Methylene blue
5. Glycerin
6. Coverslip
7. Microscope

Procedure

1. Gently scrape the inside of the cheek using a clean toothpick.
2. Spread the sample on a slide with a drop of water.
3. Add methylene blue and glycerine, then place a coverslip.
4. Observe under the microscope.

Observation

Cell Part	Observation
Shape	Polygonal/Irregular
Cell membrane	Present
Nucleus	Visible
Cell wall	Absent

Conclusion

Animal cells have a cell membrane and nucleus but no cell wall.

Precautions

1. Use a clean toothpick.
2. Do not scrape the cheek harshly.

PROJECT WORK – 1

Lesson: The Invisible Living World

Name of the Project: Study of Mould Growth on Different Foods

Aim: To observe the growth of mould on different food items.

Objectives:

1. To identify foods on which mould grows.
2. To understand that microorganisms spoil food.

Materials Required: Small pieces of bread, chapati, cooked rice, plastic covers, notebook.

Procedure:

1. Place a small piece of bread, chapati, and cooked rice in separate plastic covers.
2. Keep them in a warm place for 5–7 days.
3. Observe them daily.
4. Record your observations.

Data Table:

Food Item	Day 3	Day 5	Day 7
Bread	Small mould	More mould	Fully covered
Chapati	No change	Few mould spots	More mould
Cooked Rice	Small mould	More mould	Bad smell and mould

Analysis:

1. Moist foods spoil faster.
2. Mould grows quickly on food kept in warm places.

Conclusion: Microorganisms spoil food. Fresh food should be eaten, and leftover food should be stored properly.

Experience of the Student: I learned that food spoils because of microorganisms and should be stored safely.

Acknowledgement: I thank my Science teacher, my parents, and my school for their guidance.

Reference Material: AP State Board Class 8 textbook, YouTube videos.

PROJECT WORK – 2

Lesson: The Invisible Living World

Name of the Project: Vaccination – Protection from Diseases

Aim: To learn about vaccines and the diseases they prevent.

Objectives:

1. To understand the importance of vaccination.
2. To identify common vaccines and their uses.

Materials Required:

Science textbook, vaccination card (if available), notebook.

Procedure:

1. Collect information about common vaccines.
2. Write the diseases prevented by each vaccine.
3. Find out and compare the different vaccines and diseases.
4. Record the information in a table.

Data Table:

Vaccine	Disease(s) Prevented
BCG	Tuberculosis (TB)
Polio Vaccine (OPV/IPV)	Polio
Measles-Rubella (MR) Vaccine	Measles and Rubella
Hepatitis B Vaccine	Hepatitis B
DPT/DTaP Vaccine	Diphtheria, Pertussis and Tetanus
Rotavirus Vaccine	Rotavirus diarrhoea
Pneumococcal Vaccine (PCV)	Pneumococcal diseases
Hib Vaccine	Haemophilus influenzae type b diseases
Japanese Encephalitis (JE) Vaccine	Japanese Encephalitis
HPV Vaccine	Human Papillomavirus (HPV) infection and related diseases

Analysis:

1. Vaccines protect us from many diseases.
2. Different vaccines prevent different diseases.
3. Vaccines help our body fight harmful germs.
4. Vaccination reduces the spread of diseases and gives better protection.

Conclusion: Vaccination is an important method of preventing many infectious diseases. Different vaccines protect us from different harmful microorganisms. Taking vaccines at the recommended time helps protect individuals and the community from serious diseases.

Experience of the Student: I learned that vaccines protect us from many infectious diseases. I also learned that different vaccines are used for different diseases.

Acknowledgement: I sincerely thank my Science teacher, my parents, and my school for their support.

Reference Material: AP State Board Class 8 textbook, YouTube videos

CLASS VII

CHAPTER 2. Exploring Substances: Acidic, Basic, and Neutral

ACTIVITY 2.1: Exploring Substances: Acidic, Basic, and Neutral

Aim: To test different substances and find out whether they are acidic, basic, or neutral.

Materials Required: Litmus paper (red and blue), Dropper, Distilled water, Lemon juice, Soap solution, Sugar solution, Vinegar, Baking soda solution.

Procedure:

1. Take a few drops of each substance in separate test tubes.
2. Dip red litmus paper into the substance and note the change.
3. Dip blue litmus paper into the same substance and note the change.



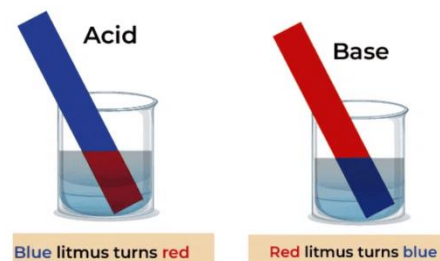
4. Record the observations carefully.

Observation:

1. Lemon juice turns blue litmus red. Soap solution turns red litmus blue.
2. Sugar solution does not change the color of either litmus paper.
3. Vinegar turns blue litmus red.
4. Baking soda solution turns red litmus blue.

Observation Table:

Substance	Effect on Red Litmus	Effect on Blue Litmus	Nature of Substance
Lemon juice	No change	Turns red	Acidic
Soap solution	Turns blue	No change	Basic
Sugar solution	No change	No change	Neutral
Vinegar	No change	Turns red	Acidic
Baking soda solution	Turns blue	No change	Basic



Result:

1. Lemon juice and vinegar are **acidic**.
2. Soap solution and baking soda solution are **basic**.
3. Sugar solution is **neutral**.

Inference:

1. Acidic substances turn blue litmus red.
2. Basic substances turn red litmus blue.
3. Neutral substances do not change the color of litmus paper. Colour change in red litmus paper.



LABACTIVITY 2.2: Taste and Touch Test

Aim: To identify substances as acidic, basic, or neutral by their taste and touch.

Materials Required: Lemon juice, Vinegar, Soap solution, Baking soda solution, Sugar solution, Clean spoons and fingers (for safe touch).

Procedure:

1. Take a small amount of each substance separately.
2. Taste carefully (only edible ones like lemon juice, vinegar, sugar solution).
3. Touch gently with clean fingers (for soap solution and baking soda solution).
4. Note the taste and feel of each substance.

Observation:

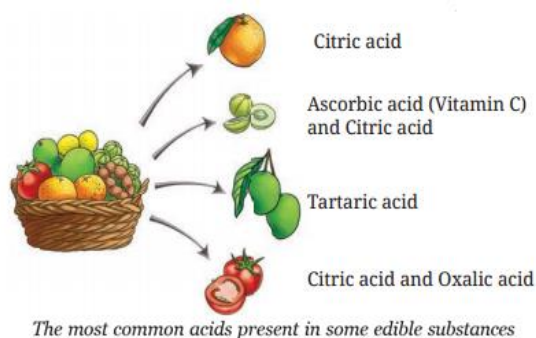
1. Lemon juice: Sour taste.
2. Vinegar: Sour taste.
3. Soap solution: Slippery to touch.
4. Baking soda solution: Slippery to touch.
5. Sugar solution: Sweet taste.

Result:

1. Sour taste indicates **acidic substances** (lemon juice, vinegar).
2. Slippery touch indicates **basic substances** (soap solution, baking soda solution).
3. Sweet taste indicates **neutral substance** (sugar solution).

Inference:

1. Acids usually taste sour.
2. Bases usually feel slippery.
3. Neutral substances may taste sweet or have no special taste.



PROJECT WORK

Lesson- Acids and Bases

Name of the project: To study the presence and uses of acids and bases in our daily life.

Aim: To explore about different types of Acids and Bases, their uses in daily life.

Objectives:

1. Identify different types of substances which contain Acids and Bases
2. Understand the uses of Acids and Bases

Procedure: Acids and bases are important chemicals that we use in everyday life. Acids have a sour taste, while bases feel soapy and are bitter. I collected information on Acids and Bases and write their uses

Uses of Acids

SN	Situation	Acid and use
1	In food and cooking	a. Citric acid in lemon → adds sour taste to food b. Vinegar (acetic acid) → used in pickles and cooking. c. Carbonic acid → present in soft drinks.
2	In Medicine	a. Ascorbic acid (Vitamin C) → boosts immunity. b. Acetylsalicylic acid (aspirin) → used as pain reliever.
3	In Industry	a. Sulphuric acid → used in making fertilizers, paints, batteries. b. Hydrochloric acid → used for cleaning metals. c. Nitric acid → used in making explosives and fertilizers.
4.	Other uses	a. Tartaric acid → used in baking powder. b. Citric acid → used as a preservative in packaged foods.

Uses of Bases

SN	Situation	Base and use
1	In household/ cleaning	a. Soap (sodium hydroxide) → removes dirt and oil. Washing soda (sodium carbonate) → used for washing clothes. Ammonium hydroxide → used in window cleaners.
2	In Medicine	a. Milk of magnesia (magnesium hydroxide) → cures acidity (antacid). b. Sodium bicarbonate (baking soda) → used to neutralize stomach acid.
3	In Industry	a. Sodium hydroxide → used in making paper, textiles, and detergents. Calcium hydroxide → used in whitewashing walls.
4.	Other uses	a. Toothpaste → mild base that neutralizes acids in our mouth. b. Shampoo → contains mild bases to clean hair.

Analysis:

- Food: Acids provide taste, while bases like baking soda help in preparation.
- Health: Acids are part of medicines; bases cure acidity.
- Cleaning: Bases in soaps and detergents keep us hygienic.
- Agriculture & Industry: Acids and bases are essential in fertilizers, textiles, plastics, and batteries.

Conclusion: Acids and bases are not just laboratory chemicals – they are part of our food, medicines, cleaning products, and industries. Understanding their uses helps us apply them safely in daily life.

Resources: Teacher, Text book and Internet

CLASS VI

Aim: Know Your 5 Sense Organs

LAB ACTIVITY

Objective: To understand the five main sense organs in our body and their functions.

Materials Required: Full-size diagram or model of the Human sense organs in our body Procedure:

1. Observe a Human sense-organs in our body
2. Look carefully at the model/chart provided by the teacher.

3. Identify the major sense organs
4. Group Discussion with your classmates about the function of each sense organ
5. Tabulate the main functions of sense organs.

Observation Table:

Sense Organ	Function	Example
Eyes	Help us to see	Watch TV, read books
Ears	Help us to hear	Listen to music or sounds
Nose	Help us to smell	Smell flowers or food
Tongue	Help us to taste	Taste sweet, sour, bitter
Skin	Help us feel touch/temperature	Feel soft, hot, or cold objects

Conclusion: Sense organs are very important for our daily life. They help us to learn, stay safe, and enjoy the world around us.

PROJECT WORK

Name of the Lesson: Types and Uses of Plants

Name of the Project: Types of Plants and Examples

Aim: To understand and explore different types of plants. Objectives:

1. Student able to differentiate different types of plants.
2. To explore the various types of plants in daily life.
3. To give examples of the various types of plants.

Materials Needed: Paper or notebook Pencil, Printed pictures of different plants.

Procedure

Discuss the different types of plants, such as Trees, Shrubs, Herbs, Climbers, and Creepers. Observe their features and identify examples of each type. Record the information in the table given below.

Table: Types of Plants:

S. No.	Type of Plant	Description	Examples
1	Trees	Large plants with a strong trunk and many branches.	Mango, Neem, Banyan
2	Shrubs	Smaller, bushy plants with many branches.	Rose, Hibiscus, Cotton
3	Herbs	Small plants with soft, green stems.	Mint, Coriander, Spinach
4	Climbers	Plants that need support to grow upward.	Money Plant, Grapevine, Pea
5	Creepers	Plants that grow and spread along the ground.	Pumpkin, Watermelon, Muskmelon

Post Project Activity: Collect pictures of different types of plants and paste them in your notebook under the correct category.

Conclusion: At the end of the project, students can present their findings to the class and explain the different types of plants with examples.

Resources: Textbook, Teachers, Different plant pictures