

# PHYSICAL SCIENCE

## Formative Assessment - 1



**Experiments / Lab  
activities / Activities and  
Projects**

**VIII, IX and X Classes**

(2025 - 2026)

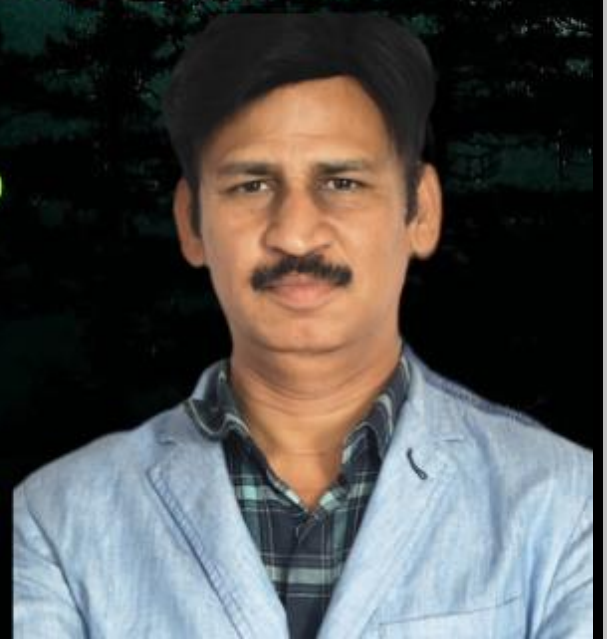
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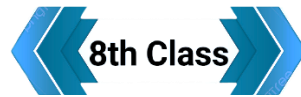
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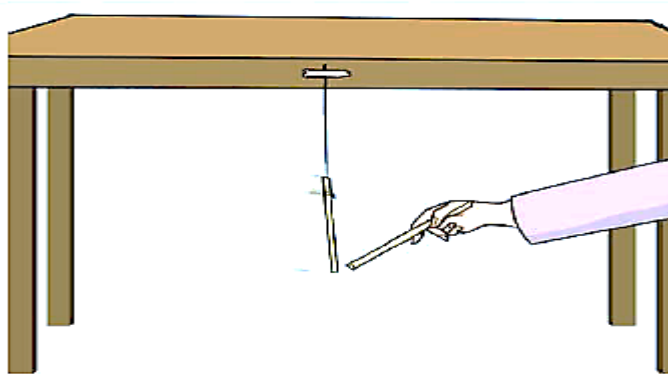
## Experiments

**Experiment - 1**

**Aim:** Electrostatic force comes into play even when the bodies are not in contact.

**Materials required:** Two plastic straws, Thread, A sheet of paper,

- Procedure:**
- 1) Take equal lengths of two plastic straws.
  - 2) Suspend one of the plastic straw from the edge of a table with the help of a piece of thread.
  - 3) Now hold the other plastic straw in your hand and rub its free end with a sheet of paper.
  - 4) Bring the rubbed end of the straw near the suspended straw.
  - 5) Make sure that the two plastic straws do not touch each other.
  - 6) We observed that, two straws are attracting each other.
  - 7) A straw is said to have acquired electrostatic charge after it has been rubbed with a sheet of paper. Such a straw is an example of a charged body.
  - 8) Next, rub the free end of the suspended piece of straw with a sheet of paper.
  - 9) Again, bring the piece of straw that was rubbed earlier with paper near the free end of the suspended straw.
  - 10) We observed that, two straws are repelling each other.
  - 11) Two plastic straws acquired same electric charge.



**Conclusion:** Electrostatic force comes into play even when the bodies are not in contact. The electrostatic force, therefore, is another example of a non-contact force.

**Experiment - 2**

**Aim:** Pressure exerted by liquid at the bottom of the container depends on the height its column.

**Materials required:** Transparent container, Water Ruler or measuring tape, Spring balance or pressure gauge, Stopwatch or timer

**Procedure:**

- 1) Place the transparent container on a flat surface.
- 2) Fill the container with water, ensuring it is completely filled to the brim.
- 3) Use a ruler or measuring tape to measure the initial height ( $h_1$ ) of the water column from the base of the container to the surface of the water.
- 4) Attach the spring balance or pressure gauge to the bottom of the container, ensuring it is securely fastened.
- 5) Start the stopwatch or timer.
- 6) Observe and record the reading on the spring balance or pressure gauge, which indicates

the pressure exerted by the liquid at the bottom of the container.

- 7) Measure the final height ( $h_2$ ) of the water column after a specific time interval (Ex: 30 seconds).
- 8) Repeat steps 5-7 for different time intervals (Ex: 1 minute, 2 minutes) while keeping the initial height constant.
- 9) Repeat steps 3-8 for different initial heights ( $h_1$ ) by adding or removing water from the container.

S.No	$h_1$	$h_2$	$\Delta h = h_2 - h_1$

**Conclusion:** This experiment confirms that the pressure exerted by a liquid at the bottom of a container does depend on the height of its column. By measuring the pressure at different heights and observing the corresponding changes, we can see a direct relationship between the two variables.

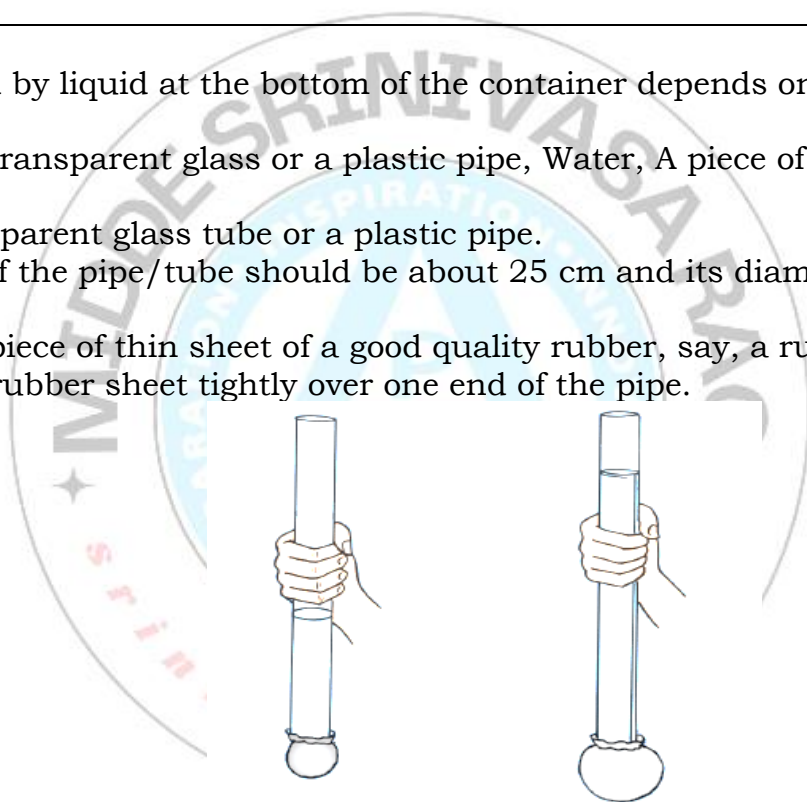
### Experiment - 3

**Aim:** Pressure exerted by liquid at the bottom of the container depends on the height of its column.

**Materials required:** Transparent glass or a plastic pipe, Water, A piece of thin sheet of rubber

**Procedure:**

- 1) Take a transparent glass tube or a plastic pipe.
- 2) The length of the pipe/tube should be about 25 cm and its diameter should be 5-7.5 cm.
- 3) Also take a piece of thin sheet of a good quality rubber, say, a rubber balloon.
- 4) Stretch the rubber sheet tightly over one end of the pipe.



*Fig. 1.14 : Pressure exerted by water at the bottom of the container depends on the height of its column*

- 5) Hold the pipe at the middle, keeping it in a vertical position.
- 6) Ask one of your friends to pour some water in the pipe.
- 7) The rubber sheet bulges out.
- 8) Note also the height of the water column in the pipe.
- 9) Pour some more water.
- 10) Observe again the bulge in the rubber sheet and the height of the water column in the pipe. Repeat this process a few more times.
- 11) We will observe that the bulging of the rubber balloon increase with the increase in height of the liquid column.

**Conclusion:** Pressure exerted by liquid at the bottom of the container depends on the height of its column.

## Experiment - 4

**Aim:** Identifying a substance as coal experimentally.

**Materials required:** Sample suspected to be coal, Bunsen burner or a heat source, Ceramic crucible or a fire-resistant container, Test tubes and test tube holder, Hydrochloric acid (HCl), Water, Balance or scale, A source of ignition (matches or a lighter), Safety goggles and gloves.

### Procedure:

*Visual Examination:*

1. Examine the sample's appearance. Coal is typically black or brownish-black and has a matte or dull luster.
2. Check for any layered or irregular texture on the surface.

*Density Measurement:*

1. Weigh the sample using a balance or scale to determine its mass.
2. Calculate the density by dividing the mass by the volume. If you don't know the volume, you can estimate it based on the sample's dimensions.
3. Compare the calculated density to typical coal densities, which are generally lower than most rocks and minerals.

*Combustion Test:*

1. Ignite a small piece of the sample using a Bunsen burner or a heat source.
2. Observe the flame color and characteristics. Coal typically burns with a yellow or orange flame, releasing carbon dioxide.
3. Note the odor and any visible ash left behind after burning.

*Acid Reaction:*

1. Place a small portion of the sample in a test tube.
2. Add a few drops of hydrochloric acid (HCl) to the sample.
3. Observe if there is any reaction. Coal should not react with the acid, indicating its organic nature.

*Heating Test:*

1. Heat a small sample of the material in a ceramic crucible or fire-resistant container.
2. Observe the material's behavior as it heats up: Coal will release volatile components, such as water vapor or gases, and may shrink in size.
3. Note any change in color or texture.
4. Coal will leave behind ash after heating.

**Conclusion:** Based on the results of the experiments and comparisons, determine whether the material is coal or another substance.

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## Experiment - 5

**Aim:** Identifying inexhaustible and exhaustible natural resources experimentally

**Materials required:** Samples representing potential natural resources (e.g., water, sunlight, fossil fuel, soil), Containers, Measuring instruments (e.g., measuring cups, thermometers, light sensors), Timer or clock

### Procedure:

#### **Part 1: Identification of Inexhaustible Natural Resources**

Inexhaustible natural resources are those that are virtually unlimited in supply and can be replenished naturally over time. Here's how you can identify them experimentally:

##### **1. Water (as an example):**

- a. Fill a container with water (a small basin or beaker).
- b. Set up a simple experiment to measure the rate of water evaporation. You can use a thermometer to monitor the water temperature and a timer to record the time it takes for a noticeable decrease in water level due to evaporation.
- c. Observe and record the results over a period of time (several days or weeks).
- d. Conclude that water is an inexhaustible resource because it can be replenished through natural processes like the water cycle.

#### **Part 2: Identification of Exhaustible Natural Resources**

Exhaustible natural resources are finite and can be depleted over time. Fossil fuels like coal, oil, and natural gas are examples. Here's how you can identify them experimentally:

### 1. Fossil Fuel (as an example):

- Take a small piece of coal, representing a fossil fuel resource.
- Set up a simple experiment to simulate combustion (burning) of the coal. Place the coal in a controlled environment, such as a heat-resistant dish or crucible.
- Ignite the coal using a heat source (e.g., a Bunsen burner or a candle) and observe the combustion process.
- Record the time it takes for the coal to burn completely or to a significant extent.
- Conclude that coal is an exhaustible resource because it can be depleted through consumption and combustion.

**Conclusion:**

- Inexhaustible natural resources like water demonstrated a sustainable supply or the ability to replenish naturally over time.
- Exhaustible natural resources like fossil fuels showed a finite supply and the potential for depletion through consumption.

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## Class room based Projects

### Project – 1

**Title of the Project:** Exploring the Applications of Force and Pressure in Daily Life.

**Aim of the Project:** To investigate and demonstrate how the principles of force and pressure are applied in various real-life situations.

**Hypothesis:** The concepts of force and pressure are widely used in everyday objects and activities to improve efficiency, safety, and functionality.

**Introduction:** Force is a push or pull applied to an object, while pressure is the force exerted per unit area. These concepts are essential in understanding how many tools, machines, and systems work. From sharp knives to hydraulic lifts, force and pressure are applied in numerous ways to make tasks easier and safer. This project explores some common applications of force and pressure in daily life and demonstrates their practical significance.

#### Project:

##### Materials Needed:

- A sharp knife
- A blunt knife
- A nail and a hammer
- A syringe or hydraulic jack (if available)
- A balloon
- A piece of clay or foam
- A ruler or measuring tape

#### Procedure and Applications:

- Sharp vs. Blunt Knife:
  - Use a sharp knife and a blunt knife to cut a piece of clay or foam.
  - Observe which knife cuts more easily and explain why (smaller surface area of a sharp knife increases pressure).
- Hammer and Nail:
  - Hammer a nail into a piece of wood.
  - Observe how the small area of the nail's tip increases pressure, making it easier to penetrate the wood.
- Hydraulic Lift (Using a Syringe):
  - Use a syringe to demonstrate how pressure is transmitted through a fluid to lift a small object.
  - Explain the principle of Pascal's law and its application in hydraulic systems.
- Balloon Pressure:
  - Blow up a balloon and observe how the air pressure inside the balloon increases as it expands.

b) Poke the balloon with a pin to demonstrate how pressure is released suddenly.

### Observations:

1. A sharp knife cuts more easily than a blunt knife due to higher pressure.
2. A nail's small tip exerts high pressure, allowing it to penetrate wood.
3. A syringe demonstrates how pressure can be transmitted to lift objects.
4. A balloon bursts when the pressure inside exceeds its limit.

**Conclusion:** This project highlights the practical applications of force and pressure in daily life. By understanding these concepts, we can explain the working of tools like knives and nails, systems like hydraulic lifts, and even simple objects like balloons. These principles are essential for designing efficient and safe tools and machines, making our lives easier and more convenient.

## PROJECT REPORT

Name of the project:

Class : 8th

Subject : Science

Name of the School:

Time Duration :

Material used : Internet, Newspapers and 8<sup>th</sup> class physical science book.

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### Project - 2

**Title of the Project: Formation of Petroleum: Nature's Liquid Gold**

**Aim of the project:** Formation of Petroleum

**Hypothesis:** Petroleum, often referred to as "liquid gold," is a valuable natural resource that powers our modern world.

**Introduction:** Understanding how petroleum forms is essential to appreciate its significance. Petroleum originates from organic materials buried deep within the Earth and undergoes a transformation over millions of years, ultimately resulting in the formation of this precious resource.

1. **Source Material:** Petroleum primarily originates from the remains of ancient marine organisms such as plankton and algae. These microorganisms accumulated at the bottom of ancient oceans and seas.
2. **Deposition:** Over time, layers of sediment accumulated on top of these organic remains. The pressure from these layers compressed the organic material, causing it to become buried deeper within the Earth's crust.
3. **Heat and Pressure:** As the organic material sank deeper into the Earth's crust, it encountered increasing heat and pressure. This combination of high temperatures and pressure initiated a process called "diagenesis," which transforms the organic material into a waxy substance called kerogen.
4. **Cooking Process (catogenesis):** Further burial and increased temperature transform kerogen into hydrocarbons. This process, known as catagenesis, involves the cracking of long-chain hydrocarbons in kerogen into shorter and more complex hydrocarbons like oil and natural gas.
5. **Migration:** Once formed, petroleum tends to migrate through porous rock layers, seeking reservoirs where it can accumulate. The movement of petroleum is driven by buoyancy and geological structures.
6. **Trapping:** Petroleum is usually found in reservoirs trapped beneath impermeable rocks, like shale or salt domes. These geological traps prevent the oil and gas from escaping to the surface.
7. **Maturation:** Over millions of years, petroleum continues to mature, with some components breaking down into natural gas, while others remain as liquid crude oil.

8. **Exploration and Extraction:** To access petroleum, exploratory drilling is conducted to locate and extract it from reservoirs deep underground.

**Conclusion:** The formation of petroleum is a remarkable geological process that takes millions of years. It begins with the accumulation of organic material from ancient marine life, undergoes heat and pressure-driven transformations, and ultimately leads to the creation of valuable oil and gas deposits. Understanding this process is crucial for efficient petroleum exploration and the sustainable management of this vital natural resource.

### PROJECT REPORT

Name of the project:

Class : 8th

Subject : Science

Name of the School:

Time Duration :

Material used : Internet, Newspapers and 8<sup>th</sup> class physical science book.

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## **Project – 3**

**Title of the Project: The function of major thermal power plants in India.**

**Aim of the Project:** Collect information on major thermal power plants.

**Hypothesis:** Generate electric energy from thermal energy

**Introduction:** The functioning of major thermal power plants in India involves a series of steps and processes to generate electricity from thermal energy. Here's a general overview of how these power plants operate.

1. Fuel Supply:

- Thermal power plants primarily use coal, natural gas, or oil as fuel sources.
- The fuel is transported to the power plant site and stored in large stockpiles or storage tanks.

2. Combustion Process:

- The fuel is burned in a combustion chamber, typically within a boiler, to produce high-temperature and high-pressure steam.

3. Steam Generation:

- Water is heated to produce steam using the heat generated from the combustion process.
- The high-pressure steam is directed to a steam turbine.

4. Steam Turbine:

- The steam turbine is connected to a generator.
- As the high-pressure steam flows through the turbine, it causes the turbine blades to rotate.

5. Electricity Generation:

- The rotation of the turbine drives the generator, which converts mechanical energy into electrical energy.
- This electricity is then transmitted to the grid for distribution to consumers.

6. Cooling:

- The steam exiting the turbine is condensed back into water in a condenser.
- Cooling water, often from a nearby river or cooling tower, is used to reduce the temperature of the steam.

7. Steam Cycle:

- The water, now in liquid form, is returned to the boiler to repeat the steam generation cycle.
- This closed-loop system ensures efficient use of water.

8. Emissions Control:

- Thermal power plants employ various technologies to control emissions of pollutants, such as sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and particulate matter.

- Technologies like flue gas desulfurization (FGD) and selective catalytic reduction (SCR) help reduce air pollution.

#### 9. Ash Handling:

- In coal-fired power plants, ash is produced as a byproduct of combustion.
- Ash handling systems collect and transport the ash to ash ponds or for disposal.

#### 10. Environmental Compliance: -

- Power plants must adhere to environmental regulations and obtain necessary permits to operate.
- Regular monitoring and reporting of emissions and compliance with emission limits are essential.

**Conclusion:** It's important to note that while the general process remains consistent, the specific operations of thermal power plants can vary depending on factors such as the type of fuel used (coal, natural gas, or oil), the size and capacity of the plant, and the technology employed.

### PROJECT REPORT

Name of the project :

Class : 8<sup>th</sup> class

Subject : Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 8<sup>th</sup> class textbook

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### **Project - 4**

**Title of the Project: Exploring the Relationship Between Force and Pressure.**

**Aim of the Project:** To investigate how the amount of force applied and the area over which it is applied affect the pressure exerted on a surface.

**Hypothesis:** If the force applied increases while the area of contact remains constant, the pressure will increase. Similarly, if the area of contact increases while the force remains constant, the pressure will decrease.

#### **Introduction:**

Force is a push or pull applied to an object, and pressure is the force exerted per unit area. The relationship between force and pressure can be described by the formula:

$$\text{Pressure} = \text{Force}/\text{Area}$$

#### **Project Work:**

Materials Needed:

- A brick or wooden block
- A spring balance or force meter
- A soft surface (e.g., clay, foam, or sand)
- A ruler or measuring tape

#### **Procedure:**

##### 1. Effect of Force on Pressure:

- Place the brick on its largest surface area (lying flat) on the soft surface.
- Use a spring balance to apply a small 5 N force vertically downward on the brick.
- Measure the depth of the impression made on the soft surface.
- Repeat the experiment by increasing the force of 10 N, 15 N and record the depth of the impression each time.

##### 2. Effect of Area on Pressure:

- Place the brick in two different orientations:
- Orientation 1: Largest surface area (lying flat).
- Orientation 2: Smallest surface area (standing on edge).
- Apply the same 10 N force in both orientations.
- Measure and compare the depth of the impressions made on the soft surface.

Observations:

- As the force increases, the depth of the impression increases, indicating higher pressure.
- When the area of contact is smaller, the depth of the impression is greater, indicating higher pressure.

**Conclusion:** Increasing force or decreasing the area of contact will result in higher pressure. This principle explains the design of sharp knives, pointed nails, and wide tires for heavy vehicles. Understanding this relationship helps us make informed decisions in designing tools and equipment for everyday use.

### PROJECT REPORT

Name of the project :

Class : 8<sup>th</sup> class

Subject : Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 8<sup>th</sup> class textbook

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## 9th Class

## Experiments

**Experiment - 1**

**Aim:** Testing that the particles of matter are very small.

**Materials required:** Transparent measuring beakers, Potassium permanganate crystals, Water, Spoon, Test tubes

**Procedure:**

- 1) Take 2-3 crystals of potassium permanganate and dissolve them in 100 mL of water.
- 2) Take out approximately 10 mL of this solution and put it into 90 mL of clear water.
- 3) Take out 10 mL of this solution and put it into another 90 mL of clear water.
- 4) Keep diluting the solution like this 5 to 8 times.
- 5) The water remains coloured till the last dilution.
- 6) This experiment shows that just a few crystals of potassium permanganate can colour a large volume of water (about 1000L).



- 7) So we conclude that there must be millions of tiny particles in just one crystal of potassium permanganate, which keep on dividing themselves into smaller and smaller particles.
- 8) The same activity can be done using 2 ml of Dettol instead of potassium permanganate.
- 9) The smell can be detected even on repeated dilution.

**Conclusion:** The particles of matter are very small. They are small beyond our imagination.

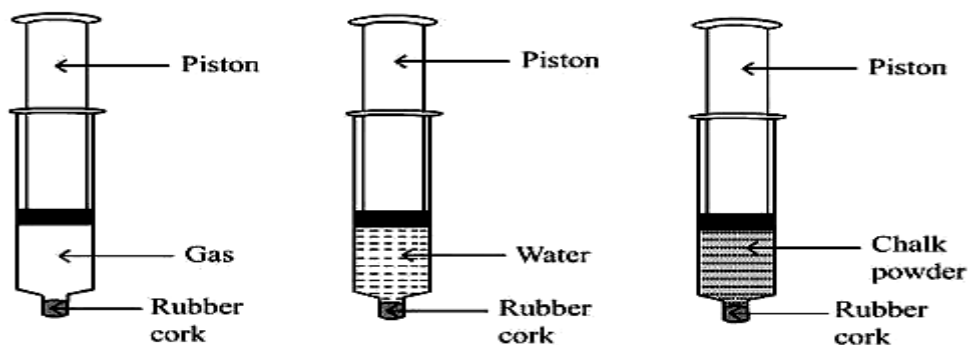
**Experiment - 2**

**Aim:** The gases are highly compressible as compared to solids and liquids.

**Materials required:**

**Procedure:**

- 1) Take three 100 mL syringes and close their nozzles by rubber corks, as shown in Figure



- 2) Remove the pistons from all the syringes.
- 3) Leaving one syringe untouched, fill water in the second and pieces of chalk in the third.

- 4) Insert the pistons back into the syringes. You may apply some vaseline on the pistons before inserting them into the syringes for their smooth movement.
- 5) Now, try to compress the content by pushing the piston in each syringe.
- 6) The piston was pushed in easily in the syringe in which nothing except air was filled.
- 7) Gases can be compressed easily.

**Conclusion:** We have observed that gases are highly compressible as compared to solids and liquids.

### Experiment - 3

**Aim:** Shows that particles of matter are continuously moving

**Required materials:** Two glasses/ beakers, Blue or Red ink, Honey

**Procedure:**

1. Take two glasses/beakers filled with water.
2. Put a drop of blue or red ink slowly and carefully along the sides of the first beaker and honey in the same way in the second beaker.
3. Leave them undisturbed in your house or in a corner of the class.
4. Record your observations.
5. The colour of ink starts spreading soon.
6. The honey drops slowly disappear.
7. The colour of ink spreads evenly throughout the water within a few minutes.

**Observation:** Particles of matter are continuously moving.

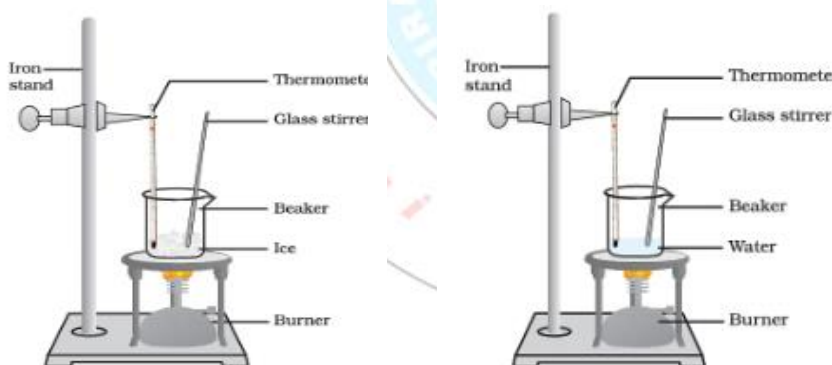
### Experiment - 4

**Aim:** The state of matter is affected by changing temperature.

**Materials required:** Beaker, Laboratory thermometer, Ice, Burner, Glass rod

**Procedure:**

- 1) Take about 150 g of ice in a beaker and suspend a laboratory thermometer so that its bulb is in contact with the ice, as in Figure.



- 2) Start heating the beaker on a low flame.
- 3) Note the temperature when the ice starts melting.
- 4) Note the temperature when all the ice has converted into water.
- 5) The ice melts at  $0^{\circ}\text{C}$ . All the ice gets conversion from solid to liquid state.
- 6) Now, put a glass rod in the beaker and heat while stirring till the water starts boiling.
- 7) Keep a careful eye on the thermometer reading till most of the water has vaporised.
- 8) The water starts boiling at  $100^{\circ}\text{C}$  and gets converted into vapours at the same temperature.

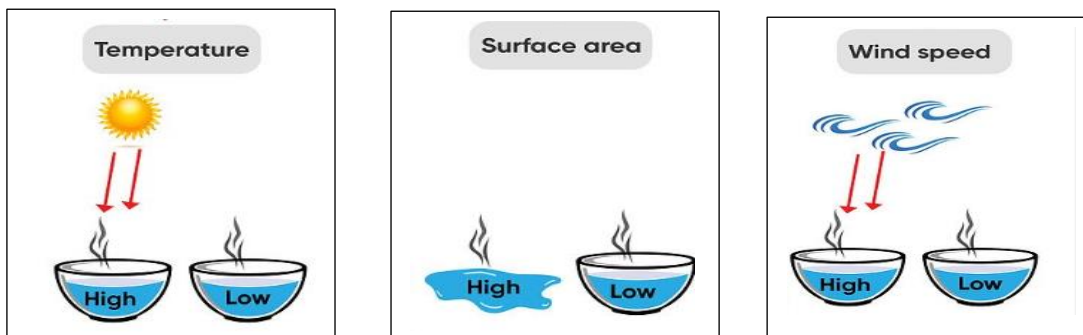
**Conclusion:** On increasing the temperature of solids, the kinetic energy of the particles increases. Due to the increase in kinetic energy, the particles start vibrating with greater speed. The energy supplied by heat overcomes the forces of attraction between the particles. The particles leave their fixed positions and start moving more freely. The state of matter is affected by changing temperature.

## Experiment - 5

**Aim:** Evaporation depends on temperature, surface area and speed of wind.

**Materials required:** Test tube, China dish, Fan, Thermometer

**Procedure:**



- 1) Take 5 mL of water in a test tube and keep it near a window or under a fan.
- 2) Take 5 mL of water in an open china dish and keep it near a window or under a fan.
- 3) Take 5 mL of water in an open china dish and keep it inside a cupboard or on a shelf in your class.
- 4) Record the room temperature.
- 5) Record the time or days taken for the evaporation process in the above cases.
- 6) Repeat the above three steps of activity on a rainy day and record your observations.
- 7) Evaporation will be fastest from the china dish kept near window.
- 8) The evaporation increases with temperature, surface area of the container and speed of wind.

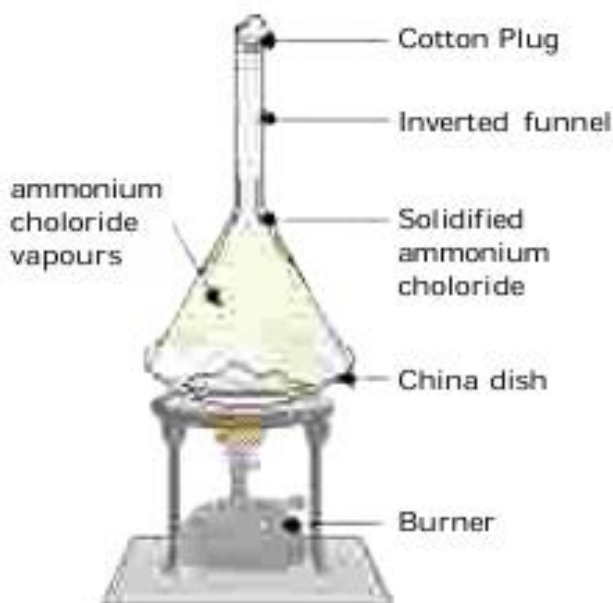
**Conclusion:** Evaporation depends on temperature, surface area and speed of wind.

## Experiment - 6

**Aim:** To study the changes in state of Sublimate solids on heating.

**Required materials:** Camphor/Ammonium chloride, China dish, Funnel.

**Procedure:**



1. Take some camphor or ammonium chloride. Crush it and put it in a china dish.
2. Put an inverted funnel over the china dish.
3. Put a cotton plug on the stem of the funnel, as shown in figure.
4. Now, heat slowly and observe.
5. Vapour of ammonium chloride get deposited on the inner stem of funnel.

**Observation:** Solid ammonium chloride gets converted into vapours directly.

## Project – 1

**Title of the Project: Graphical Representation of Motion: Applications in Daily Life.**

**Aim of the Project:** To explore and demonstrate how graphical representation of motion (distance-time and velocity-time graphs) helps in understanding and analyzing real-life motion scenarios.

**Hypothesis:** Graphical representation of motion can provide a clear and visual understanding of the nature of motion, including speed, direction, and acceleration, which can be applied to analyze everyday movement.

**Introduction:**

Motion is a fundamental concept in physics, and it can be represented graphically using distance-time and velocity-time graphs. These graphs help us visualize and analyze the motion of objects in terms of speed, direction, and acceleration. In daily life, understanding motion graphically is essential in fields like transportation, sports, and even pedestrian safety. This project explores real-life examples where motion graphs are applied and demonstrates their significance.

**Project:**

Materials Needed:

- A stopwatch or timer
- A measuring tape
- A small toy car or ball
- Graph paper or graphing software
- A ruler or pen

**Procedure:**

1. Distance-Time Graph:

- Measure a distance of 10 meters on a flat surface.
- Roll a toy car or ball along the measured distance.
- Record the distance traveled at regular intervals (Example: every 2 seconds).
- Plot a distance-time graph using the collected data.
- Analyze the graph to determine the speed of the object.

2. Velocity-Time Graph:

- Push a toy car or ball on a flat surface to accelerate it.
- Measure its velocity at regular intervals (Example: every 2 seconds) using the distance covered.
- Plot a velocity-time graph using the data.
- Analyze the graph to determine acceleration and deceleration.

3. Real-Life Applications:

- Explain how distance-time graphs are used in GPS systems to calculate travel time.
- Discuss how velocity-time graphs help in analyzing vehicle speed and braking distance for road safety.
- Demonstrate how motion graphs are used in sports to analyze an athlete's performance.

**Observations:**

- The distance-time graph shows a straight line for constant speed and a curve for changing speed.
- The velocity-time graph indicates acceleration when the line slopes upward and deceleration when it slopes downward.
- Motion graphs help in understanding and predicting real-life motion scenarios.

**Conclusion:** Distance-time and velocity-time graphs help us understand speed, direction, and acceleration, which are essential for applications in transportation, safety, and sports.

## PROJECT REPORT

Name of the project :  
Class : 9<sup>th</sup> class  
Subject : Science  
Name of the School :  
Time Duration :  
Material Used : Internet, Newspapers and 9<sup>th</sup> class textbook

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### **Project – 2**

**Title of the Project:** Understanding the Importance of Equations of Motion in Real Life

**Aim of the Project:** To study the use and significance of equations of motion in understanding and solving problems related to moving objects.

**Hypothesis:** Equations of motion help us to predict the position, velocity, and time of moving objects and are useful in many real-life applications like driving, sports, and space science.

**Introduction:** Equations of motion describe the relationship between displacement, velocity, acceleration, and time for an object moving with uniform acceleration. These equations are widely used in physics to analyze the motion of vehicles, athletes, projectiles, and more.

There are three equations of motion:

$$1. v = u + at$$

$$2. s = ut + \frac{1}{2}at^2$$

$$3. v^2 = u^2 + 2as$$

Where:

u = initial velocity

v = final velocity

a = acceleration

s = displacement

t = time

#### **Project:**

##### **1. Driving Vehicles:**

Drivers use these principles unconsciously. For example, how long it takes to stop a car when brakes are applied depends on initial speed and deceleration.

##### **2. Sports and Athletics:**

Coaches analyze athletes' motion using these equations to improve performance (Example: sprinter's acceleration).

##### **3. Projectile Motion (Cricket/Football):**

Calculating how far or high a ball will travel can be done using the equations of motion.

##### **4. Space and Rocket Launches:**

Scientists use these equations to calculate the speed, time, and distance of rockets and satellites.

##### **5. Accident Investigation:**

Police use motion equations to estimate speed and time of impact in accidents.

**Conclusion:** Equations of motion are essential tools in physics. They help us to accurately describe and predict how objects move. Their applications in transport, sports, engineering, and space science prove their practical importance in our daily lives.

## PROJECT REPORT

Name of the project :  
Class : 9<sup>th</sup> class  
Subject : Science  
Name of the School :  
Time Duration :  
Material Used : Internet, Newspapers and 9<sup>th</sup> class textbook

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## Project – 3

**Title of the Project:** The effect of evaporation on daily Life situations.

**Aim of the Project:** To study the effect of evaporation on daily life situations.

**Hypothesis:** Evaporation is a cooling process and surface phenomena.

**Evaporation:** Evaporation is a surface phenomenon. Particles from the surface gain enough energy to overcome the forces of attraction present in the liquid and change into the vapour state.

The rate of evaporation depends upon the surface area exposed to the atmosphere, the temperature, the humidity and the wind speed.

**The effect of evaporation on daily life situations: -**

### 1. Drying Clothes under The Sun:

When the wet clothes are put under the sun, they get heated up resulting in the evaporation of water particles present in wet clothes; making the clothes dry.

### 2. Ironing of Clothes:

The hot iron evaporates the water vapors present in the fabric of clothes, which help to iron the clothes well.

### 3. Cooling Down of Hot Tea and Other Hot Liquids:

Heat loss happens as the water evaporates resulting in the cooling down of the tea and other such beverages.

### 4. Wet Floors:

The simple answer is that the water is evaporated because of the heat and making the floor completely dry.

### 5. Preparation of Common Salt:

Preparation of common salt is also a widespread example of the evaporation. The seawater goes under the evaporation, which results in the formation of salt crystals.

### 6. Evaporation of Nail Paint Remover:

The acetone present in the nail paint remover takes the heat of our bodies and evaporates.

### 7. Drying of Wet Hair:

The only possible immediate solution is drying up of hair with the hairdryer. The water vapor of wet hair evaporates due to the heat of the sun or heat of the hairdryer.

### 8. Drying up of Different Water Bodies:

The water from different water bodies mostly get dried up during the hot summers and gets refilled only after rain.

### 9. Evaporation of Sweat from Body:

On a hot summer day, the sweat from the skin evaporates due to the high temperature of the environment, taking a little bit of body heat. Thus, it results in the cooling effect.

### 10. Distillation Process:

Distillation is a process in which the different components of the liquid is separated by the boiling and the condensation. Thus, in this process too, the evaporation performs the main role.

### 11. Working of a Pressure Cooker:

During cooking, a lot of heat is produced inside a pressure cooker, and with its whistle, the steam comes out by evaporation; making a perfect dish for us.

### 12. Brings Rain:

The initial stage under the water cycle process is evaporation. The other process like condensation, sublimation, precipitation, transpiration, runoff, and infiltration comes after the evaporation process. So, if evaporation is not there then this water cycle would remain incomplete.

**Conclusion:** Evaporation is a natural phenomenon that occurs in liquids. Evaporation is a part of human life.

## PROJECT REPORT

Name of the project :

Class : 9<sup>th</sup> class

Subject : Science

Name of the School :

Time Duration :  
Material Used : Internet, Newspapers and 9<sup>th</sup> class textbook

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## Project – 4

### **Title of the Project: Evaporation and Factors Affecting Evaporation**

**Aim of the Project:** To study the process of evaporation and factors affecting evaporation.

**Hypothesis:** Evaporation is a cooling process and surface phenomena.

**Evaporation:** Evaporation is a surface phenomenon. Particles from the surface gain enough energy to overcome the forces of attraction present in the liquid and change into the vapour state.

The rate of evaporation depends upon the surface area exposed to the atmosphere, the temperature, the humidity and the wind speed.

Each of these factors affecting evaporation have been explained in detail below.

#### **1) Temperature**

When the temperature of the liquid (water, in this case) is increased, it results in an increase in the kinetic energy of the individual molecules that constitute the liquid. This increase in energy makes it easier for the liquid molecules to overcome the intermolecular forces of attraction (that holds the liquid together) and escape into the atmosphere as a gas. It can be noted that the temperature of the surrounding can also contribute towards faster evaporation since hot environments can transfer their heat to the liquid.

#### **2) Surface Area Occupied by the Liquid**

Evaporation is a surface phenomenon, which implies that the process only occurs at the surface of the liquid. During evaporation, the molecules of the liquid that are present at its surface overcome the intermolecular forces of attraction to break away from the liquid and escape into the atmosphere as a gas (or vapour).

Liquids are known to not have any definite shape – they assume the shape of their container. Therefore, the greater the surface area of the container (or the greater the surface occupied by the liquid), the greater the number of liquid molecules present at the surface. The larger the number of liquid molecules are at the surface, the larger the number of molecules that will break away from the liquid and become a gas at a given point of time, which contributes to an increase in the rate of evaporation.

#### **3) Humidity of the Surrounding**

There is a limit to how much water vapour the atmosphere can hold. This limit is proportional to the temperature (which implies that hot air can hold more water vapour than cold air). Evaporation can be viewed as an equilibrium process through which the amount of water vapour in the atmosphere reaches an equilibrium with the amount of water in the surface of the liquid. Therefore, the greater the amount of water vapour in the atmosphere over the liquid, the slower the rate of evaporation.

#### **4) Air Circulation or Wind Speed**

Evaporation increases the humidity of the atmosphere that immediately surrounds the liquid. This humid air takes some time to dissipate into the rest of the atmosphere. The presence of a breeze, a powerful wind, or some other form of air circulation can speed up this process and make the environment of the liquid less humid. Therefore, by decreasing the humidity of the liquid's surrounding, a powerful breeze or wind can increase the rate at which the liquid evaporates.

**Conclusion:** we collect the data about the factors which depend on evaporation in our daily life.

### PROJECT REPORT

Name of the project :  
Class : 9<sup>th</sup> class  
Subject : Science  
Name of the School :  
Time Duration :  
Material Used : Internet, Newspapers and 9<sup>th</sup> class textbook

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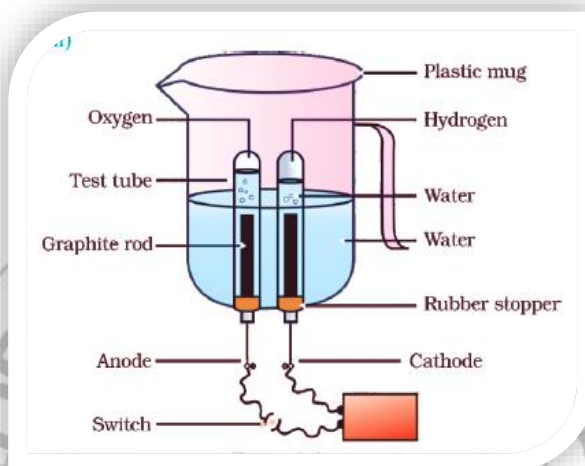


## Experiments

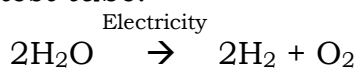
### Experiment -1

**Aim:** Electrolysis of water.

**Apparatus:** Plastic mug, Water, Test tubes, Graphite rods, Rubber stoppers, 6V Battery, Switch, Sulphuric acid.



- Procedure:**
1. Take a plastic mug. Drill two holes at its base and fit rubber stoppers in these holes. Insert carbon electrodes in these rubber stoppers.
  2. Connect these electrodes to a 6 volt battery. Fill the mug with water such that the electrodes are immersed.
  3. Add a few drops of dilute sulphuric acid to the water. Take two test tubes filled with water and invert them over the two carbon electrodes.
  4. Switch on the current and leave the apparatus undisturbed for some time.
  5. Once these test tubes are filled with the gases, carefully remove them from the mug.
  6. Take a glowing candle near the mouth of the test tubes.
  7. The candle fire and burns with a pop sound, showing the presence of hydrogen gas in the test tube.
  8. The candle starts to burn brightly, showing the presence of oxygen gas in the test tube.



- Observation:**
1. Hydrogen gas is liberated at the cathode while Oxygen gas is liberated at the anode.
  2. The hydrogen gas volume is twice the oxygen gas volume contained in the other test tube.

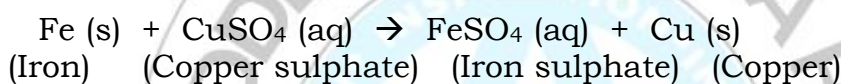
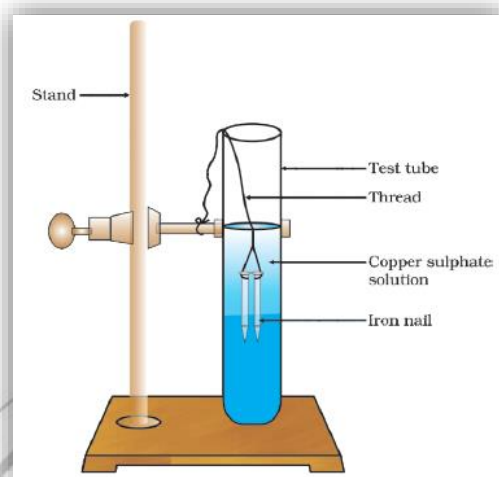
### Experiment -2

**Aim:** To Demonstrate the iron has displaced copper from copper sulphate solution.

**Apparatus:** Test tubes, Iron nails, Copper sulphate solution, Sandpaper.

- Procedure:**
1. Take 3 iron nails and clean them by rubbing with sandpaper.
  2. Take 2 test tubes marked as A and B.
  3. In each test tube, take about 10 ml copper sulphate solution.

4. Tie 2 iron nails with a thread and immerse them carefully in the copper sulphate solution in the tube B for about 20 minutes.
5. Keep one iron nail aside for comparison.
6. After 20 minutes, take out the iron nails from the copper sulphate solution.
7. Compare the intensity of the blue colour of copper sulphate solutions in test tubes A and B.
8. Compare the colour of the iron nails dipped in the copper sulphate solution with the one kept aside.



- Observation:**
1. The iron nail become brownish in colour and the blue colour of copper sulphate solution fades.
  2. Iron has displaced another copper element from copper sulphate solution.

### Experiment -3

**Aim:** To demonstrate double displacement reaction.

**Apparatus:** Sodium sulphate solution, Barium chloride solution, Test tubes

- Procedure:**
1. Take about 3 ml of Sodium sulphate solution in test tube.
  2. In another test tube, take about 3 ml of Barium chloride solution.
  3. Mix the solutions properly.

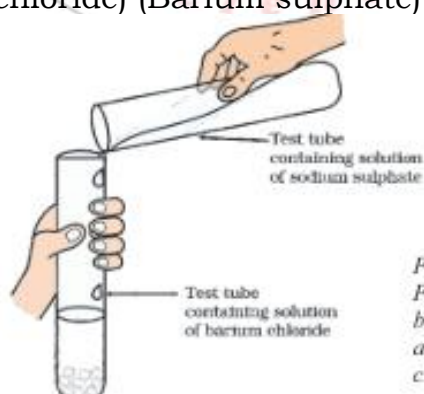
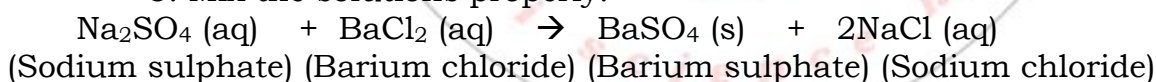


Figure 1.9  
Formation of  
barium sulphate  
and sodium  
chloride

- Observation:**
1. Insoluble white precipitate Barium sulphate is formed by the reaction of  $\text{SO}_4$  and  $\text{Ba}^{2+}$ .
  2. Exchange of ions between the reactants.

## Experiment -4

**Aim:** Formation of hydrogen gas by the action of dilute Sulphuric acid on zinc granules.

**Apparatus:** Conical flask/Test tube, Cork, Glass tube, Zinc granules, dilute sulphuric acid/hydrochloric acid.

**Procedure:**

1. Take a few Zinc granules in a conical flask or a test tube.
2. Add dilute hydrochloric acid or sulphuric acid to this.

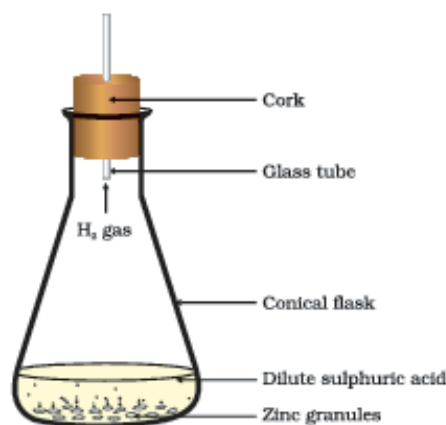


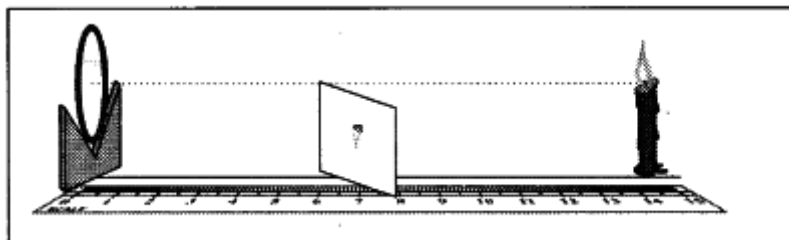
Figure 1.2  
Formation of hydrogen gas by the action of dilute sulphuric acid on zinc

**Observation:** We observe that, hydrogen gas is evolved.

## Experiment -5

**Aim:** To study the formation of images by concave mirror by an object at different positions on its principal axis.

**Apparatus:** Conacave mirror, Metre scale, Chalk piece, Burning candle, Paper screen.



**Procedure:** 1. Take a concave mirror of known focal length.

2. Mark a line on a Table with a chalk. Place the concave mirror on a stand. Place the stand over the line such that its pole lies over the line.
3. Draw with a chalk two more lines parallel to the previous line such that the distance between any two successive lines is equal to the focal length of the mirror. These lines will now correspond to the positions of the points P, F and C respectively.
4. Keep a bright object, say a burning candle, at a position far beyond C. Place a paper screen and move it in front of the mirror till you obtain a sharp bright image of the candle flame on it.
5. Observe the image carefully. Note down its nature, position and relative size with respect to the object size.
6. Repeat the activity by placing the candle – ( a ) beyond C , ( b ) at C, ( c ) between F and C, ( d ) at F, and ( e ) between P and F.
7. In one of the cases, you may not get the image on the screen. Identify the position of the object in such a case. Then, look for its virtual image in the mirror itself.
8. Note down and tabulate your observations.

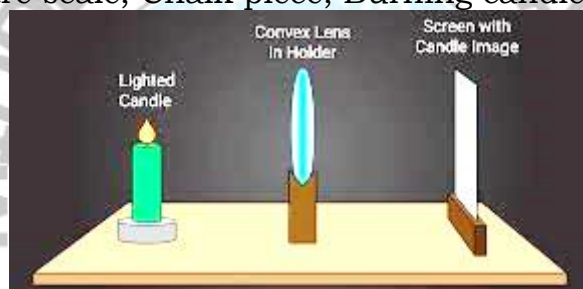
Position of the object	Position of the image	Size of the image	Nature of the image
At infinity	At the focus F	Highly diminished point-sized	Real and inverted
Beyond C	Between F and C	Diminished	Real and inverted
At C	At C	Same size	Real and inverted
Between C and F	Beyond C	Enlarged	Real and inverted
At F	At infinity	Highly enlarged	Real and inverted
Between P and F	Behind the mirror	Enlarged	Virtual and erect

**Observation:** We observe that the nature, position and size of the image formed by a concave mirror depends on the position of the object in relation to points.

## Experiment -6

**Aim:** To study the formation of images by convex lens by an object at different positions on its principal axis.

**Apparatus:** Convex lens, Metre scale, Chalk piece, Burning candle, Paper screen.



**Procedure:** 1. Take a convex lens of known focal length.

2. Mark a line on a Table with a chalk. Place the convex lens on a stand. Place the stand over the line such that its pole lies over the line.
3. Draw with a chalk two more lines parallel to the previous line such that the distance between any two successive lines is equal to the focal length of the lens. These lines will now correspond to the positions of the points O, F and C respectively.
4. Keep a bright object, say a burning candle, at a position far beyond C. Place a paper screen and move it other side of the lens till you obtain a sharp bright image of the candle flame on it.
5. Observe the image carefully. Note down its nature, position and relative size with respect to the object size.
6. Repeat the activity by placing the candle – (a) beyond C, (b) at C, (c) between F and C, (d) at F, and (e) between O and F.
7. In one of the cases, you may not get the image on the screen. Identify the position of the object in such a case. Then, look for its virtual image in the lens itself.
8. Note down and tabulate your observations.

Position of the object	Position of the image	Relative Size of the image	Nature of the image
At infinity	At the focus $F_2$	Highly diminished, point-sized	Real and inverted
Beyond $2F_1$	Between $F_2$ and $2F_2$	Diminished	Real and inverted
At $2F_1$	At $2F_2$	Same size	Real and inverted
Between $F_1$ and $2F_1$	Beyond $2F_2$	Enlarged	Real and inverted
At Focus $F_1$	At infinity	Infinitely large or Highly enlarged	Real and inverted
Between P and optical centre O	Behind the mirror of the lens as the object	Enlarged	Virtual and erect

**Observation:** We observe that the nature, position and size of the image formed by a convex lens depends on the position of the object in relation to points.

## Class room based Projects

### Project – 1

**Title of the Project:** Understanding the Importance of Chemical Reactions in Daily Life

**Aim of the Project:** To explore how chemical reactions play a crucial role in everyday life and the natural world.

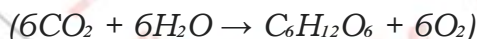
**Hypothesis:** Chemical reactions are essential for basic life processes, industrial development, and environmental changes.

**Introduction:** Chemical reactions are changes that transform substances into new products with different properties. These reactions are not limited to laboratories—they occur around us all the time. From digestion in our body to rusting of iron, from cooking food to producing electricity in batteries, all involve chemical reactions.

**Project:**

#### 1. Photosynthesis:

Green plants use sunlight to convert carbon dioxide and water into glucose and oxygen.



→ Essential for food production and oxygen.

#### 2. Digestion of Food:

Our stomach uses acids and enzymes to break down food into simpler substances.

→ Provides energy for the body.

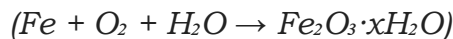
#### 3. Combustion of Fuels:

Burning petrol, diesel, or LPG is a chemical reaction that releases energy.

→ Used in vehicles, cooking, and power generation.

#### 4. Rusting of Iron:

A slow chemical reaction between iron, water, and oxygen.



→ Important to understand and prevent in construction.

#### 5. Formation of Medicines:

Pharmaceutical industries use chemical reactions to create life-saving drugs.

→ Critical for healthcare and treatment.

#### 6. Neutralization Reaction:

- Mix baking soda with vinegar in a test tube.

- Observe the fizzing reaction, which produces carbon dioxide gas.

- Neutralization reactions are used in antacids to relieve acidity.

## 7. Cleaning Action of Soap:

- Add a few drops of oil to water and observe how it does not mix.
- Add soap or detergent and stir, observing how the oil mixes with water.
- Soap molecules chemically react with oil and water to clean surfaces.

**Conclusion:** Chemical reactions are the foundation of life and technology. They help us understand natural phenomena, produce useful materials, generate energy, and improve human life. Recognizing their importance encourages us to study them deeply and use them responsibly.

## PROJECT REPORT

Name of the project :

Class : 10<sup>th</sup> class

Subject : Physical Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 10<sup>th</sup> class textbook

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## Project – 2

**Title of the Project: Applications of reflection of light in various fields**

**Aim of the Project: Application of reflection of light in various fields.**

**Hypothesis:** The reflection of light finds numerous applications across various fields, enabling diverse functionalities and technologies.

**Introduction:**

**Optics and Imaging:**

1. **Mirrors in Optics:** Mirrors, both concave and convex, are extensively used in telescopes, microscopes, and cameras to reflect and focus light for magnification, imaging, and visual observation.
2. **Reflective Telescopes:** Reflecting telescopes use mirrors to gather and focus light, enabling astronomers to observe distant celestial objects.
3. **Rear view and Side Mirrors:** In vehicles, mirrors are crucial for providing drivers with a clear view of their surroundings, aiding in safe navigation.

**Lighting and Illumination:**

1. **Fiber Optic Technology:** Mirrors and reflective surfaces play a role in guiding and redirecting light in fiber optic cables, allowing for high-speed transmission of data in telecommunications.
2. **Reflectors in Lighting:** Reflectors are employed in lamps and lighting fixtures to redirect light, ensuring better illumination in specific areas or to enhance efficiency by directing light where needed.

**Architecture and Design:**

1. **Skylights and Light Wells:** Architectural designs incorporate reflective surfaces to redirect natural light into buildings, reducing the need for artificial lighting during the day.
2. **Reflective Coatings:** Reflective materials and coatings on buildings or surfaces help manage heat absorption, keeping structures cooler in sunny climates.

**Solar Energy:**

1. **Solar Reflectors:** Mirrors and reflective surfaces are used in solar power plants to concentrate sunlight onto solar panels or collectors, maximizing energy production.

**Scientific Applications:**

1. **Spectroscopy:** Reflection and dispersion of light are essential in spectrometers, enabling the analysis of materials' composition by separating light into its component wavelengths.
2. **Optical Experiments:** Reflection is utilized in various optical experiments to understand the behavior of light, such as in mirrors, lenses, and prisms.

**Art and Display:**

1. **Art Installations:** Artists use mirrors and reflective surfaces creatively in installations and artworks to manipulate light and create visual effects.

2. **Display Technologies:** Reflective displays, such as electronic ink or e-paper, use ambient light reflection for low-power, easy-to-read digital screens.

**Conclusion:** The applications of light reflection span across scientific, technological, artistic, and everyday contexts, showcasing its versatility and significance in enabling various functionalities and innovations in different fields.

### PROJECT REPORT

Name of the project :

Class : 10<sup>th</sup> class

Subject : Physical Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 10<sup>th</sup> class textbook

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## Project – 3

**Title of the Project:** How to reducing of corrosion and protection of articles

**Aim of the Project:** Reducing of corrosion and protection of articles.

**Hypothesis:** Reducing corrosion and protecting articles from its damaging effects is crucial in maintaining the integrity and longevity of metal objects and structures.

**Introduction:** When a metal is attacked by substances around it such as moisture, acids etc. it is said to corrode and this process is called corrosion.

**Reducing of corrosion:**

### 1. Protective Coatings and Paints

Applying protective coatings and paints is one of the most common methods to prevent corrosion. These coatings act as a barrier between the metal surface and the corrosive elements.

**Paints:** Various paints can be applied, including epoxy, polyurethane, and zinc-rich paints, which provide a durable and long-lasting protective layer.

**Varnishes and Lacquers:** Clear coatings that provide a protective layer without altering the appearance of the metal.

**Powder Coating:** A dry finishing process that uses a powder applied electrostatically and then cured under heat, forming a tough, protective layer.

### 2. Galvanization

Galvanization involves coating steel or iron with a layer of zinc, which acts as a protective barrier. Zinc corrodes more slowly than steel and iron, providing sacrificial protection.

**Hot-Dip Galvanization:** The metal is dipped into molten zinc, forming a thick, durable coating.

**Electro galvanization:** Zinc is electroplated onto the metal surface, providing a thinner but uniformly distributed layer.

### 3. Using Corrosion-Resistant Materials

Using materials that are inherently resistant to corrosion can be very effective.

**Stainless Steel:** Contains chromium, which forms a passive layer of chromium oxide that protects against further corrosion.

**Aluminum:** Forms a protective oxide layer that shields the underlying metal.

**Plastic and Composites:** Non-metallic materials that do not corrode and can be used in corrosive environments.

### 4. Regular Maintenance and Cleaning

Regular maintenance and cleaning help remove corrosive substances like salt, dirt, and moisture that can accelerate the corrosion process.

**Cleaning:** Periodically washing metal surfaces with water and mild detergents to remove contaminants.

**Inspection:** Regularly inspecting for signs of corrosion and addressing them promptly.

### 5. Environmental Control

Reducing exposure to corrosive environments can significantly reduce the rate of

corrosion.

**Dehumidification:** Using dehumidifiers in humid environments to reduce moisture.

**Climate Control:** Storing metal objects in controlled environments where temperature and humidity are regulated.

**Avoiding Salt Exposure:** Keeping metals away from saltwater or de-icing salts, or washing off salt residues promptly.

## 6. Design Improvements

Designing structures and components to minimize corrosion can be highly effective.

**Drainage:** Ensuring proper drainage to avoid water accumulation.

**Ventilation:** Allowing air circulation to keep surfaces dry.

## 7. Electroplating

Electroplating involves depositing a layer of metal onto the surface of another metal using an electric current, providing protection and aesthetic appeal.

**Chromium Plating:** Provides a shiny, corrosion-resistant surface.

**Nickel Plating:** Adds a layer of nickel, which is resistant to corrosion and wear.

## 8. Passivation

Passivation is a process that removes surface contaminants and enhances the formation of a protective oxide layer.

**Chemical Passivation:** Using acids or other chemicals to clean the metal surface and promote the formation of a protective oxide layer.

**Conclusion:** Implementing these strategies can significantly reduce corrosion and protect metal articles in various environments. Combining multiple methods, such as using corrosion-resistant materials, applying protective coatings, and regular maintenance, often provides the best protection against corrosion.

### PROJECT REPORT

Name of the project :

Class : 10<sup>th</sup> class

Subject : Physical Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 10<sup>th</sup> class textbook

## Project – 4

**Title of the Project:** Applications of refraction of light in various fields

**Aim of the Project:** Application of refraction of light in various fields.

**Hypothesis:** The refraction of light finds numerous applications across various fields, enabling diverse functionalities and technologies.

**Introduction:**

### 1. Optics and Vision:

- *Eyeglasses and Contact Lenses:* Corrective lenses use refraction to adjust the focal point of light entering the eyes, thereby correcting vision impairments like myopia, hyperopia, and astigmatism.
- *Cameras:* Lenses in cameras refract light to focus images onto the film or sensor, allowing for clear photographs.
- *Microscopes and Telescopes:* These devices use multiple lenses to refract light and magnify small or distant objects for better viewing.

### 2. Medical Field:

- *Endoscopy:* Endoscopes use fiber optics, which rely on total internal reflection and refraction to transmit light through flexible tubes, allowing doctors to view internal organs without invasive surgery.
- *Ophthalmology:* Various diagnostic instruments, such as slit lamps and retinoscopy's, use refraction principles to examine the eye and diagnose conditions.

### 3. Astronomy:

- *Astronomical Telescopes:* Refracting telescopes use lenses to bend and focus light from distant stars and planets, aiding in celestial observations.
- *Atmospheric Refraction:* Understanding how light bends as it passes through Earth's atmosphere helps astronomers correct for atmospheric distortion when observing stars and other celestial bodies.

### 4. Communications:

- *Fiber Optic Cables:* These cables transmit data as light pulses, using refraction and total internal reflection to guide light through glass or plastic fibers with minimal loss over long distances.

### 5. Engineering and Construction:

- *Surveying Instruments:* Theodolites and other surveying instruments use lenses and prisms to accurately measure angles and distances by refracting light.
- *Building Design:* Architects use knowledge of light refraction to design buildings with optimal natural lighting, enhancing energy efficiency and comfort.

### 6. Entertainment:

- *Projectors:* Movie and slide projectors use lenses to refract and focus light, projecting images onto screens for viewing.

### 7. Scientific Research:

- *Spectroscopy:* This technique analyzes the refraction of light to study the composition of substances. It is widely used in chemistry, physics, and astronomy.

### 8. Everyday Applications:

- *Rainbows:* The refraction and dispersion of light in water droplets create rainbows, demonstrating the natural beauty of light phenomena.
- *Mirages:* Atmospheric refraction causes mirages, where light bends due to temperature gradients, creating illusions of water or displaced objects on the horizon.

**Conclusion:** The applications of light refraction span across scientific, technological, artistic, and everyday contexts, showcasing its versatility and significance in enabling various functionalities and innovations in different fields.

### PROJECT REPORT

Name of the project :

Class : 10<sup>th</sup> class

Subject : Physical Science

Name of the School :

Time Duration :

Material Used : Internet, Newspapers and 10<sup>th</sup> class textbook

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# PHYSICAL SCIENCE

## Formative Assessment - 1



**Experiments / Lab  
activities / Activities and  
Projects**

**VIII, IX and X Classes**

(2025 - 2026)

**Visit: srini science mind**

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