

Let's pave the way for learning and  
**Move Forward**

*Class 8*  
**PHYSICS**



State Council of Educational Research and Training (SCERT),  
Kerala  
2022



## *Preface*

Dear students,

The evaluation of the answer scripts of the First Terminal Examination 2022 and the classroom experiences shared by the teachers concerned, have brought to light the fact that our children have suffered some serious learning gap due to the non-availability of proper learning experiences as a result of the unprecedented situation created by the Covid Pandemic from 2019 to 2022. An activity book has been designed to assist children internalize the concepts which they ought to have mastered in the previous classes and with the intention to facilitate further learning. Necessary explanations and activities are included in the booklet to help children bridge the gap. It is hoped that this package will facilitate the learners for self-study or for studying with the help of their teachers and I wish them success in their endeavors to move forward with confidence.

**Director**  
SCERT, Kerala



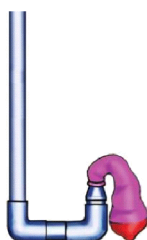
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## LIQUID PRESSURE

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- Objective** : To understand liquid pressure
- Activity** : Experiment, Worksheet
- Materials Required** : Three pieces of one inch PVC pipe of lengths 50 cm, 5 cm (two Pieces), two elbows, a reducer, a polythene bag and balloon.

### Procedure



Arrange these materials as shown in the figure. Fill the smaller pipe with water and fix a balloon there. Now pour water through the open end and observe the change taking place in the balloon.



Tie a polythene bag on your hand and immerse it in a bucket of water as shown in the figure.

- What will be the observed result of the first activity?
- What change will happen to the polythene bag in the second activity?

The reason for the inflation of the balloon fixed to the PVC pipe is also due to the pressure exerted by water.

The polythene bag sticks to the hand because water exerts pressure on all sides of the polythene bag.

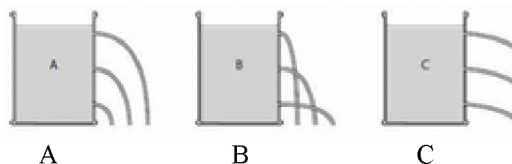
### Inference

- Liquids also have the ability to exert pressure like gases.
- The pressure exerted by a liquid is called liquid pressure.

## Principle / Concept / Law : Liquid pressure

### Worksheet

- The following figure shows three plastic bottles with their tops cut off. Water is flowing through holes from different heights. Observe the figures and answer the following questions.



- Identify the correct figure.
- Justify your answer.

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## AIR PRESSURE

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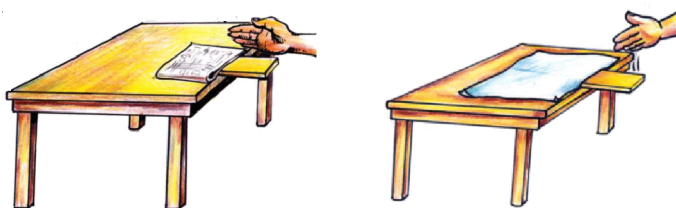
**Objective** : To understand the air pressure.

**Activity** : Experiment, completing the work sheet.

**Materials required** : A broad wooden scale of length 1m and a news paper.

### Procedure

Arrange the metre scale and the paper as shown in the figure. Try to raise the paper by pressing on the scale. Based on the observations, complete the work sheet.



- In which case can the paper be raised more easily?
- Did any change happen to the weight of the paper, on folding it and on unfolding?
- When did air exert more force on the paper – on keeping it folded or unfolded?

Air exerts more force, when the paper is kept unfolded. Hence it is difficult to raise it.  
Air can exert force.

## **Inference**

- Air has weight.
- Air can exert pressure.
- When the paper is unfolded, the area is higher. The force exerted by the air is also greater.
- The normal force exerted on unit area of a surface, by air, is the air pressure.
- The normal force exerted on unit area of a surface by the atmospheric air is the atmospheric pressure.

**Principle/concept/ Law** : Air pressure

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## **MAGNETISM**

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**Objective** : To understand magnetic materials and non-magnetic materials.

To understand magnetic poles.

**Activity** : Experiment, Work sheet

**Materials Required** : Bar magnet, pen, pencil, rubber, magnetic compass, safety pin, glass piece, coins, iron filings and chart paper.

## **Procedure**

The given objects are brought close to the bar magnet one by one. Complete the table below by classifying objects that are attracted by the magnet and not attracted by the magnet.

<b>Those attracted by the magnet</b>	<b>Those not attracted by the magnet</b>

Sprinkle iron filings loosely on the chart paper. Suspend a bar magnet horizontally using a thread and bring it near the iron dust.

- Do the iron filings stick evenly to all parts of the magnet?
- Where do the iron filings stick more?
- State the reason.

### **Inference**

- Substances attracted by magnets are magnetic substances and those not attracted are the non-magnetic substances.
- The end portions of a magnet where magnetic force is strongly felt are the poles of the magnet.

**Principle / Concept / Law** : Magnetic materials, Non - magnetic materials, Magnetic poles.

### **Worksheet**

Classify the following substances as magnetic substances and non - magnetic substances.

Rubber band, wooden block, iron nail, plastic bottle, safety pin.

Magnetic substance	Non - magnetic substance

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## **LIGHT**

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**Objective** : To understand characteristics of different types of mirrors.

**Activity** : Experiment, Work sheet

**Materials Required** : Plane mirror, a concave mirror and a convex mirror

### **Procedure**

Children are given different types of mirrors and are asked to find their characteristics by observing the nature of the reflecting surfaces.

### **Inference**

- Some mirrors have plane reflecting surfaces. They are plane mirrors.
- Reflecting surface of some mirrors is part of a sphere. They are spherical mirrors
- Spherical mirrors with reflecting surface curved outwards are convex mirrors
- Spherical mirrors with reflecting surface curved inwards are concave mirrors



- Mirrors in which the reflecting surface is plane is a plane mirror.
- The mirror whose reflecting surface is a part of a sphere is a spherical mirror
- If the reflecting surface of a mirror is curved out then it is a convex mirror.
- If the reflecting surface of a mirror is curved inwards, then it is a concave mirror.

**Principle / Concept / Law:** Plane mirror, Concave Mirror, Convex Mirror

**Work sheet**

Match the following suitably

A	B	C
Concave mirror	Rear view mirror/Mirror placed on curves of a road	Image size is same as that of the object.
Convex mirror	To see our face in daily life.	Ability to form enlarged image.
Plane mirror	Reflector in torch	Ability to form virtual diminished image only