



BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034

SUBJECT - PHYSICS CLASS - VIII

CHAPTER - Force and Pressure

GUIDELINES

Dear Students,

- There is only **1 Assignment** .
Assignment based on Pressure.
- Complete the Assignment in Physics Notebook.
- **A video link** has been provided for better understanding of the concept through visuals.
Watch the video
carefully as this will help you in attempting the assignment.
- Read the lesson from the **NCERT textbook** also by clicking on the given link.
Link for lesson :- <http://ncert.nic.in/textbook/textbook.htm?hesc1=11-18>

SUB TOPIC - PRESSURE

PRESSURE - The force acting on a unit area of a surface is called pressure.

Pressure = force / area on which it acts

(At this stage we consider only those forces which act perpendicular to the surface on which the pressure is to be computed.)

Factors on which pressure depends are as follows:

1. It is directly proportional to force. This means if force increases, automatically pressure increases. Alternatively, if force decreases pressure also decreases.
2. It is inversely proportional to area. This means that if area increases pressure decreases. But if area decreases pressure increases.

Formula: Pressure = Force/Area

S.I.Unit of pressure

S. I unit of pressure (System international unit): **PASCAL**

1 Pa = 1 Newton/1 Metre square =1N/m²

Pressure is defined as 1 Pascal when 1 Newton (it is SI unit of force) force is applied on 1 meter square (SI unit of area) area.

Let us discuss a few examples from daily life which are based on Pressure

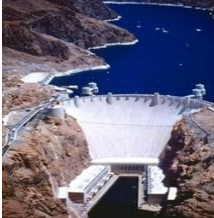
- **School bags have a wide strap**

School bags have wide and thin straps, but we select the bag with a wide strap. Wide strapped bags are used because they are easy to handle. We know that pressure is inversely proportional to area therefore, the larger the area of contact the lesser the pressure exerted on our shoulders. Thus it becomes easy to carry a school bag with wide straps.



- **Dams have a wide base**

As we know that pressure is inversely proportional to area, therefore, the more the area the lesser the pressure exerted. Since high pressure is exerted by dams on the ground, it needs to be structured in a way that the dam doesn't break. That is the reason why dams are always constructed with a wide base.



- **It is easier to hammer sharp nail**

As we know that pressure is inversely proportional to area therefore, the lesser the area the more the pressure exerted. Hence it becomes easy to hammer that nail. That is the reason sharp nails are preferred over blunt nails.



- **It is difficult to walk on sandy floor with pencil heels**

We know that pressure is inversely proportional to area. Therefore, lesser the area, more the pressure exerted. Hence it becomes difficult to walk on sand in pencil heels as they sink into the sand. As heels are sharp and exert more pressure, they get embedded into the soil and cause difficulty while walking. Even if we wear flat shoes, we will face difficulty in walking on sandy floor.



- **It is difficult to peel vegetables with a blunt knife**

It is easy to peel vegetables with a sharp knife instead of a blunt knife. This is because (as you already know) pressure is inversely proportional to area. Therefore, lesser the area, more is the pressure exerted.



Click on the link given below and watch the video for better understanding.

<https://www.youtube.com/watch?v=7fB0PNAfUa8>

ASSIGNMENT

Q.1 Why do porters place a round piece of cloth on their heads when they carry heavy loads ?

Q2.Explain why wooden sleepers are kept below the railway line.

Q3 Why is it easier for camels to run in desert?

Q4.Two cubical blocks of the same dimensions, one of wood and the other made of iron, are kept on sand. Which one will exert greater pressure and why?

Q5.Two rods of the same weight and equal length have different thickness. They are held vertically placed on the surface of sand, as shown in the figure. Which one of them will sink more? Why?

