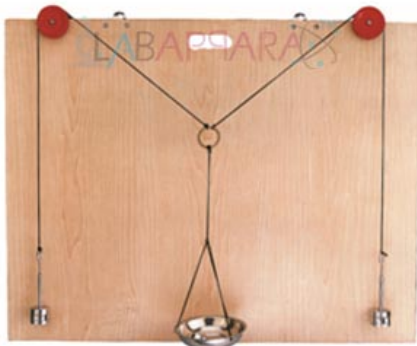


## Parallelogram Law of Vectors



**Product Categories:** [\(Class 11\)](#), [Physics Experiment](#)

**Product Tags:** [Analytical Laboratory Equipment](#), [Educational Equipment](#), [Laboratory Equipment](#), [Manufacturer of Laboratory equipment](#), [Physics equipment](#), [Scientific Equipment](#)

**Product Page:** <https://www.labappara.com/product/parallelogram-law-vectors/>

### Product Description

#### Parallelogram Law of Vectors

##### Objective

Our objective is to find the weight of a given body using the Parallelogram Law of Vectors.

##### Theory

What does the Parallelogram Law of Vectors state?

If two vectors acting simultaneously on a particle are represented in magnitude and direction by the two adjacent sides of a parallelogram drawn from a point, then their resultant is completely represented in magnitude and direction by the diagonal of that parallelogram drawn from that point.

##### Parallelogram Law of Vectors explained

Let two vectors P and Q act simultaneously on a particle O at an angle  $\theta$ . They are represented in magnitude and direction by the adjacent sides OA and OB of a

parallelogram OACB drawn from a point O. Then the diagonal OC passing through O, will represent the resultant R in magnitude and direction.

On a Gravesand's apparatus, if the body of unknown weight (say S) is suspended from the middle hanger and balancing weights P and Q are suspended from the other two hangers then,

or

The unknown weight can be calculated from the equation (1).

On a Gravesand's apparatus, if the body of unknown weight (say S) is suspended from the middle hanger and balancing weights

P and Q are suspended from the other two hangers then,

Now construct a parallelogram OACB by assuming a scale (say 1cm=50 gwt) corresponding to the weights P and Q. The diagonal of the parallelogram OC will give the resultant vector. The weight of the unknown body,

If W is the actual weight of the body, then the percentage error in the experiment can be calculated using the equation,

Learning Outcomes

Students learn what is parallelogram law of vectors.

They become familiar with the Gravesand's apparatus.

Students are able to find the unknown weight of an object using the parallelogram law of vectors.