ERASER

Introduction

Free fall is a physical phenomenon that refers to the motion of an object under the influence of gravity alone. In ideal conditions, without air resistance, all objects fall with the same acceleration

Objective

The objective of this experiment is to understand the concept of free fall, measure the fall time, and measure the height from which the object falls.

Materiales

1-Stopwatch to measure the fall time.

2- Ruler or tape measure to measure the fall height.

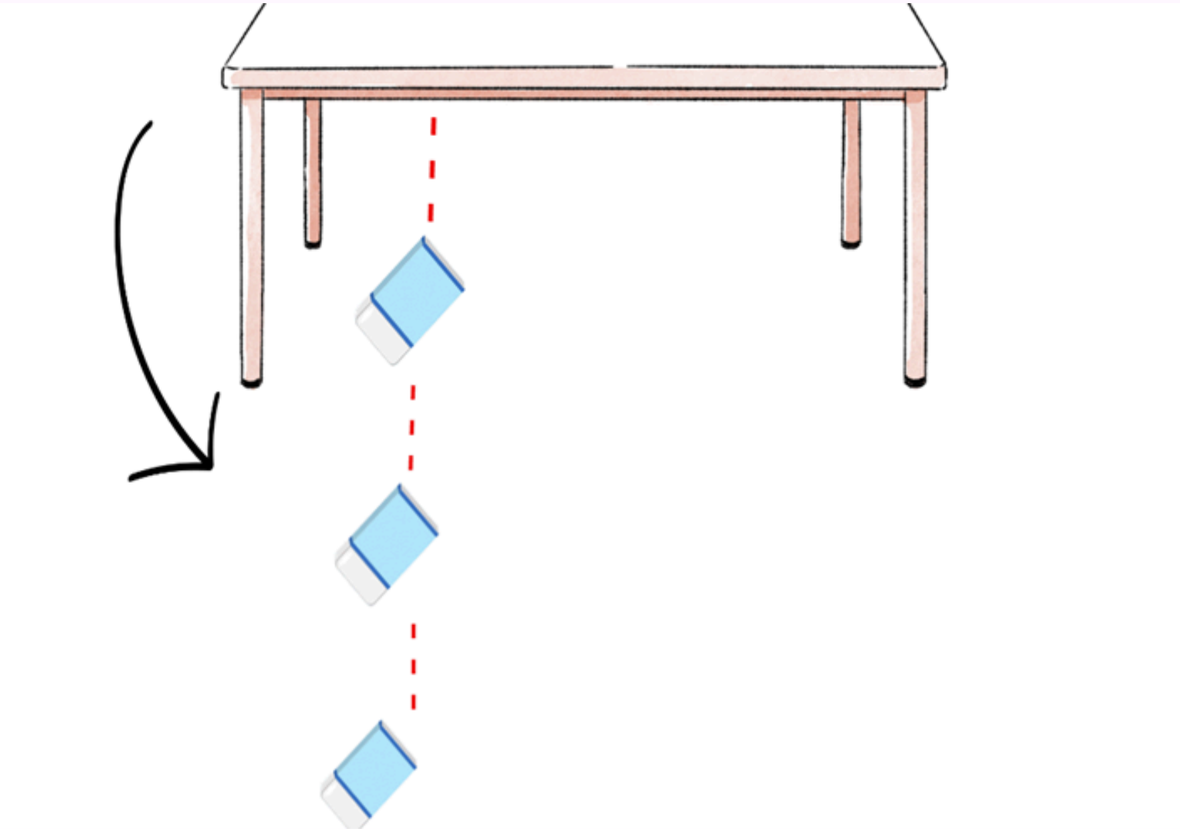
.3- Object to drop.

4- Support from which to drop the object

5- Calculator.

Experiment Procedure

We will place the eraser on the edge of a table, making sure the eraser is at rest before releasing it. Before dropping the object, we will measure the height from the floor to the edge of the table. We will ask a partner to be ready with the stopwatch.
Once everything is ready, we will drop the eraser at the same time the stopwatch is started, and we will stop it when the eraser touches the floor. Finally, we will record the time it took for the eraser to fall to the ground. This procedure will be repeated several times to get an average fall time.



Initial Data:

- Fall height (h) = 2.30 m
- Fall times (t): 0.75 s, 0.57 s, 0.89 s, 0.47 s

Average acceleration : 12.24 m/s²

Vertical Throw with a Piece of Paper

Objective

To observe and understand the physical principles related to vertical motion, including gravity, air resistance, and how these factors affect the movement of an object in the air.

Materials

1-A sheet of paper

2-A ruler

3-A stopwatch

4-An open space

Experiment Procedure:

Take a sheet of paper and fold it into a ball shape.
Make sure you are in an open, clear area to throw the paper.
Stand in a position where you can launch the paper vertically upward.
Throw the paper upward with force, ensuring that the launch is as vertical as possible.
Repeat the procedure several times to obtain various results. Throw the paper in different ways, for example, with more or less force, and using sheets of different sizes.

Calculations to be Made:

Based on the experiment described above, various physical calculations can be performed:

Height: Measure the maximum height reached by the paper in each throw.

Flight Time: Use the stopwatch to measure the total time it takes for the paper to go up and come down.

4o mini

Initial velocity = 6.71 m/s.
Time of ascent = 0.684 seconds.
Total flight time = 1.37 seconds.
Maximum height reached = Approximately 2.30 meters.