

Worksheet IT 3: Accelerometer focus and gravity force (Part 1)

In this scenario we examine the relationship between the sensor called "Accelerometer", used to measure linear speed variations in the 3 directions of space, and the "Gravimeter", used to evaluate the 3 components of the G-force. This experience is designed to let students understand the functioning of two important sensors used to analyse movement, such as the accelerometer and the gravity sensor.

What will you learn?

- Step 1: Start and learn about the "Accelerometer" sensor in detail
- Step 2: Dropping the phone from a given height onto a soft surface
- Step 3: Export the measured data into a graph

Gravity direction

What sign and direction does the g-force have when you drop the phone?

- ☐ + Z
- ☐ I don't know, maybe sagittarius
- ☐ - Z



Acceleration and weight

The smartphones used for this experience certainly have different weights.
How does this affect the fall and the acceleration of gravity?

- ☐ Heavier phones measure greater acceleration
- ☐ Lighter phones measure greater acceleration
- ☐ Acceleration is absolutely identical no matter the weight of the smartphone



Chart detected

Immediately after the fall export the values obtained and get a linear graph.
What do you learn from the chart?

- ☐ During the fall the acceleration is constant and almost equal to -9.8 m/s^2
- ☐ The 70 m/s^2 peak is due to the smartphone's weight
- ☐ The phone touches the soft surface at 4.6 second

