

## 2.1. Reaction time

In this exercise you will measure your reaction time. You should upload your practice report to moodle task.

### TITLE

1. First of all, choose a title for the experiment. These are some options if you need:

- gravity
- Free fall movement
- reaction time
- Take it!

### AIMS

2. Sentence fragments are given under column A and column B. Match them in order to write the aims of the experiment

column A	column B
<i>To determine</i>	<i>reaction time consequences.</i>
<i>To calculate</i>	<i>absolut and relative errors.</i>
<i>To analyse</i>	<i>a persone's reaction time.</i>

### EXPERIMENTAL SETUP: CARTOLINE PREPARATION

3. Calculates the time it takes to drop a distance of 8 cm, 9 cm, 10cm... one point of the cartoline. You should consider that when the cartoline is released it has no initial velocity and the fall acceleration is 9.8 m/s<sup>2</sup>.

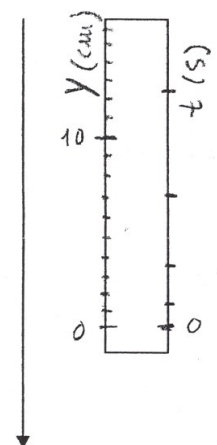
Takes the positive axis "y" down to simplify the calculations.

The distance that descends a point of the cartoline is calculated from the free-fall equation:

$$y = y_0 + v_0 \cdot t + \frac{1}{2} \cdot g \cdot t^2$$

$$V_0 = 0$$

$$a = 9,8 \text{ m/s}^2$$



4. Complete the table below:

y (m)	0,08	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	...
t (s)										

5. Marks on the rectangle of cartoline that have given you the centimeters and the corresponding seconds. Now you have the cartoline ready.

### ***PROCEDURE***

6. Your pair holds, at the top, your pre-graded cartoline rectangle and you are ready to hold it when your partner roll it, putting your fingers open and close to 0. The distance that the rectangle has fallen when you have caught it will allow you to measure your reaction time. Perform the experiment three times.

### ***RESULTS***

7. Each learner must measure their reaction time three times and give the mean value, as well as the absolute and relative error of the measure.

### ***CONCLUSION***