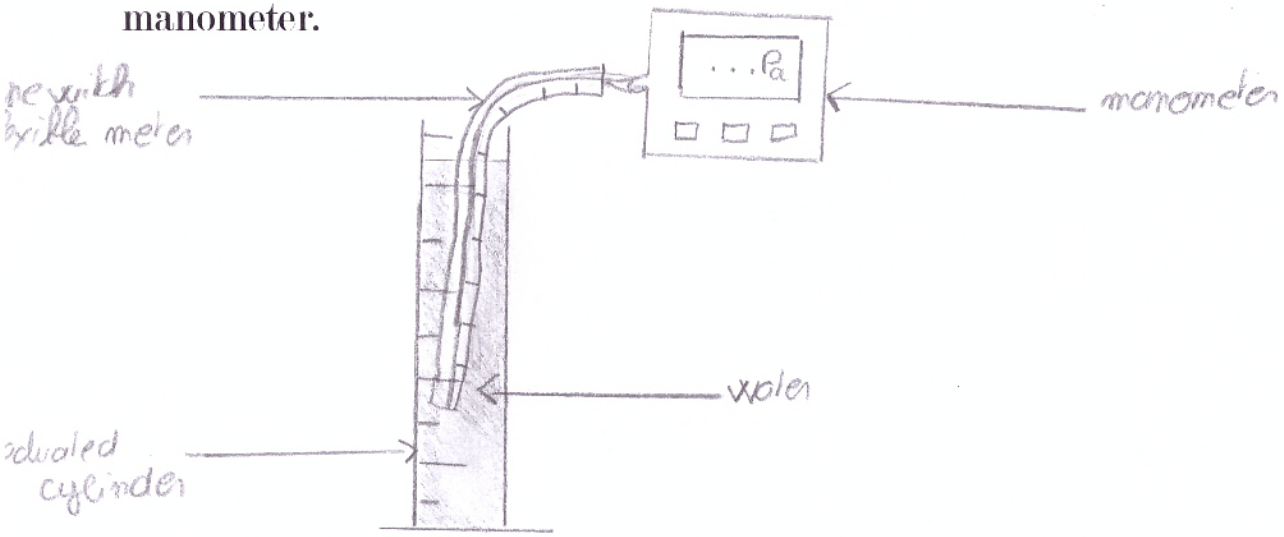
Darmagnac Elise
Nasz Maëlle

# LW#14

## *Conclusion :*

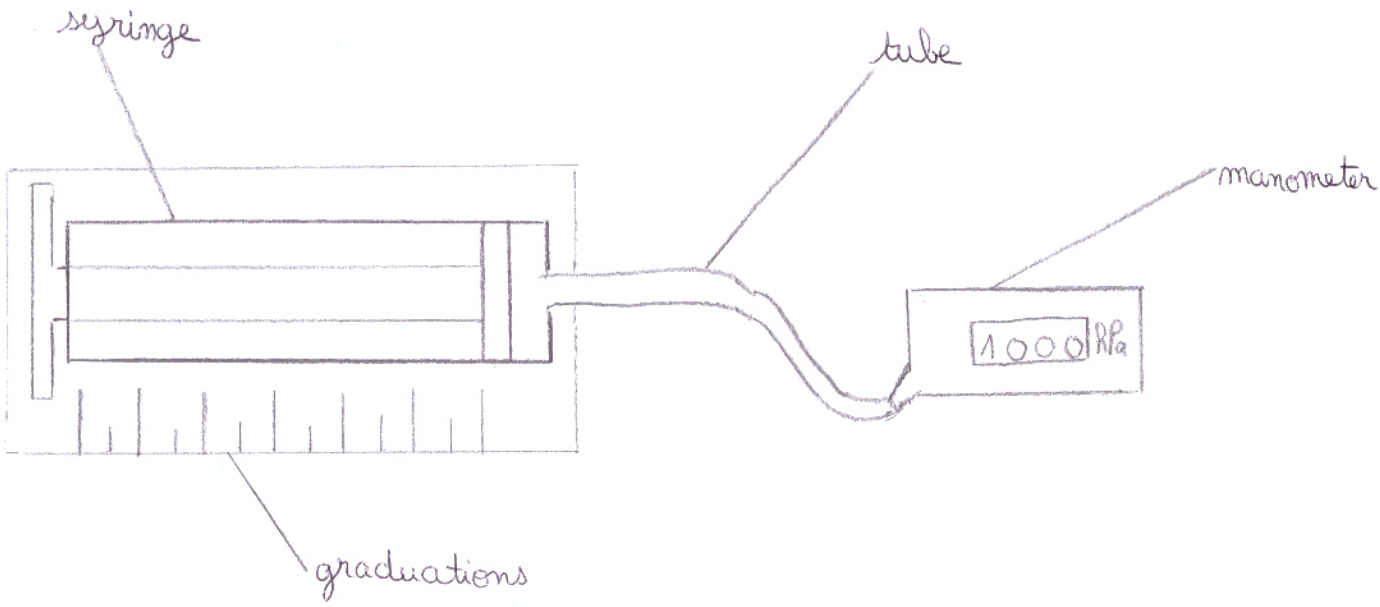
Summery of experiments :
The aim of the experiment was to discover the causes of the pulmonary barotrauma to find a method to avoid this problem.

First, we wanted to know how the pressure ~~evolute~~ evolves as a function of the depth. So we put in a graduated cylinder full of water the pipe of a manometer.




We measured the pressure at different depth and we made a graph. of P as a function of the depth.
We saw that the pressure decreased when the depth was bigger.
After some calculations we obtained a formula which helped us to prove that every 10 meters under the sea the pressure increases by the amount of 1 bar.
So, the pressure above scuba diver is bigger and bigger when he goes down because there are the weight of the water and the pressure of the atmosphere.

Second, we made an experiment to see how ~~change~~ the pressure when the volume changes. We took a syringe to compress the air which was in it and to measure the pressure with a manometer.




With this experiment we could demontrate the Boyle and Mariotte law. The result of the multiplication of the pressure and the volume is constant. So, when the pressure increases, the volume decreases.

So, with the two experiment we can say that when a scuba diver goes down under the sea the pressure increases and that is why the volume of his lungs become smaller and smaller.
During his ascension, if he goes up too fast, his lungs could burst.
Actually, the lungs' volume is ~~very small~~ normal (5ℓ) at the beginning of the scuba diver's ascension and when the pressure decreases, the volume of lungs increases. So, if the scuba diver goes up too fast, and if he holds his breath the lungs' volume increases a lot and very quickly and it is why they could burst : there is too much air in them and it take more place because the pressure decreases.

To advice this problem, the scuba diver could go up slowly, step by step and for each step he could expire a small quantity of air many time to adapt his body and lungs' volume before continue the ascension. The air quantity could be adapted to the lungs' volume. The air's pressure in the lungs and the water pressure are equilibrate.

9,5/10

expression : A
description des expériences : A+
explication de l'accident : B.
solution proposée : A.