

## EPI-GW1C: Action of water on limestones

In the field and in class, you have discovered the karst landscape. But how can you explain the action of water on limestones?

**Objective:** You must write an argumentative text to explain the action of water on limestones. You will use the results of the experiment and your pH measurements.

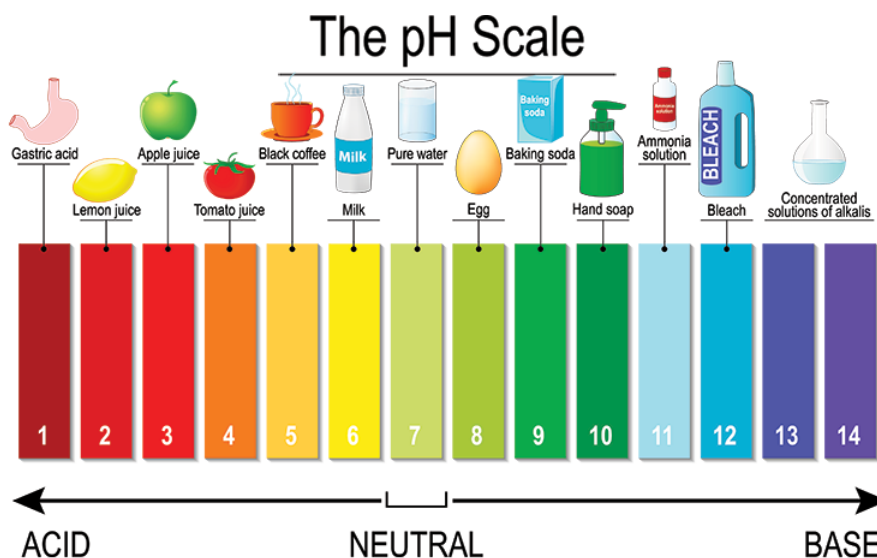
### A. Experiment to be carried out: /10 points

#### Equipment:

- 2 test tubes and a tube holder
- Limestone powder
- Tap water
- White vinegar
- pH paper

#### → Experimental protocol: /5points

1. Fill both tubes with the same amount of liquid:
  - a. Tube A: Tap water.
  - b. Tube B: White vinegar.
2. Using the pH paper, measure the pH in each of the 2 tubes and note the result: say whether the solution is acidic, neutral or basic.
3. Put the same quantity of limestone powder in each of the 2 tubes and wait 5 minutes.



the pH scale  
ph is a measurement of how  
acidic or basic a substance  
is.

(From : ScienceNewsfor  
Students website)

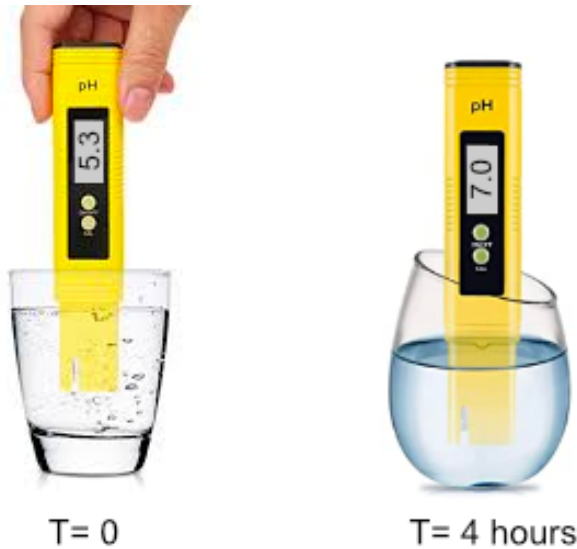
#### → Results: /5points

Complete the text + label, title and complete the diagram of the experiment provided (to be completed on the answer sheet).

**B. Writing an argumentative text: /10 points**

Using the results of the experiment and documents 1 and 2, you must explain the action of water on limestones.

**Document 1: A simple experiment with sparkling water**

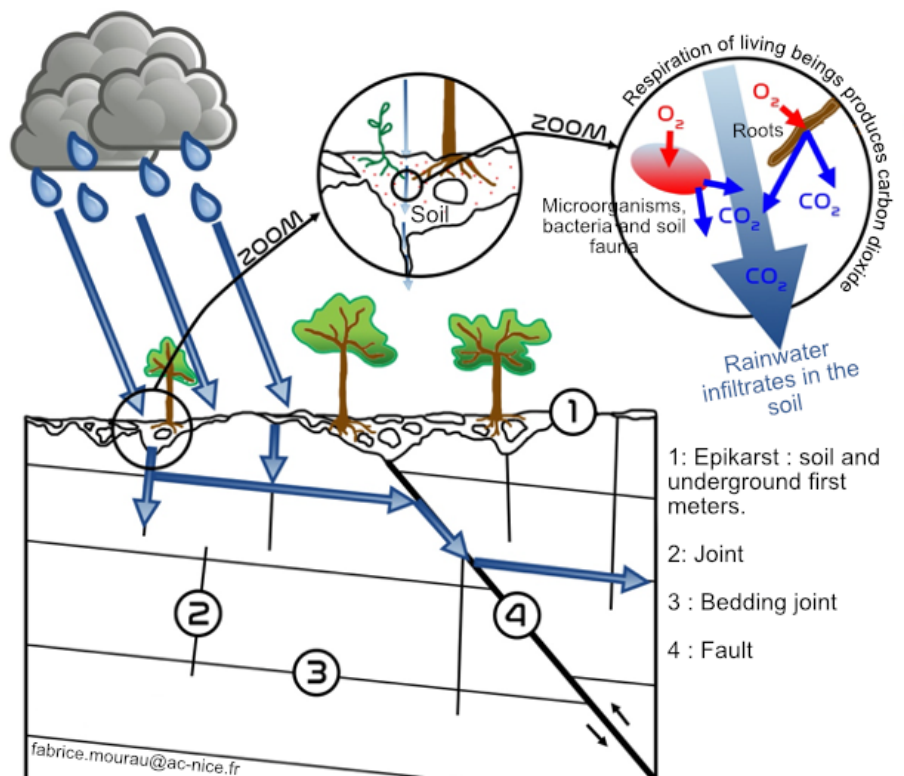


**Figure 2:** Soft drinks and sparkling water contain carbon dioxide. The pH of carbonated water is measured just after it is uncorked (T=0) and then several hours later (T=4 hours). By this time, it has lost all its carbon dioxide.

**Document 2: Carbon dioxide concentration of different waters.**

	Dissolved carbon dioxide concentration (mg/L)
Water content in the clouds	0.0001
Rainwater	1
Water running off and seeping into the ground	60

**Figure 3:** Water can be loaded with carbon dioxide as it passes through the atmosphere and especially through the soil. (Modified from Belin, 5ème – 2003)



**Figure 4:** Rainwater seeps into the ground. It is loaded with carbon dioxide, produced by the respiration of living beings.