

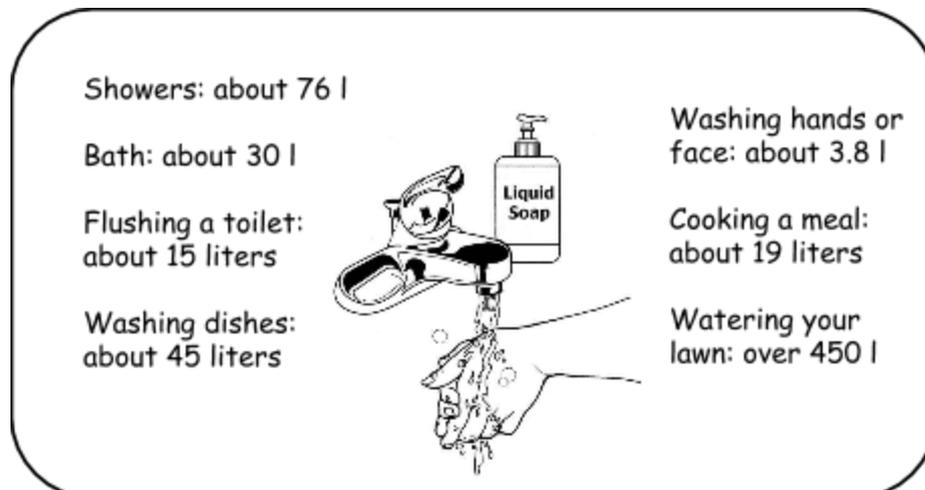


## WATER CONSUMPTION ACTIVITY

### Action LAB! - How much water do we use to .... ?

**FACT**

Water is LIFE. Your body is 67% water. Oceans cover 70% of the Earth's surface and 97% of all water found on Earth is salty. That leaves less than 3% of fresh water available for our use. So, How much of this water do we consume for our personal and home use?



What's the plan?

Above, you have some facts on how average families use water and, it seems that we use a lot of water indirectly. So, Can we calculate how much water does Erasmus+ students use for washing their hands? Let's ACTION LAB!

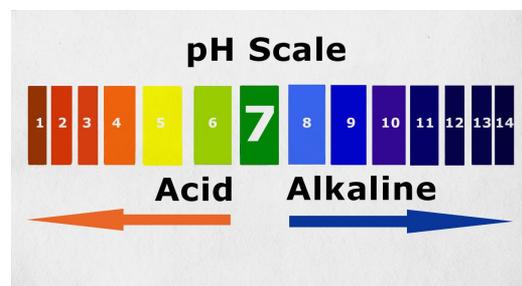
In order to do our experiment we are going to mislead the participants, so we created a "fake" experiment about calculating the value of pH in our skin. We will ask all the participants to clean their hands before we start the process but what they really don't know is that we will collect secretly the water used from the sink after they clean their hands. Isn't it a great idea? With that we will avoid the effect of them knowing what is going on!!



## The "Fake" Experiment - What is the pH of your skin?

### FACT

Liquids all around us have either acidic or basic properties. For example, acids taste sour; while, bases taste bitter and feel slippery. However, both strong acids and bases can be very dangerous and burn your skin, so it's important to be very careful when using such chemicals. In order to measure how acidic or basic a liquid is, one must use the pH scale as illustrated below:



### FACT

Have you ever read, ""pH balanced"" on a product and wondered what it meant? Our skin is naturally designed to fight infections and environmental stresses and its ability to do so is affected by its pH level. The pH level of the skin refers to how acidic or alkaline it is. Our skin has a thin, protective layer on its surface, referred to as the acid mantle, excreted from the skin's sebaceous glands, which mixes with lactic and amino acids from sweat to create the skin's pH, which ideally should be slightly acidic - at about 5.5/6.

Many factors can interfere with the delicate balance of the skin's acid mantle, both externally and internally. Everything that comes in contact with our skin (products, air, water, sun, pollution) can contribute to break down the acid mantle, disrupting the skin's ability to protect itself and recently it's been found that diet can also play an important role in determining our internal and external pH levels.



So, put on your lab coats and let's ACTION LAB to calculate the skin pH level in our participants hands !!!

What's the plan?

We will invite the participants to calculate their pH level in their skin's hand and, before starting the experiment we will ask them to clean their hands ... BUT ..

### 1. How will we collect the water from the sink?



This is EASY, we will collect the water that the participants used by connecting a 5 liters bottle of empty water to the pipe system under the sink. Once the water is collected we will use a measuring cylinder to calculate the amount of water used by each participant and we will write it down on the specific table chart.

REMEMBER: we will ask each participant their age, sex, and country of origin .... We want to evaluate if our experiment shows any differences in water consumption between these three variables analyzed.

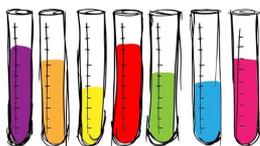
### 2. How will we procedure with the pH experiment?



In this experiment we will use the juice from red cabbage as a pH indicator (colour of the juice varies from dark red to yellow as you can see in the plastic card provided).

REMEMBER: In order to maximize our time, the red cabbage juice pH indicator must be prepared in advance.

As a fake experiment, we will pretend to test our participants skin but actually we will test just common household liquids and see how colour change is produced. Through this colour change, we will be able to identify "falsely" the pH of their skin.



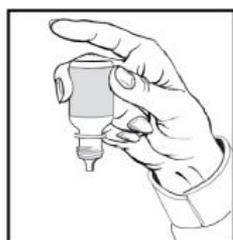
Once our participants finish to clean their hands, we will invite them to the lab-bench to analyze their pH.

We will already set a minimum of three test tubes or cups with 3 different household liquids: distilled water (neutral pH); white vinegar (acidic pH) and bleach+distilled water (basic pH).



tubes/cups.

We will ask the participants to touch a previously prepared petri dish with some salt or sugar. We will collect a sample of it and pour it into the test



With the help of a dropper bottle we will add the juice from the red cabbage into the three randomly placed tubes/cups and we will see a change in colour.

We will write down the colour change on the table chart and compare the colour obtained from a random selected tube with the plastic card provided.

We will inform them of their pH value according to the colour obtained.



**ACTION LAB! Researchers**

**JOB WELL DONE!**

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