



VIII Liceum Ogólnokształcące w Toruniu



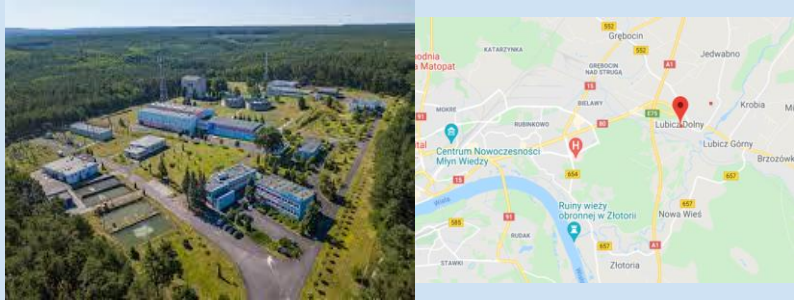
SOMETHING ABOUT US

We are study in the biggest school in Toruń. This is a city of Nicolaus Copernicus, gingerbread and the best people of the world :D. Our high school is gorgeous. We have a field, modern sports hall and pretty good conditions to work and study.



Our goal is: to follow the water route from the water intake, through our homes to the municipal sewage treatment plant and to know more about to waste less water

Water intakes in Toruń



Lubicz near Toruń, located on the small Drwęca River, is a drinking water intake for a part of Toruń.

Municipal sewage treatment plant in Toruń



Municipal wastewater is treated in three stages: mechanical, biological and chemical

We plan to perform the following tests:

- water hardness
- examination water under a microscope
- the appearance and taste of tea prepared from hard and soft water
- how will gray soap behave in hard (well) and soft (tap or distilled) water



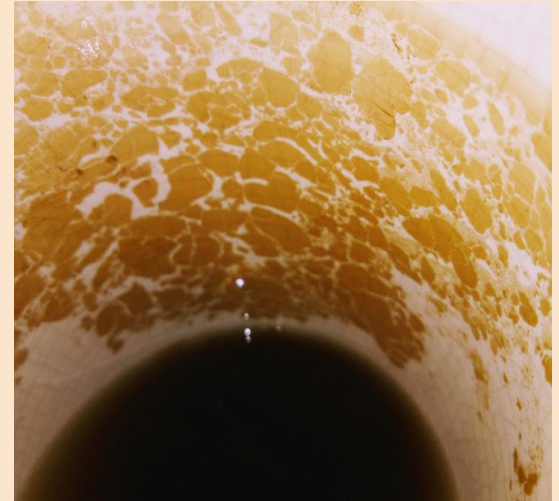
WATER HARDNESS

In this part of our project we wanna talk about water hardness. During travels and trips we can observed different types of this. For example– in a village in Poland water have a lot of minerals and good bacteria for us.

A cup of tea on this picture have a very hard water.

We can see a sediment on a cup. This is minerals named „lime scale”.

Hard water may cause limescale which leads to damage



Hard water can cause difficulties with simple daily activities such as washing

[Wyższe kwasy karboksylowe. Mydło » mozok.click](#)

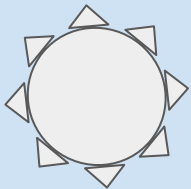


In bulb on the left you can see soap solution in distilled water. In the right bulb there is insoluble soap formed in the reaction with calcium and magnesium cations. These ions are present in hard water.

On the last picture you can see precipitate that interferes with washing.

Our ideas how to use water "to the last drop"

- water after cleaning the aquarium for watering potted flowers
- water after washing hands in a flush toilet
- washing machine water for washing floors
- economical use of household appliances (dishwasher, washing machine)

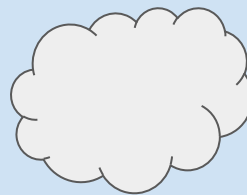


Olga <3

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Dawid :)

Martyna <3

Thank you for your attention



Ania<3

Rotary
Club Torun

