



Education and Culture DG

Lifelong Learning Programme

**“Teaching innovatively (with focus on ICT)
and its impact on the quality of
education”**

Teaching activity n°2

Title:	Evaluation of the microbial growth with indirect methods
Nation	ITALY
Subject	4° A – Chemical-biological course

Description :

Objective of the activity is to determine the quality of water samples of different sources using chemical and microbiological indirect methods.

The action has planned activities in the laboratory of Chemistry with the determination of the presence of the organic substance, as an indicator of contamination, through the method of Kubel and in the laboratory of Microbiology with the determination of Total Coliforms with MPN method.

ORGANIZATION OF ACTIVITY

Step 1	Information of water's sampling
Step 2	Chemistry: determination of organic substance (Kubel method)
Step3	Microbiology: <u>Preparation of the culture medium</u> <ol style="list-style-type: none">1. weighting the lyophilized soil (broth lactose);2. dissolution of the lyophilized and distribution pipes with bell Durham;3. sterilization of the culture medium in an autoclave;
Step 4	Microbiology: <u>sowing of the sample and incubation</u> <ol style="list-style-type: none">1. Sowing in a series of sample water in the pipes (1ml.; 0.1 ml.; 0.01 ml.)2. Incubation at 37°C for 24 hours;
Step 5	Microbiology: <u>Reading results</u>
Step 6	Data correlation and result's interpretation