

RIVER WATER QUALITY ASSESMENT HUNGARY

1. Summary:

Very important for us to analyse the rivers water quality, because the pollutions are coming from abroad, and from farms, companies, and houses. We use BISEL index for measurement.

Some information's about biotical quality assessment of water:

Description is given of the method generally used in Belgium to assess the quality of running water, so called BISEL analyses.

It involves the determination of a biotic index with scores between 0 and 10, its based on a qualitative sampling of the aquatic macro invertebrate fauna, collected in situ using a hand net.

Its major advantages are its simplicity, speed, reliability, low cost and practical utility. We can combine it with chemical analyses, but macro invertebrates have „memory„ and number demonstrate pollution.

2. Target group

Programme can be adapted according to the following age groups: 8-12 yrs, 13-16 yrs, 17-... yrs.

3. Learning outcomes

- Chemical , biological knowledge
- Knowledge about animals, plants in water



4. Connection to subject of curriculum

- Biology, geography, chemistry, maths

5. Equipment needed

- hand net
- samples
- microscope
- suitable waterproof bottles

6. Preparation

- sampling procedure
- field protocol
- conservation, separation, and treatment of sampled material
- identification of the organism
- calculation of the biotic index
- interpretation of the biotic indexes



7. Activities / process

- ⦿ Children are divided into small groups (3-5 children in a group)
- ⦿ Collect samples
- ⦿ Analyses it in school laboratory, all classroom with microscopes
- ⦿ Collect datas
- ⦿ Make map about solution of river
- ⦿

8. Safety

- ⦿ 1 adult per 10 children
- ⦿ Instructor constantly checks that all the participants are there
- ⦿ A first-aid kit should be available
- ⦿ Safety equipment: mobile phone, radio transmitter, map, compass



BAT IN CAVES HUNGARY

1. Summary:

In environmental education is an important part case study about caves.

Hungary is a rather small country compared with many other countries in the world. However, it is a diverse country, rich in cultural and natural sights.

We have about, saved 3600 caves what are "ab ovo" saved.

It have special flora and fauna. The Bats are well saved animals of caves.



2. Target group

Programme can be adapted according to the following age groups: over 17-... yrs.

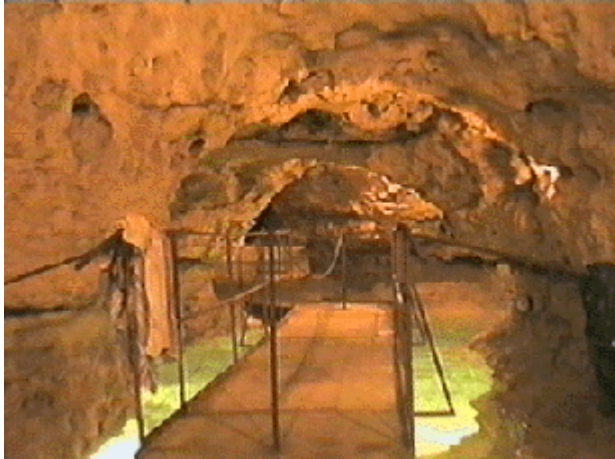
3. Learning outcomes

Chemical , biological knowledge

- **GIVE THE STUDENTS EXTRA KNOWLEDGE ABOUT CAVES/**
- **TYPES, GEOLOGICAL ASPECTS, BIOLOGICAL ASPECTS, CAVING TOURS RULES/**
- **MOTIVATE THEM COLLECT DATAS ,MAKING MAPS ABOUT CAVES**
- **ANALYSES ENVIRONMENTAL CONDITIONS**
- **FIND THE WAY OF USING CAVES**
- **/TOURISM, OTHER ACTIVITIES/**
- **SPORT ASPECTS**

4. Connection to subject of curriculum

- **Biology, geography, chemistry, maths**



5. Equipment needed

- wetsuit,
- booties,
- life jacket
- helmet.

6. Preparation

- case studies about cave tours
- individual equipments need
- official cave tour leader

7. Activities / process

Children are divided into small groups (3-5 children in a group)

Count the number of bats

8. Safety: very important a special cave tour guide

1 adult per 3 students

Instructor constantly checks that all the participants are there

A first-aid kit should be available

Safety equipment

mobile phone, radio transmitter, map, compass

9. Extension activities



TOURIST MAP PREPARATION - HUNGARY

1. SUMMERY:

Making tourist maps , is very important for little villages, to help to find the local attractions for the tourists

This are the symbols that we proposed for turistic map.

1.  or  For natural caves

2.  For antropic caves

the second symbol could be modified according to the cave typology.

We chose the following ones:

- Church
- cistern
- cellar
- hotel
- sheepfold

for example:



For church



For extraction quarry



For cisterns



For dwelling



For mine



For wine cellar

In accord with the IOF (International Specification for Orienteering Maps) we suggest the following colours:

- Land forms brown
- Water and marsh blue
- Vegetation green
- Man-made features black
- Path purple

2. target group

students from 16

3.learning outcomes : learning making tourist maps, drawing , working with symbols

4. Connection to subject of curriculum

- **Geography**
- **Drawing**
- **History**

5. Equipment needed:

- **Paper**
- **GPS- not important**
- **camera**

6. Preparation:

- **choosing some villages**
- **having walking tours**
- **making photos**
- **drawing a map with symbols**

7. Activities / process:

- Children are divided into small groups (3-5 children in a group)
- Each group appoints a leader
- Instructor gives all the needed items to each group
- Each group prepares them and group leader presents the made maps of groups.
- At the end of each activity the learnt theme is summarized and analyzed, learning points are stressed and participants are asked, what they would like to additionally learn.
- On other group must find this attractions from the map.

- Best groups and individual participants are awarded

