

ABSTRAKT

This thesis deals with proposals for practical exercises using freshwater aquaria in teaching elementary schools and junior high schools that focus on protozoa and invertebrates. The main aim of the thesis is to propose practical exercises using elements of inquiry-based science education. Using identification cards of protozoa and microscopic invertebrates, pupils can learn about these organisms during laboratory exercises with microscopes. A total of fourteen cards with representatives of protozoa, invertebrates, algae and cyanobacteria typical of freshwater aquariums are presented. Each of the identification cards contains a basic description, as well as a procedure for the pupils to observe and draw the organism. They are accompanied by a photograph, a pen drawing and a QR code that links to a video of the observation of the representative under the microscope.

Another proposal is a practical exercise focusing on the food chain of standing water. Also included is a worksheet focusing on independent laboratory work by students on water quality analysis using the Pasco laboratory technique.

The contribution of this work is the actual experience of setting up a school freshwater aquarium. The process of setting up the aquarium and investigating it is described in this thesis. The succession of microorganisms in the aquarium was also investigated using the cultivation microscope slide. A list of actual microphotographs of protozoa and microscopic invertebrates is included in this thesis.

The proposals for the practical exercises were tested in a second primary school in Liberec. Attached is a graphical elaboration of the identification cards for further use by teachers.

KEY WORDS

protozoa, invertebrates, zoology, aquarium, practical exercises, inquiry based science education, didactics