

“The journey of water to our tap” educational game in form of time-line

*Originally presented during a MEdIES teachers training seminar
in Cairo, Egypt, December 2004*

By Ms. Iro Alampei, MSc (alampei@hotmail.com, info@medies.net)

Rationale: The proposed game can be considered as a type of concept map, where the key concepts are evolving with a logical sequence in a linear, rather than a radial way. We have identified 6 major steps (or processes) in the journey of water from the natural resources up to the waste treatment plant. These are

- (a) Water is located in various natural resources
- (b) Human interventions on natural resources to ‘trap’ the water
- (c) Water processing at the water treatment plant
- (d) Water’s storage & distribution
- (e) Various uses by humans
- (f) Waste water reaches the waste water treatment plant and effluents are released back to the environment.

Each of these 6 primary steps actually entails several or sub-themes (or processes), as depicted in the schematic representation on page 3.

How to construct: The teacher may use light cardboards for the clouds representing the six (6) primary steps (~ 40 cm long each) and either print on these, or write on them using a colourful marker. A piece of ribbon or rope (not slippery material) should be tied at the bottom of each cloud, (approx. 80 cm long). The eighteen (18) tags, representing the secondary processes may be written or printed in smaller cardboards.

Except from these materials, a long rope (5-6 meters) and 24 cloth pins are needed to play the game.

How to play: The teacher explains to the students that they are going to construct the time line of the journey of potable water starting from where we find it in nature, up to the point when discharges are released back to the environment.

At the beginning they are given only the clouds in order to put them in the correct sequence. These are given in random order together with some cloth-pins and the students are asked to ‘hang’ them on a long piece of rope previously hanged on the wall. Several attempts may be made at this stage, as each student has the right to re-arrange the sequence of clouds, provided that he/she gives a convincing explanation for this. An

important aspect is that each student should him/herself get up and re-arrange the clouds, while the rest of the class observes the change and listens to the explanation.

After the class agrees on the sequence of the clouds, the 18 tags are given to the students, and they are asked to match and hang these using cloth-pins, under the corresponding cloud. This stage takes longer and normally there are many re-arrangements until the class works out the task. Obviously, there is a lot of discussion and exchange of arguments at this stage. Clarifying from the beginning that there are 3 tags per cloud makes the game easier.

At the last stage of the game 3 more tags are given to the learners with the names Evaporation – Transpiration – Percolation, and a discussion is carried out as to what is the meaning of these phenomena and where they take place in the sequence.

Remarks: The game is a lively process for the class and students enjoy its mobility, compared to the usual process of raising hands from their desk.

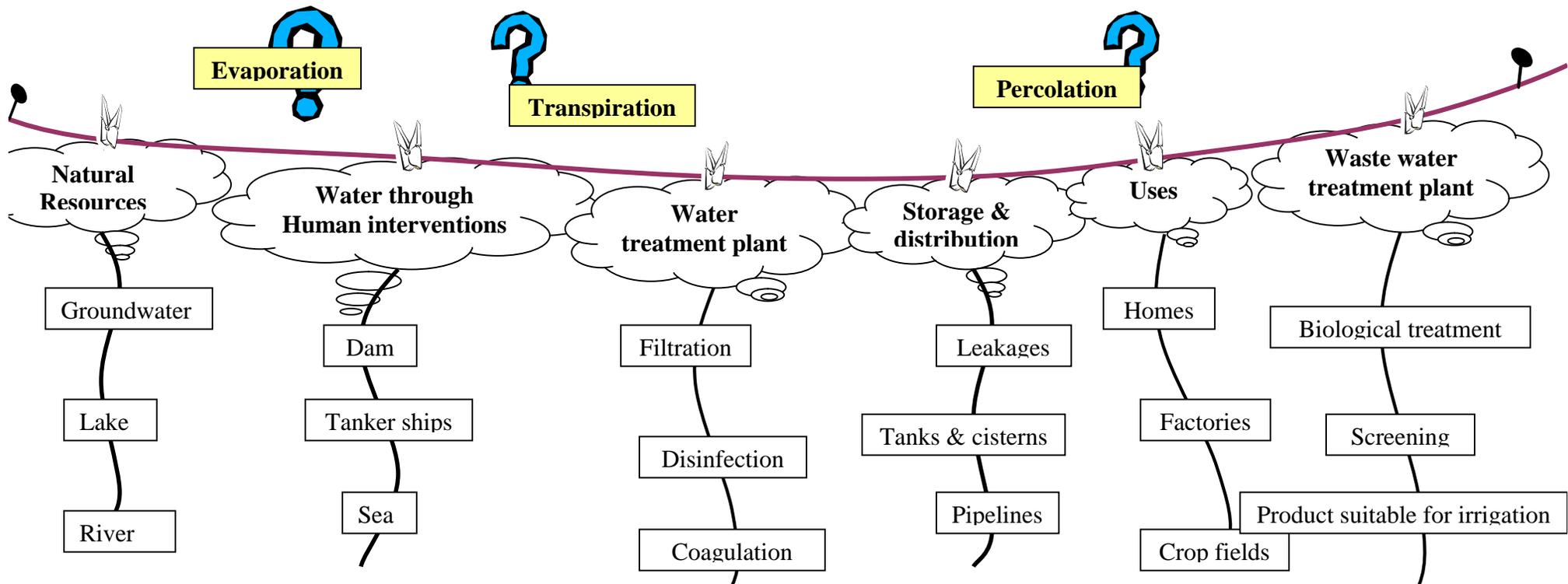
The time allocated to the game depends on the needs of the class, the teaching objectives, and, of course, the available time. It may take from 20 up to 60 minutes depending on the knowledge of learners, and the emphasis the teacher wants to put on learners' explanations.

The arguments raised by the learners are good means of evaluation for the teacher.

It can be applied using drawings or photographs instead of tags with words. In this case, after the learners put the pictures in the correct sequence and describe the phenomena, they can be asked to 'name' these processes.

The game is made of simple light materials, therefore is easy to construct and easy to carry outside the classroom, if desired.

Extension: Obviously this game can be used to teach -or examine the existing knowledge of learners- in any process with discrete steps, or for the case of sequence of events (e.g. in history).



Above: Schematic representation of the time line game entitled “the journey of water”
 Below: Two photos of its implementation during a MEDIES teachers training seminar in Cairo, December 2004