

## Guidelines

This template is prepared for STEM Digitalis consortium partners so they could prepare the lesson (or unit) plans for their STEM scenarios using LePlanner. The partners can, indeed, enter the lesson/unit plan data by themselves in LePlanner.ee, but if you prefer not to, you just fill in this template for each lesson in your scenario and share it with Mart Laanpere in the project's Google Drive folder Intellectual Outputs/O3.

The scenario should include 4-6 units/lessons, each one lasting 90 - 180 minutes.

Example LePlanner lesson plan made by Tallinn team for Rethymno summer school:

<https://leplanner.ee/en/scenario/2743> . The learning resources we used in this LePlanner

lesson plan are chapters in our Pressbook textbook:

<https://web.htk.tlu.ee/stem/stem2/chapter/introduction-to-heat-transfer/>

## Lesson/unit metadata

Title of your lesson/unit: Unit 1. Water Conservation and Awareness

Description of your lesson/unit: The digital teaching scenario of water consists of 3 units that focus on developing student's understanding of

- water conservation and the water cycle
- an individual's water footprint and responsibilities of water conservation

Tags: <STEM Digitalis>, <STEM>, <Erasmus+>, add your own tags

School subjects involved: physics, chemistry, mathematics

Target group: undergraduate students, master students, pre-service and in-service teachers

Duration of this lesson/unit: 180 minutes

Learning outcomes of this lesson/unit:

Students will develop their:

- A. awareness of the amount of accessible fresh water available for human use and consumption.
- B. Understanding of the water cycle and processes of condensation, precipitation, collection, and evaporation.
- C. Ability to write casual explanations
- D. Ability to draw diagrams to represent scientific processes
- E. Calculate the water footprint of common food items
- F. Ability to carry out data analysis
- G. Ability to communicate their findings



Activity name	Duration (min)	Type W/G/P/I	Learning Outcomes	Learning resources (URL)
Introduction to data about the volume of water on planet earth and the percentage of water in the form of salty and fresh water.	5		A	Unit 1.1 Presentation Unit 1.2 Presentation
Estimation how many ml of fresh water is this in a 1 litre bottle of water?	5		A	Discussion
Create a mindmap to capture “ what do you know about water?”	20		A	Mindmap software <a href="https://bubbl.us/">https://bubbl.us/</a>  Jamboard <a href="https://jamboard.google.com/d/1LICZ_7NozSZeHAknINIXrn7SzxlvkRO4GMsPR-61pQg/viewer">https://jamboard.google.com/d/1LICZ_7NozSZeHAknINIXrn7SzxlvkRO4GMsPR-61pQg/viewer</a>
Write a casual explanation for one of the processes of condensation, precipitation, collection, and evaporation.	30		A	Jamboard <a href="https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0">https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0</a>
Draw a diagram for one of the four processes of condensation, precipitation, collection, and evaporation.	30		A	Jamboard <a href="https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0">https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0</a>
Peer Feedback	20		A	Jamboard <a href="https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0">https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0</a>
Reflect on learning	10		A	Jamboard <a href="https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0">https://jamboard.google.com/d/1fuWr0OpEI--JJe8Tg2_3MuD2Lnrn6Tap_9R0kpb58qM/viewer?f=0</a>



Estimate how many litres of fresh water they use every day when flushing a toilet.	5		B	Discussion
Estimate how many litres of fresh water is used in the production of every day food item	10		B	Digital worksheets <a href="https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0">https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0</a>
Calculate the water footprint of food items	35		B	Website <a href="https://waterfootprint.org/en/">https://waterfootprint.org/en/</a>  Digital worksheets <a href="https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0">https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0</a>
Compare and discuss differences in their results	10		B	Digital worksheets <a href="https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0">https://docs.google.com/spreadsheets/d/1nuBLtk9iZgR7jnJGgCAHFFxVgg-Qi1Ex0UM_YMnS5-o/edit#gid=0</a>

This scenario in LePlanner: <https://leplanner.ee/en/scenario/2911>