**Instructional design document**

**How to order and structure the elearning material - considerations**

* There are two subtopics: Hydrostatic pressure and communicating vessels

What should be their order?

* The structure of a real lesson: experiment, theory, problem solving – sould we leave this order?
* Should we use branches? (For example if one can’t solve a problem, to send him or her back to the theory, and if he or she succeeds, goes to the next problem
* Description of experiments in a collection, separately
* Should we introduce physicists?
* Should we display all the units of measurements? In what format?

**In what format would we deliver the learning material?**

Asycnhronus, but certain parts could be used in frontal class work.

**Lesson elements**

**Induction**:

* Goals and tasks

**The core**:

* Title of the unit
* Rewiev of the previous unit
* Assessing the prior knowledge with a test
* Initial question/problem/issue
* Illustrated content
* Detailed examples step by step

**Conclusion**:

* Questions
* Tests
* Activities, tasks
* Summary of the lesson
* Collection of formulas, experiments and units of measure

**Activities**

* Problem solving
* Carrying out experiments
* Drill, practice
* Computer games
* Using simulations

**Assessment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Goals, learning outcome** | **Task** | **Criteria** | **Conditions/**  **tools** |
| Able to apply the formula of hydrostatc pressure | Problem solving, 8 items | All the data needed to the calculation plus other data to make it more difficult. During the first four problems the formula is visible. | Self-check with answer key |
| Able to determine to concept of hydrostatic pressure | A list of question to the simulations in essay | A list of questions in each simulation | In workbook, to hand in |
| Able to understand the relation between hydrostatic pressure, depth and the density of the liquid | Explanation of the  facts throughout using a simulation | A list of questions in each simulation | In workbook, to hand in |
| Able to list the general features of liquid | Test | 3 test questions | Self-check with answer key |
| Able to recognise communicating vessels in everydays | Test with pictures | To pick out 5 pictures out of 10 which illustrate communication vessels. | Self-check with answer key |