

Type of material: Lesson plan

Subject: Physics and 3D-modelling

Topic: Why the ships are floating

General competencies developed during the lesson:

Design thinking, transdisciplinary competence

Digital study materials developed for the lesson:

https://docs.google.com/presentation/d/1lyCYf_fRYBbO02E3zEK1z1TQO8F8BDnV4rq4a2uLXWM/edit?usp=sharing

Objectives:

Students will:

- 1) get acquainted with the law of Archimedes, with the law of swimming bodies in a liquid,
- 2) develop the ability to apply the law of Archimedes, the law of swimming bodies in solving problems
- 3) get acquainted with the technique of modeling a 3D model of a boat and anchor in 123D-design
- 4) develop the ability to model 3D objects for experiment
- 5) develop the ability to behave safely on the water

1. Lead-in

- Demonstration of the experiment (boat and anchor / ball of the same mass).
- Goal setting:
 - 1) find the answer, why do objects of the same mass behave differently in water - one floats, the other drowns?
 - 2) simulate 3D objects, conduct an experiment with them and draw conclusions in groups.
 - 3) present your work

2. Definition

- Search for an answer through reading material on the Internet.

3. 3D-modelling

- Modeling floating objects, conducting an experiment with them through work in a group

4. Conclusion

- According to this what conclusion can we draw? Why do we need to know this?