Lesson Plan

Physics and Building Industry

Level, age of the students:	15 – 18
Subject:	Physics
Subjects involved:	IT, Art
Aims:	To introduce the wide range of professions where physics is needed at different levels. Helping to choose the best profession for the students according to their interest, current knowledge, and skills and showing the possibility of later promotion on the given field. Drawing their attention, how much these fields have changed due to the importance of environment protection.
Suggested # of students per group:	15 – 20
Time of the main activity:	15 minutes
Material:	Computer, beamer, mobile phone
Competences:	Communication in mother tongue, science competences, digital competences, personal competences, social competences, environmental competences
Preparatory actions if any:	At the beginning of the second grade we summarize, what part of physics we have studied, and what will be covered later. Students work individually or in pairs, if necessary. They must know the possibilities and applicability of their mobile phones and computers. They must know the applications used, as well.
Expected results:	In most cases, they recognize which branch of physics the given image belongs to. They notice that many areas of the construction industry are related to physics, and in many cases they require different theoretical knowledge.
Expected difficulties:	In some cases, deciding which area the given image belongs to, as it may be related to several areas. To accept that, in most cases, not only physics, but also completely different subjects are needed for a given job.
Follow up if any:	We inspire the students to visit a construction site during the year and write a summary about it: which branch do they like, can they imagine it as an occupation.

TIME	PROCEDURE (T: TEACHER; SS: STUDENTS; O: OTHER)	METHOD
10’	**I. PREPARATORY ACTION** **Objective:** To introduce students the connection between the construction industry and physics. Also, one of the aims is to show that most of them are related to physics. ⇨ T: Last year we already learned some parts of physics and mentioned always practical examples from the everyday life. Tell examples, please. ⇨ SS: they give examples. ⇨ T: If students cannot start, teacher tells an example. “Remember, when we learned about torque, we mentioned how balcony is built.” ⇨ SS: continue finding other examples.	Brainstorming Individual work frontal work
10’	**II. PHYSICS IN CONSTRUCTION AND OTHER AREAS OF LIFE:** **Objective:** To match some branches of physics with images of construction. ⇨ T: Now it’s your turn: Open the link and group the pictures according to which branch of physics they belong to. Look at the pictures carefully. **Objective:** Collection of occupations related to the construction industry ⇨ T: Tell me quickly construction industry occupations and what kind of education is required for them (general school, high school, university degree) ⇨ T: Open the link and solve the crossword puzzle. ⇨ SS: Solve the crossword puzzle	https://learningapps.org/display?v=pjtx8yn9a23 Individual or pair work https://learningapps.org/display?v=pny1midvj23 Individual or pair work

TIME	PROCEDURE (T: TEACHER; SS: STUDENTS)	METHOD
2’	**III. CLOSING ACTIVITY** **Objective:** Reflection of the students ⇨ T: Which occupation would you like to choose? Why? Which occupation wouldn’t you choose? Why? ⇨ SS: They express their opinion and justify it. Short discussion.	Frontal work. Frontal work