The scenario

Subject	Electromagnetism / A complex electrical circuit
Length	3:51
Main goals	Get familiar with complex electrical circuits
Detailed goals	to show that voltage divides into several devices in series connection and switching off one of them will brake circuit; to show that voltage is the same in parallel connection and switching off one of them will make no change in the rest of the circuit
Structure and description of experiments:	
1. Introduction	Everyday life has plenty of examples of parallel connections and so few of series. We will show both of them with differences.
2. Main subject	A complex electrical circuit
Experiments	1. We have 3 lightbulbs with the same power ratings, what we show connecting them in parallel (230 V) and turning on. 2. Now we put those 3 lightbulbs in a more complicated circuit having one bulb in series with two connected in parallel. 3. We observe that the one in series shines bright and those two in parallel shine less, but equally. 4. We shall swap the bulbs to show that in each configuration the result is the same and the bulbs were not changed with other ones with other power ratings. 5. If we unscrew one of the two in parallel, we will have two in series and the other from parallel connection will shine much brighter. 6. If we unscrew the one that was in series all of them go out.
3. Summary, evaluation and remarks	In each case described above a question can be stated: will the bulbs shine? Which one, if not all? Which will shine the most and which the least? **Level:** primary school and secondary school

Co-funded by the Erasmus+ Programme of the European Union