

**LESSON SCENARIO**

Subject	Physics
Topic	Sequential and parallel connection of electrical circuits
Objective	<p>Students will create wire diagrams for their electric buildings.          Students know the requirements for a circuit (closed, conducting loop &amp; voltage source)</p> <ul style="list-style-type: none"> <li>• Students can create circuits with resistors in parallel and series, and can describe how adding additional resistors affects the voltage, current, and effective resistance of that particular circuit configuration</li> <li>• Students know and can apply Ohm’s Law for circuits (<math>U = IR</math>)</li> </ul>
Age group	13-14
Time required	40
Methods	<p>interactive methods in the teaching process- using a virtual lab          project-based task          experiment</p>
Materials	<p>computers          presentation materials          Students work in a virtual lab in a computer room.</p>
Activities	<ol style="list-style-type: none"> <li>1. Students are asked to respond these questions...             <ol style="list-style-type: none"> <li>a. Do you think the electrical appliances in your house/apartment are in series or in parallel with each other? How do you know?</li> <li>b. How do you think electricians know how to correctly install lights and electrical outlets in a building?</li> </ol> </li> <li>2. Teacher provides support (as needed) in guiding students towards creating the correct wire diagram for the electric building (One switch controls a single lamp, one switch controls two lamps in series, and one switch controls three lamps in series, with all three branches in parallel with each other, connected to voltage source).</li> <li>4. Pupils test the schemas in the site for physical simulations.</li> <li>5. Students submit wire diagrams to “The City Inspector” (the teacher) for approval. Homework/ with the help of parents/:</li> </ol> <p>Students create a design poster, selling their house to the public, explaining the purpose of each room</p>

	and the theme of the entire building. The design of the poster must include an approved electrical circuit and floor plan, facade and drawings of the house
Differentiation	Working in a group of two. When grouping is used, the difference between the members of the group is used: drawing, linking the chains, and presenting the result.
Assessment, evaluation	By sending the result, each participant sends a emoticon illustrating the attitude towards the subject and tasks. The teacher assesses the diagrams and performance of students and homework with an average of qualitative and quantitative assessment.