Electric Circuit Simulations (ECS)

Methodological Steps

Warm up discussion about how the light in your room works (5-10 minutes). A teacher presentation about how the electrons move around the circuit; make sure to use multiple learning resources: videos, simulations, pictures, and digital text (15 minutes). Small presentation of how PhET simulations work by sharing the teacher's screen (5 minutes). Share the simulation's link and ask students to create a specific circuit whose description is provided by the teacher (5-10 minutes). The students have to printscreen the result and share it with the rest of the class while the teacher is available to answer any questions. Different platforms or tools may be used for sharing the results like Padlet, MIRO, Mural (you can learn more by enrolling in the Module 1 of the MOOC), in general with a collaborative board.

In case of SEN or mild intellectual disability students, specific instructions could be provided to them via a PDF or a small video tutorial created by the teacher. Consider using a video screen recorder such as Screen recorder extension for Chrome browser in order to provide a recorded explanation of the simulation.

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Skills Assessment

The activity develops subject competencies and lifelong learning competencies, in particular learning to learn and digital competencies. To assess students' understanding of the content, a short quiz could be created for matching pictures of the circuit with the description. Or this activity could be given as homework; you can ask half of the students to prepare a description and the other half has to create the circuit and vice versa. A peer assessment rubric can be provided for the homework activity.

Communication

During the homework the students can communicate by using the provided virtual environment (Microsoft TEAMS, Google classroom, Moodle, or any other social network of their choice).

Subject(s) : Scientific subjects

Age of students : 13 - 16 years old

Duration : one week

Learning resources : Digital texts

Tests : Written oral test, Oral online interview

Tools : Collaboration and debate, Multimedia editors