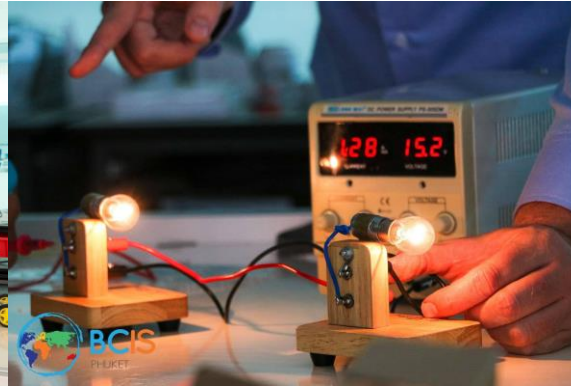


Y10 DT/SYSTEMS AND CONTROL Lesson Plan - Ilia Vialykh



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Monday, January 13, 2023

Time / Subject	Lesson Progression	Differentiation	Resources
Monday Y10 pm 1.35-2.30	Electronic Systems and Circuits Inquiry: Investigation into how electronic systems provide functionality to products and processes (including sensors and control devices). What are series and parallel circuits? LO: All students can represent series and parallel circuits using circuit diagrams. Most students can build series and parallel circuits and measure voltage and current in a circuit. Some students can analyse the behaviour of electrical components within these circuits and apply knowledge to solve practical circuit problems. Review: Diagrams, electronic components. Students play the “Electronic Components Symbols Game”. (5-10 minutes) - real time formative assessment Engage: Mind-map examples of series and parallel circuits, include characteristics of each circuit. (10 minutes) - using class discussion as another method of formative assessment <i>Can you draw diagrams for your examples?</i> <i>How is Ohm’s law applicable to your example circuit?</i> Intro: Teacher constructs a simple series circuit (power source, switch and two light bulbs), demonstrates how to use a multimeter, measures current and voltage; then parallel circuit is constructed, and teacher shows how current, and voltage behave in a parallel circuit. (5 minutes)	Group work Lower: Working with students to help them construct a circuit. Use diagrams as aids. Higher: Giving students more independence. Challenging the students to try using different components	Classroom resources Computers Wires Power sources Light bulbs Resistors Switches Multimeters Circuit diagrams Worksheets

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Explore: Students construct simple circuits in small groups, check the measurements of current and voltage and record their observations in slides. (15 minutes) - group work observation, formative assessment

Elaborate: Class discussion on the behaviour of current and voltage and how electronic components change it. Discussing real-life applications of both types of circuits. (5 minutes)

Students draw circuit diagrams on lesson worksheet, students solve problems requiring calculating voltage, current and resistance in series and parallel circuits. (10 minutes)

Assessment

Lesson quick quiz responses (online), class discussion/plenary engagement – summative assessment

Reflection:

Have each student choose the level that they feel best represents their performance