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Пән: Физика
Сынып: 10-сынып
Бөлім: Тұрақты ток
Тақырып: Толық тізбек үшін Ом заңы

Learning outcomes that this lesson is contributing to	10.4.2.4 - application of the Ohm's law for the full chain
Lesson objectives	All learners will be able to: Show an understanding of Ohm's law to complete circuit Most learners will be able to: Explain the physical meaning of Ohm's law to complete circuit of the direct current on the basis of the law of conservation of energy Some learners will be able to: Can apply Ohm's law to complete circuit in solving problems
Assessment criteria	Knowledge Know Ohm's law to complete circuit with series and parallel connected cells; Application Solve problems involving Ohm's law to complete circuit with series and parallel connected cells;
Target vocabulary	Subject-specific vocabulary & terminology electric current ampere (A) electric circuit open circuit closed circuit short circuit voltage volt (V) battery voltmeter Electromotive force (EMF) Terminal voltage Lost voltage Internal resistance Load resistance Useful set(s) of phrases for dialogue/writing All voltage sources have two fundamental parts: a source of electrical energy that has a characteristic electromotive force (emf), and an internal resistance r. The emf is the potential difference of a source when no current is flowing. The numerical value of the emf depends on the source of potential difference. The internal resistance r of a voltage source affects the output voltage when a current flows. The voltage output of a device is called its terminal voltage V and is given by V = emf − Ir, where I is the electric current and is positive when flowing away from the positive terminal of the voltage source. When multiple voltage sources are in series, their internal resistances add and their emfs add algebraically.
Value links	Respect, Cooperation • Listening to the teacher • Listening to each other Appreciation for the unique abilities of each learner. Respect for other’s opinion while working in a group. Lifelong learning that theories learned from our discussion could be applied also to practical life. Internationalism – the students must recognize that the discovery of capacitors is made by physicists who came from different countries.
Cross-curricular links	Visual Literacy Instruction – the students must understand, appreciate and comprehend what they have seen in the presentation and other video materials. Utilization of IT in teaching and learning process. Mathematics-knowledge on algebra, fundamentals and higher mathematics are pre-requisites to this lesson
Previous learning	The electric motor and the internal resistance of the current source. Grade 8: d.c. circuits; U= IR; Ohm’s Law; electrical characteristics; circuit symbols; circuit diagrams; electrical energy and power

Сабақ барысы

Сабақ кезеңдері	**Жоспарланған іс-әрекет**	**Ресурстар**
Beginning the lesson (8 min)	Greeting I’m glad to see you. Brainstorming Before we start our lesson I want you to warm up.Ready? The task for you is very easy.you should repeat the actions and words after me. It’s time to think It’s time to speak It’s time to show Ready steady go. Now let’s do it a bit faster Today we are going to have a very interesting lesson. First of all let’s divide into 3 groups. Come here. Take the cards. Who takes ‘Amper, that will be the group “Amper” and who takes ‘Volt’ that will be the group “Volt” and who takes ‘Om’ that will be the group “Om”. Now let’s elect the captain of the groups. I put a question to each group. Who answers the question that will be the captain of the group. Checking your homework using play game Kahoot (15 Questions) Ok, now let’s revise our previous lesson by doing True or false quiz in Bilimland.kz https://bilimland.uz/en/courses/physics-en/electrodynamics/electric-current/lesson/current-sources Descriptor: A learner - finds correct answers-1 FA: Knowledge passport	Worksheet# 1 Kahoot.it Worksheet #2 https://bilimland.uz/en/courses/physics-en/electrodynamics/electric-current/lesson/current-sources

Сабақкезеңдері	Жоспарланған іс-әрекет	Ресурстар
Main Activities (22 min)	The theme of our lesson is Ohm's law for the complete chain Now let’s write down new words of the lesson electric current, ampere (A), electric circuit, open circuit, closed circuit, short circuit, voltage, volt (V), battery, Electromotive force (EMF), тerminal voltage, lost voltage,internal resistance,load resistance,voltmeter Descriptor: A learner -- finds correct answers-1 “Stop frame” method After viewing the video, you need to create a poster in the group.Please, try do understand this text in book. https://bilimland.kz/en/courses/physics-en/electrodynamics/electric-current/lesson/electromotive-force You must understand and answer the following questions: What does a voltmeter measure when attached to a battery? Descriptor: A learner FA: if you have finished the work then clap your hands. Working in pairs and solving problems Task 1. Jobs on the cards. Descriptor: A learner - uses the Ohm's law formula for the complete chain Task 2. solve the problem by drawing Descriptor: A learner - uses instrument readings Individual work Task 3. to collect an electric battery, a key, three light bulbs, and a resistor using Ohm's law calculate the current in the circuit. Familiarize yourself with safety procedures. https://phet.colorado.edu/sims/html/circuit-construction-kit-dc-virtual-lab/latest/circuit-construction-kit-dc-virtual-lab_en.html	slide Worksheet# 3 https://bilimland.kz/en/courses/physics-en/electrodynamics/electric-current/lesson/electromotive-force Worksheet# 4 Worksheet #5 phet.colorado.edu safety
Ending the lesson (10 min)	Fixing the lesson Test . Let’s check each other. Home task Your main task is to learn new words and solve the crossword puzzle Words: argon gas (inside), filament, glass bulb, coil of tungsten wire,contacts Puzzle. 1. The coiled wire inside a lamp 2. A wire carrying high voltage electricity 3. Aneffectofelectricity 4. A circuit element used to protect circuits from excessive current 5. One of the colours of the mains electricity wires 6. Theunitofpower FEEDBACK: Your impression! Learners write their impression and stick them. Answer the three question: What are two things you liked about this topic? - - What did you find difficult about this activity? - If you were to do this topic again what would you differently? - The lesson is over! Thank you for your participation. Good-bye!	Worksheet #6 Worksheet #7 Worksheet #8