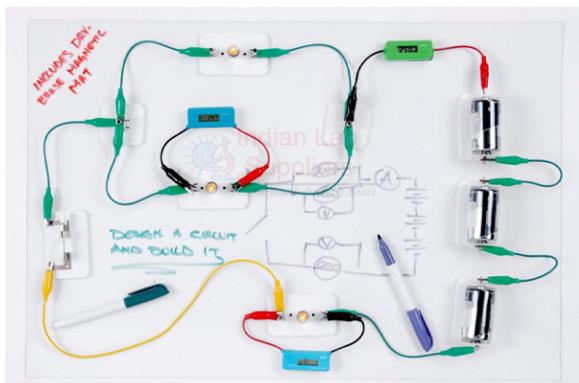


Product Code . ILS-EAC-11796

Investigating Electrical Circuits Kit



Description

This kit is designed for student inquiry and discovery, and the instructional guide emphasizes that understanding the concepts should precede calculations. The investigations are related to the basic concepts: open and closed circuits, series circuits, parallel circuits, and combination circuits. These investigations will then engage students to meet challenges and compare the circuits to their existing knowledge of home circuits. Finally, they will be introduced to the concepts of voltage, resistance, and electrical current. The Miniature Digital Voltmeter and the Miniature Digital Ammeter shown in image above are recommended, but not required for use with the kit.

With this Investigating Electrical Circuits Kit, students discover by designing and testing electrical circuits and then are introduced to the concepts of voltage, resistance, and electrical current. Everything needed to build simple to complex circuits is included with well thought out Instructional guide.

Each of the electrical components is mounted on a durable plastic magnetic base (embedded Neodymium magnets) designed to help keep things organized on a custom magnetic receptive mat - both for instructor demonstrations or student lab stations.

The magnetic mat is also a dry erase board for easy note taking, drawing circuit diagrams or simple labeling.

Unique connector posts make multiple alligator clip connections simple, stackable, and easy.

Home Circuits reinforces their observations and supports their “conceptual model” as they place switches into their circuits to mimic their home circuits. Students will gain a solid understanding of series, parallel, and combination circuits.

Electrical Measurements introduces the ammeters and voltmeters. Students will discover the following patterns for series and parallel circuits: All elements in a series circuit have the same current and the components will share the voltage. In parallel circuits, different branches have full voltage and can be operated independent from each other. The currents in parallel branches add to achieve the current in the main branch. Finally, a circuit breaker will be explained. This safety device will limit the current which will keep wires from overheating – thus preventing electrical fires.

Circuit Challenges is an introduction to electrical circuits. Students will build their intuitions as they design and construct increasingly complex circuits. Students will observe changes in the brightness of the lamps as they construct series, parallel, and then combination circuits.

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