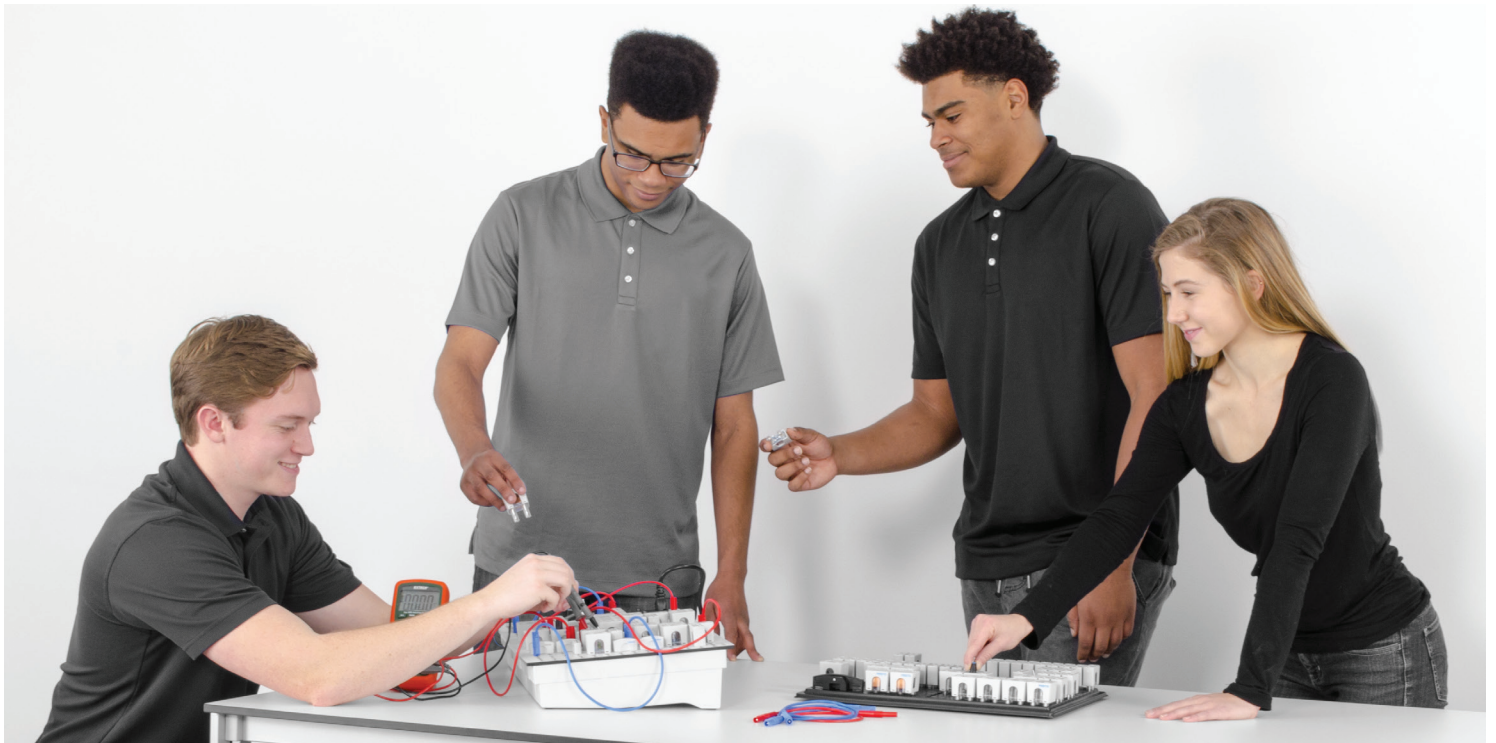


Integrative STEM Education

Exploratory Electronics

FESTO



Highlights

- Build and test prototype circuits
- Configure electronic components, such as lamps, switches, resistors, capacitors, and semiconductors
- Use test equipment, such as a power supply and a multimeter, to ensure proper operation of new designs
- Calculate electrical properties

STEM Connections

In the STEM Exploratory Electronics course, students discover how the four disciplines connect as they explore and practice the skills needed to work with electronics.

Once they are familiar with electric circuits, they'll have the opportunity to design innovative solutions to real-world problems, challenges, and needs.

Science

- Voltage
- Current
- Resistance
- Power
- Series and parallel circuits

Technology

- Electronic components: lamps, resistors, capacitors, inductors, and semiconductors
- Test equipment: digital multimeter, signal generator, and power supply
- Circuits for indication, detection, measurement, and isolation

Engineering

- Schematic diagrams
- Building and testing electronic circuits

Math

- Ohm's law
- Total voltage, current, resistance, and power in series and parallel circuits

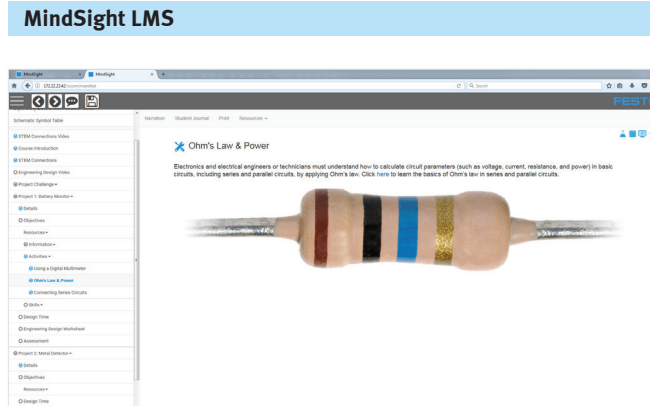
Integrative STEM Education

Exploratory Electronics

STEM Exploratory Electronics

The purpose of the STEM Exploratory Electronics course is to challenge students to design new circuits for innovative electronics products, such as those commonly found in modern households, and in doing so, solve typical electrical problems that may be encountered by electrical and electronics engineers.

As students explore and practice the skills needed to design and build electronics circuits, they will gain some of the basic knowledge of DC and AC circuits and semiconductors that would be required to become electronics or electrical engineers or technicians.



Upon completion of the STEM Exploratory Electronics course, students will be able to:

- Apply Ohm's Law to gain an understanding of voltage, current, and resistance.
- Practice wiring and testing electronic circuits by connecting many different types of components, including passive types (such as resistors, capacitors, and inductors) and semiconductors (such as diodes, transistors, and thyristors).
- Learn to use electronic equipment, such as a digital multimeter, signal generator, and power supply.
- Build electronic circuits, such as an amplifier and oscillator, to solve real-world problems.

Equipment and Supplies

- Multimedia presentation
- MindSight installation and user guide
- Exploratory Electronics training system
- IEC power cable (linecord)
- Digital multimeter
- 4 mm–2 mm safety measuring adapter
- 4 mm red safety lead, 500 mm long
- 4 mm blue safety lead, 500 mm long
- Electric motor and rotary disk set

Festo Didactic Inc.

Eatontown, NJ 07724
Phone: +1-732-938-2000
Toll Free: +1-800-522-8658
Fax: +1-732-774-8573