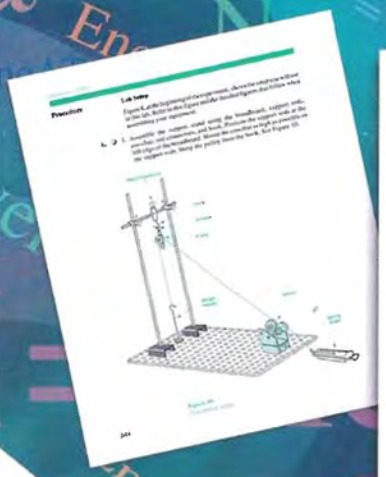
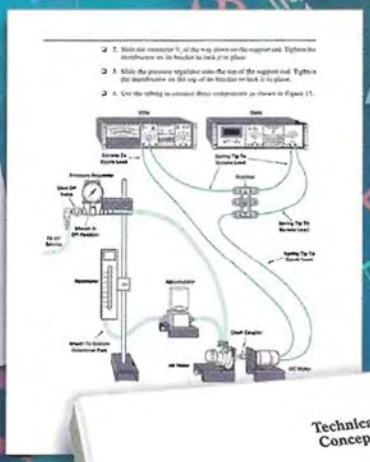
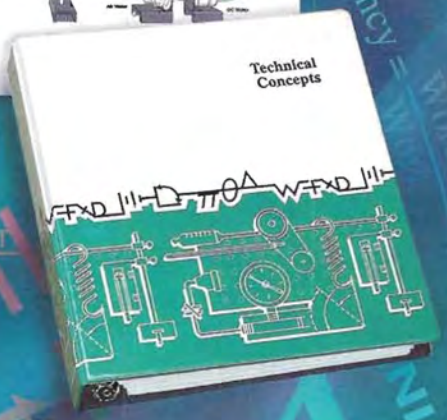
Technical Concepts for

PRINCIPLES OF TECHNOLOGY







ENERGY CONCEPTS, INC. ECi

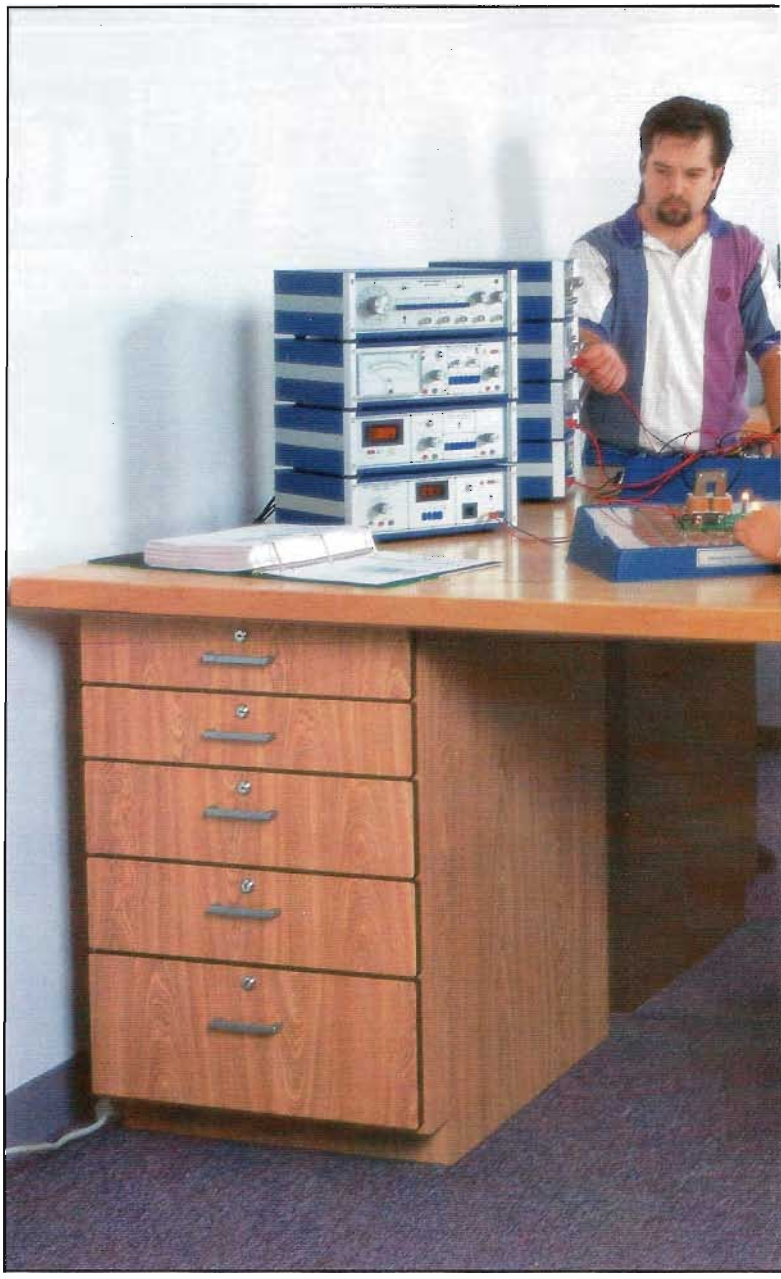
New England Academic Representative:

tec

Technology Education Concepts

1-800-338-2238 | www.TECedu.com | info@TECedu.com

Principles of Technology is a two-year course designed to teach traditional physics using a contextual approach. The full two-year course includes 14 units of instruction that students use to develop their skills and ability to understand complex theories and processes. Through a blend of technology and academics, students discover how physics concepts apply to workplace situations.



First Year Course

This exciting, integrated instructional package employs a systems approach to help students understand physics concepts and mathematics.

The first year course presents mechanical, electrical, fluid and thermal systems that demonstrate basic principles of physics through the following seven units:

Force
Work
Rate
Resistance
Energy
Power
Force Transformers

Each unit contains an average of 26 fifty-minute sessions of instruction, discussion, and laboratory activities which makeup a full year of course work.

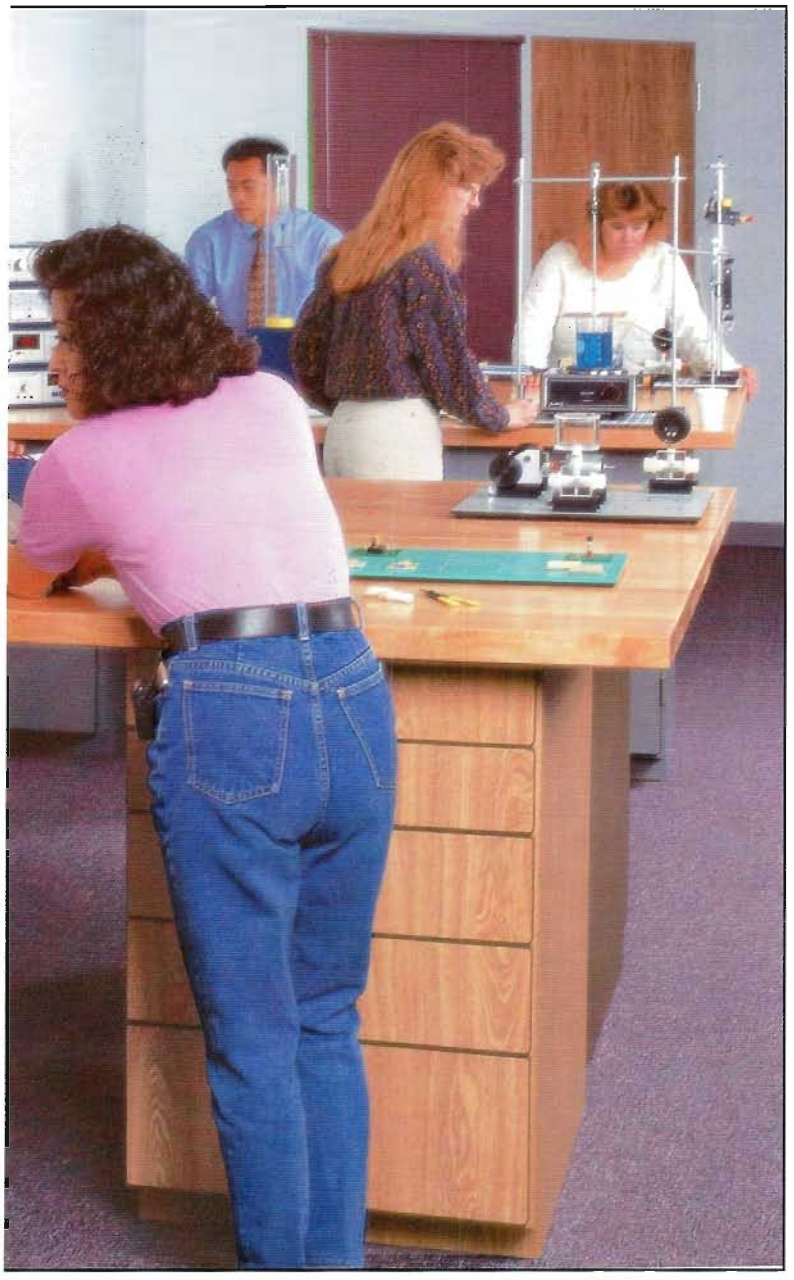
Second Year Course

The second seven units of this applied science course, provides a further understanding of the basic principles of physics in mechanical, fluid, electrical, and thermal systems. The second year course is divided into the following seven units:

Momentum
Waves and Vibrations
Energy Converters
Transducers
Radiation
Light and Optical Systems
Time Constants

More high schools, technical centers, and colleges have chosen ECI's lab system to implement Technical Physics than any other system available. Energy Concepts applies the knowledge from fifty years of experience to develop educational systems that have a proven record of success in teaching technical subjects.

One and Two Year Program



The Principles of Technology program allows students to discover and experience Physics first hand and understand key concepts that are not easily learned by just reading text books.

Students Like It!

Students stay engaged in learning with hands-on laboratory activities. They learn to work in groups and focus on problem-solving and mathematical skills in addition to scientific principles.

The workplace demands people with advanced technical skills and the ability to understand complex theories and processes. The Principles of Technology curriculum provides a solid base of major engineering concepts, math, and science.

Principles of Technology is appropriate for:

- Engineering Physics
- Tech Prep programs
- Other Career/Technical Programs

Satisfies many state science standards.

Meets workplace competencies and SCAN skills.

ECI's laboratory system together with the Principles of Technology curriculum is a solid combination for successful outcomes in your technology-based educational program.

The following pages provide an overview of Energy Concepts' laboratory equipment, experiments, and classroom solutions.

The complete turn-key lab system includes lab management solutions, quality hardware and instrumentation, a comprehensive student lab manual, instructor's guide, and instructor's resource manual.

The laboratory equipment allows students to perform experiments on a bench top and to accomplish each experiment with accuracy, repeatability, and speed.

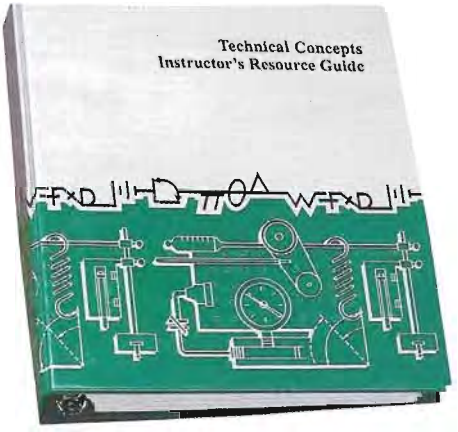
Principles of Technology is a cooperative development of a consortium of state and provincial education agencies in association with the Agency for Instructional Technology (AIT) and the Center for Occupational Research and Development (CORD). It integrates academic and occupational subjects, embodying a competency-based technical curriculum.

Courseware

Lab Manuals

ECI's Laboratory Manuals provide hands-on laboratory experiments to reinforce CORD's Principles of Technology student text.

Designed to help the student develop a thorough understanding of the subject matter, the lab manuals are clearly written and professionally illustrated. With its looseleaf design, the manual always stays open to the selected page. The two-color printing is utilized to highlight and enhance the easy-to-follow lab setup procedures.



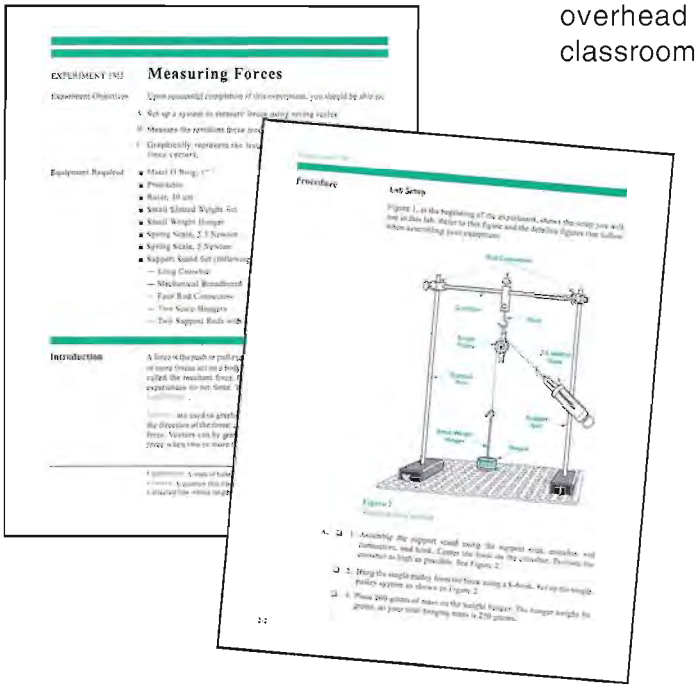
Instructor's Guides and Instructor's Resource Manual

The Instructor's Guides include sample data values for easy comparison to the student's results from the lab experiments. The answers to all of the quiz questions are also included.

The Instructor's Resource Manual provides a strategy for efficient use of the equipment and gives supplemental information for the experiments. Copy masters are provided to make overhead transparencies for classroom instruction.

Student Journals

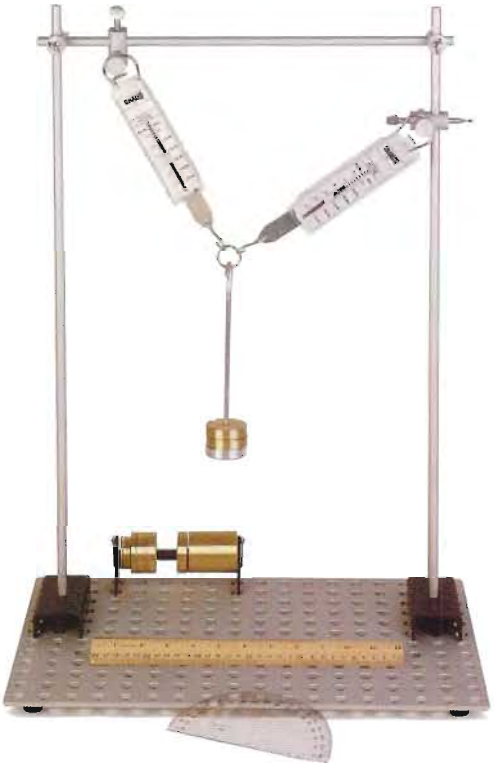
Teachers and students will discover the ease and convenience of using the Student Journals. It directly correlates to the lab manual and organizes students' experiment data, and answers.



Instrumentation Manuals

Each instrument comes with a competency-based operation manual to provide "learn by doing" training.
The instructor also receives a maintenance manual that covers circuit operation, calibration, parts lists, schematics, and troubleshooting guide.

Hardware

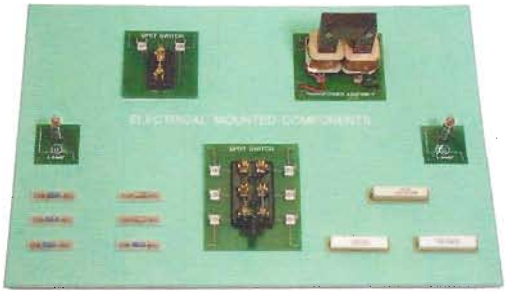


Instrumentation

ECI offers a full complement of professional, full size, bench top instruments. These fully protected instruments have been specifically designed to provide long life use under classroom conditions. Built with rugged 20-gauge steel, they are made in the U.S.A. and backed by a 3-year warranty.

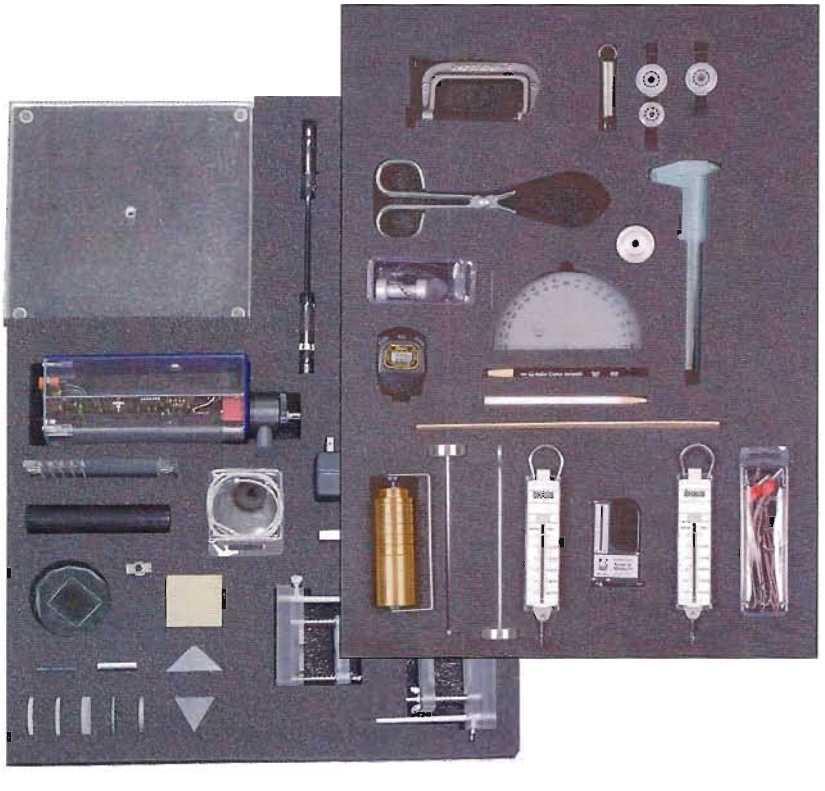
Mechanical Breadboarding

ECI-engineered breadboarding allows experiments to be safely done on a bench top. Using breadboarding methods and devices, each experiment is to be accomplished with accuracy, repeatability, and speed.



Electrical Breadboarding

Electrical breadboarding is accomplished using Energy Concepts' patented circuit panel. Major electrical components are mounted on rugged commercial grade PC boards that plug directly into the circuit panel.

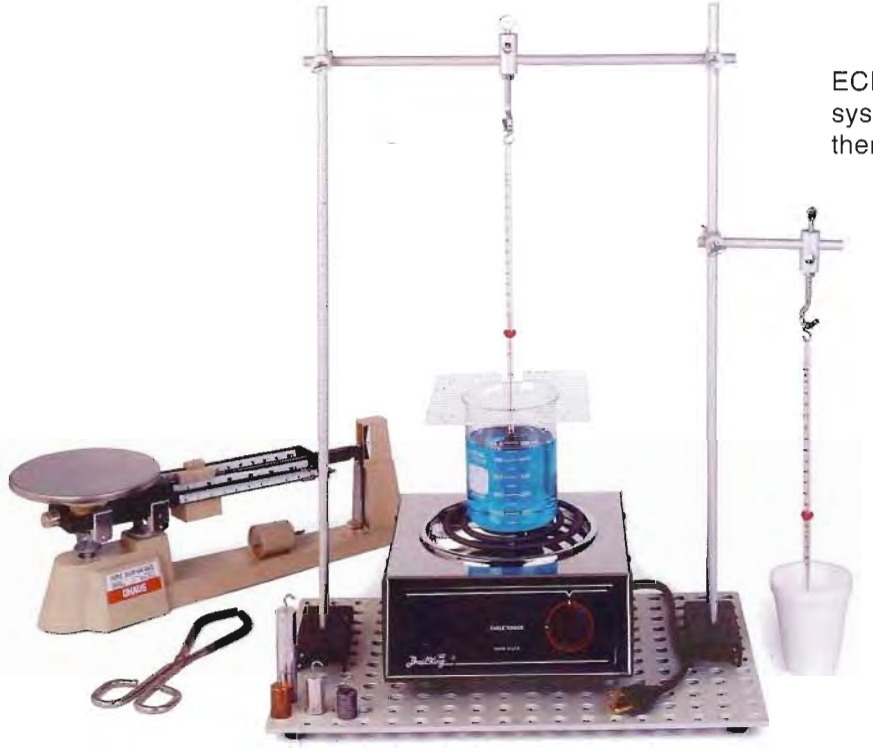


Laboratory Management

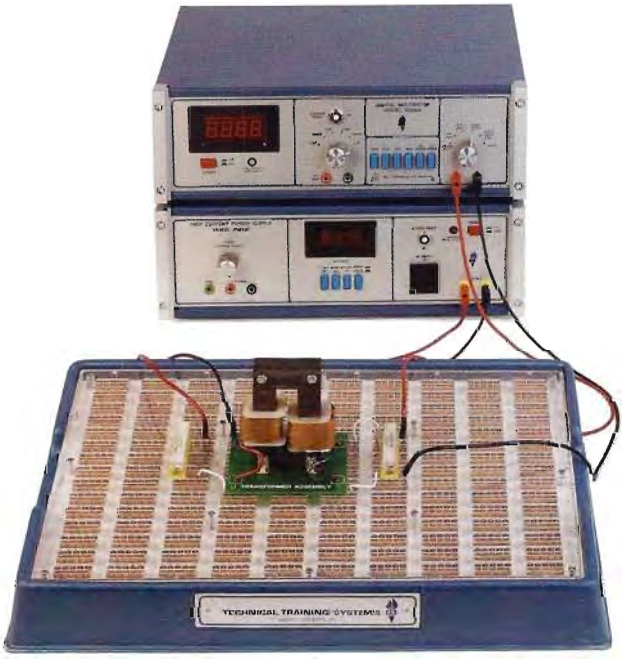
All major mechanical and electrical parts are stored on a silk-screened storage board or in die-cut storage foam for fast inventory control.

Maximum Lab Flexibility

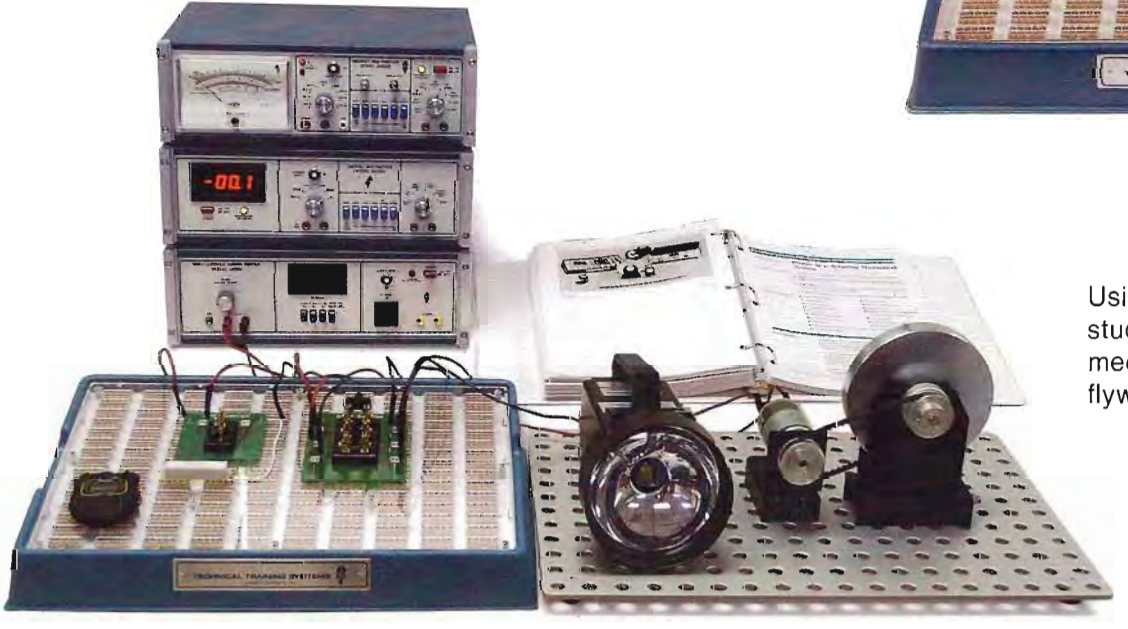
ECI engineering allows maximum classroom flexibility for in-depth investigation of Principles of Technology. Using a unique table-top approach to applied physics, the modular design is scaled to reasonable and safe proportions for easy setup and storage. All laboratory experiments are designed with student safety as the first priority. From a technical point of view, the system provides accuracy and repeatability for each laboratory experiment.



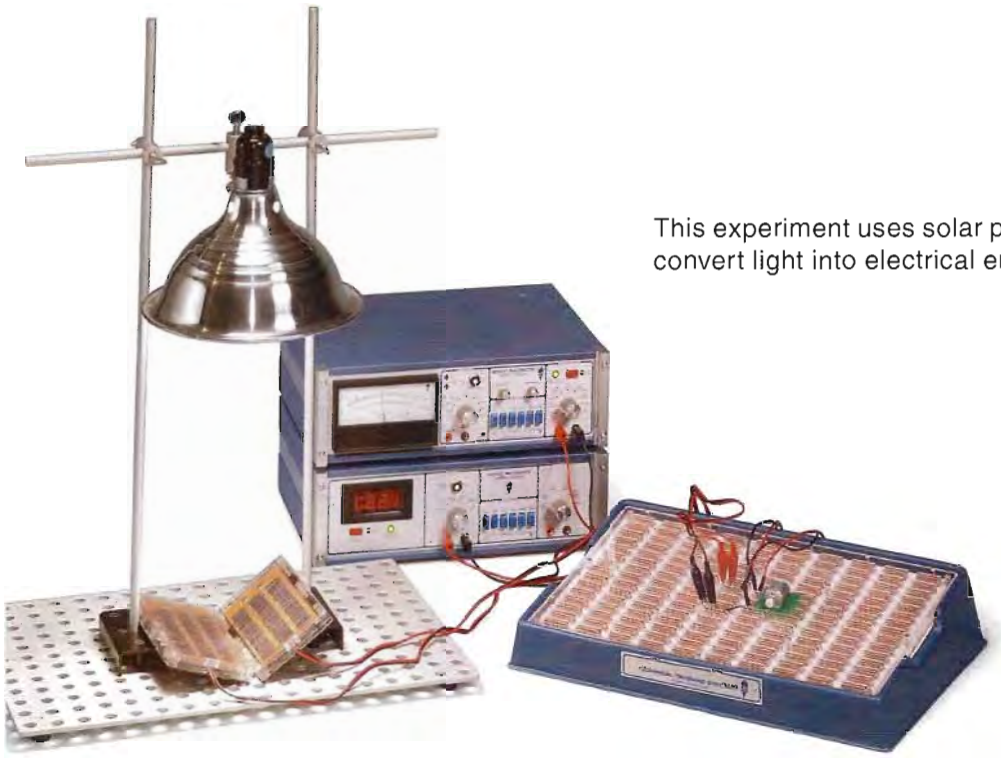
ECI's unique support stand system makes it easy to configure thermal energy experiments



ECI's electrical breadboarding provides maximum flexibility for electrical experiments.



Using the equipment shown, students determine the mechanical power stored in a flywheel system.



This experiment uses solar panels to convert light into electrical energy.

This energy conversion system is created by combining the steam engine with other equipment supplied in the trainer.

Students use sound and light to measure energy at the focal point of a parabolic reflector.

Laboratory Solutions

Laboratory Furniture

The lab furniture has a modular design allowing a wide variety of custom configurations. Design choices range from free-standing, island-style workstations with convenient storage bases to flexible mobile units. This versatile lab furniture fits beautifully into every lab.

ECI's lab furniture is constructed with fine craftsmanship. Durable high-quality materials will stand up to years of use in the most demanding classrooms. A variety of wood grains and color combinations are available.

Customer Service

Our experienced professional staff will help you with your equipment and facility plans by providing detailed bid specifications and budgetary pricing. We provide a total turn-key operation including equipment, storage benches, and layout drawings of your new laboratory. ECI also supports your purchase by providing instructor(s) equipment orientation, initial inventory of equipment, and a toll-free telephone number for technical support from our competent engineers.

Instructor Training

Energy Concepts offers Instructor Training and Workshops to familiarize instructor's with the laboratory equipment and experiments. Instructor's learn informative tips for the lab experiments as well as become acquainted with courseware materials and experiment data.

More From ECI

Computer Data Acquisition System

The MultilogPRO portable data logger is a versatile computer data collection and analysis system. This optional package includes courseware for integrating this system into the Principles of Technology Curriculum.

Package includes: The MultiLogPRO portable data logger, sensing devices, analysis software, and courseware to integrate this system into the Principles of Technology curriculum.

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