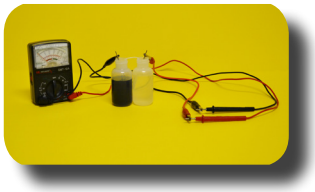
Innovating Science® by Aldon Corporation

"cutting edge science for the classroom"

GREEN CHEMISTRY

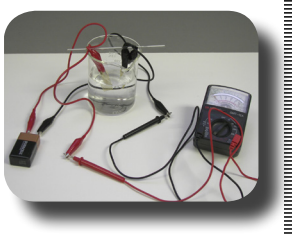


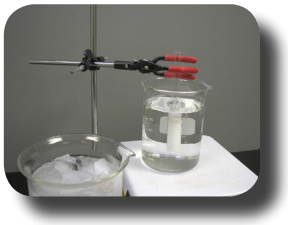
S06971 Green Fuel Cell: Energy From Yeast **$59.50**

The transfer of electrons is part of the metabolic process in living organisms. However, what if it were possible to capture, remove, and use some of these electrons? Could living organisms generate an electrical current? Students will set up a simple cell and using the simple-to-grow and environmentally tolerant organism yeast, as well as a special dye capable of entering yeast cells and collecting electrons, determine if the harvested electrons are capable of producing current in the cell and if so, how much current. This fun activity also serves as a great tool to stimulate discussion with regard to alternate energy sources. Kits contain enough materials for 15 groups of students.

S96400 The Hydrogen Fuel Cell Demonstration **$43.25**

In this demonstration, energy will be produced from combining of hydrogen and oxygen to form water. Platinum will serve as the catalyst and electrodes will be prepared by coating metal mesh with platinum. The hydrogen and oxygen will come from electrolysis. After the cell is set up, a brief current is applied (with a 9-volt battery) causing the formation of hydrogen gas bubbles on one electrode and oxygen gas bubbles on the other. Using a voltmeter, electricity produced by the recombining of hydrogen and oxygen, facilitated by the platinum metal catalyst, can be observed. Kit contains enough materials for 5 demos.



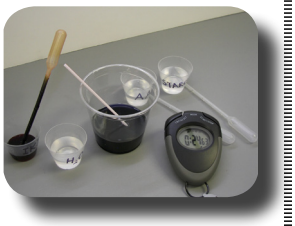


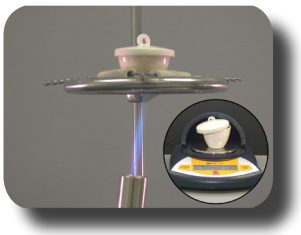
S96402 A Greener Synthesis of Acetylsalicylic Acid **$53.50**

Show students it is possible to produce acetylsalicylic acid from a naturally-occurring, renewable resource. Students will convert sodium salicylate to salicylic acid, collect and dry prepared salicylic acid. They may then use a quick confirmatory test to examine for the presence of salicylic acid. The prepared salicylic acid can then be used to synthesize acetylsalicylic acid. Kits contain enough materials for 15 groups of students.

S96403 An Alternative Iodine Clock Reaction **$44.50**

Students will learn the mechanisms and reactions involved in one type of clock reaction and understand how a clock reaction may provide insight into reaction kinetics. After assembling, performing, and obtaining data from several clock reactions students will alter experimental conditions and investigate the effects on clock reaction data. Determination of the effects of concentration and temperature on chemical kinetics will be investigated. Kits contain enough materials for 15 groups of students.





S96404 Determining the Composition of an Unknown Mixture **$32.00**

Often times, the composition of a mixture may contain a variety of unknown components. In some cases, the components of a mixture may be known but the exact amount of those components in the mixture is not. Analytical chemists often have a variety of tools and techniques to analyze unknown substances and arrive at conclusions with regards to the compounds/ percentages in the mixture. In this activity, students will determine the percent composition of sodium carbonate and sodium bicarbonate in an unknown sample. The mixture is heated vigorously until the sodium bicarbonate is completely decomposed to sodium carbonate. The only other products of the reaction are carbon dioxide and water. After performing the necessary calculations, students will determine the percentage of sodium bicarbonate that was present in their original sample. Kits contain enough materials for 15 groups of students.

S97621 Green Chemistry: The Production of Biodiesel **$62.00**

In this activity, students will be performing a two-phase process to produce small batches of crude biodiesel. The crude biodiesel produced is of sufficient quality for use in the demonstration of the burning qualities of both biodiesel and vegetable oil. Included is an optional small-scale exercise where the students will use a washing procedure to experience the full process of producing biodiesel to meet quality levels necessary for use in vehicles. Kits contain enough materials for 15 groups of students.

Teacher's Manual and Student Study Guide copymasters are included.

Fisher Science Education

Fisher Scientific Education
4500 Turnberry Drive
Hanover Park, IL 60133
Email: info@fisheredu.com
Toll Free: 1-800-955-1177
Toll Free Fax: 1-800-955-0740
www.fisheredu.com