

The Global Chemistry Experiment

“Water: A Chemical *Solution*”

The International Year of Chemistry, IYC 2011, is a global celebration of the achievements of chemistry and its contributions to the well-being of humankind. Under the unifying theme “*Chemistry—our life, our future*,” IYC 2011 will offer a range of interactive, entertaining, and educational activities for all ages during 2011. The goals of IYC2011 are to increase the public appreciation of chemistry meeting world needs, to encourage interest in chemistry among young people; to generate enthusiasm for the creative future of chemistry, and to enhance international cooperation.

The Global Chemistry Experiment – “Water: A Chemical Solution”

IUPAC and UNESCO have developed a set of activities to entice students around the world to learn about how chemistry contributes to one of the most important resources in their daily lives, **water**. This global experiment, “**Water: A Chemical Solution**”, explores the chemistry of water and the role of water in society and the environment.

Water, H₂O, is the most abundant substance on the Earth’s surface. Water is essential for life. It covers about 70% of the planet’s surface, and it makes up about 70% of the human body. 97% of the water on Earth is sea water of high salt content. Water fit for human consumption, or potable water is essential for health and well-being, and practical methods are needed for proper treatment. The Global Chemistry Experiment demonstrates the concepts of **water quality and water treatment** clearly and simply for students around the world.

The Global Chemistry Experiment consists of four component activities. Each can be carried out by children of all ages in schools around the world. The activities are adaptable to the skills and interests of students of various ages and use equipment that is widely available. The activities provide students with an appreciation of chemical investigation and data collection and validation. By the end of 2011, the results will be displayed on an IYC data collection website as an interactive global data map - demonstrating the value of international cooperation in science.

The four activities in the Global Experiment are:

Measurement of water quality:

- i. **pH:** students collect data measuring the pH of a water body, using indicator solutions (and pH meters if available).
- ii. **Salinity:** students explore the salinity of their local water body

Water purification:

- i. **Filtration and disinfection:** students will learn how chemistry is used to help provide safe drinking water
- ii. **Desalination:** Students will construct a solar still from household materials and experiment with its use to purify water.

The activities have been carefully selected in order to ensure they are suitable for implementation in schools across the world; they have been tested to ensure workability, especially in developing countries.

Resources for teachers and students will be available in the form of descriptions and procedures for the activities. Certain of the experiments will involve particular reagents (e.g. a liquid or paper pH indicator).

For more information, contact:

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For more information on the International Year of Chemistry, see: www.chemistry2011.org

