

## Annex 5

### Water: A Chemical Solution – The Global Chemistry Experiment

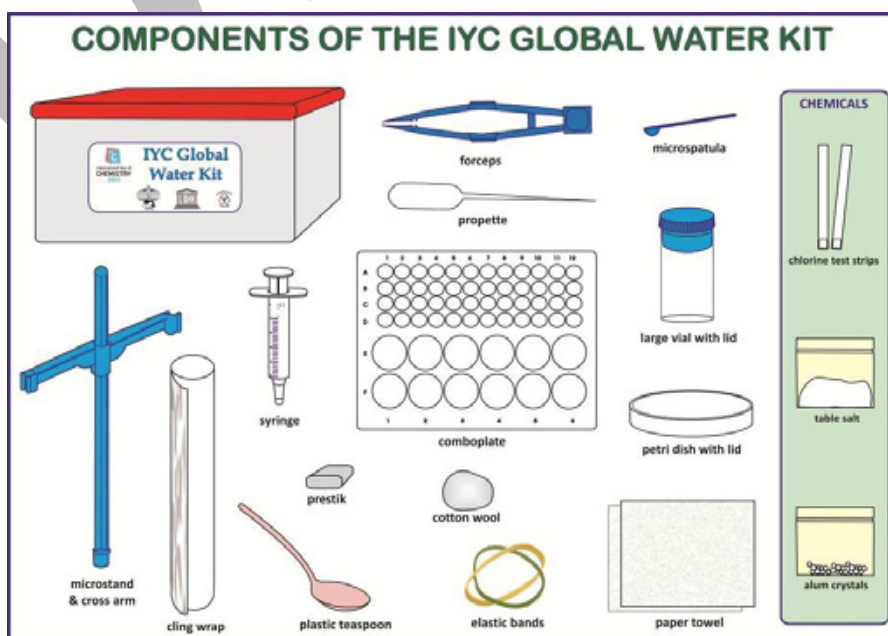
#### Global Accessibility, Environmental Responsibility – Microscale Kits for the Global Chemistry Experiment

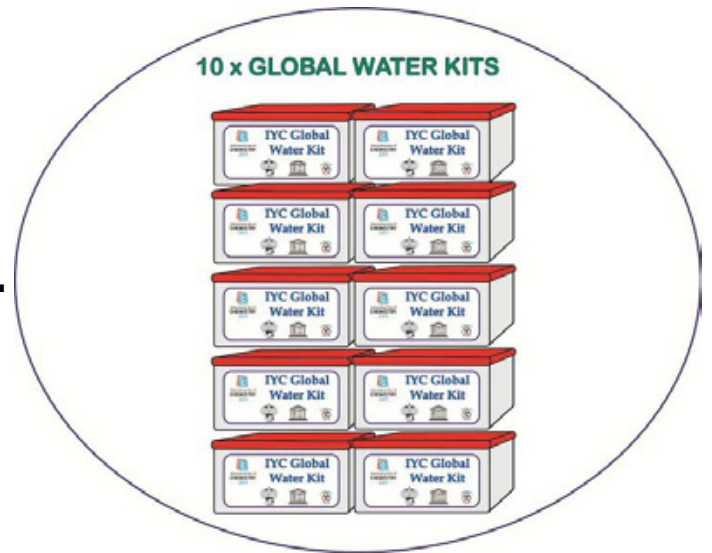
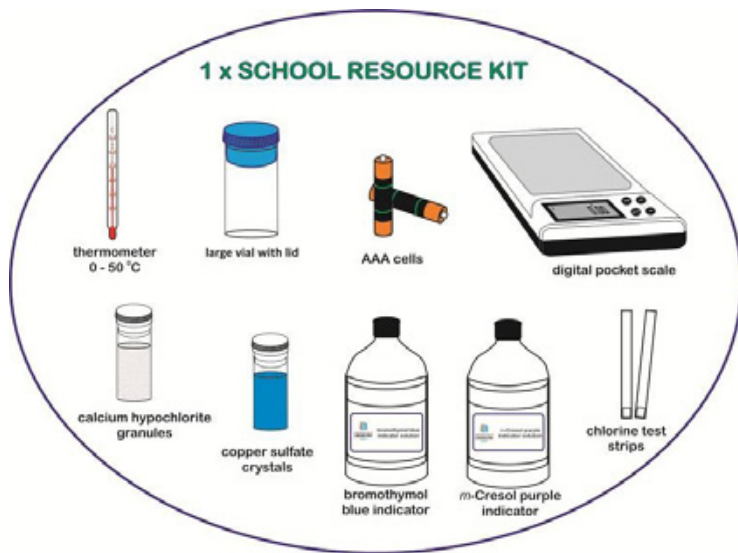
To achieve the global awareness of the importance of chemistry for the well-being of humankind and to encourage interest in chemistry among young people, it is important to offer practical access to the Global Chemistry Experiment. Some minimal equipment and chemicals must therefore be accessible to all. This must be low-cost, convenient and safe to use, and be consistent with demonstrating the concern of chemists for the environment. Mindful of these requirements microscale chemistry kits, including the essential chemicals, have been designed that are based upon kits that have been supported for a number of years by both UNESCO and IUPAC. It is believed that these are affordable in developing as well as developed countries, and furthermore, they do not require a science laboratory for use. They may be purchased by schools or by funders wishing to support the IYC Global Chemistry Experiment. A School Pack, comprising 10 Kits for learners working in groups and 1 Teacher Resource Kit, costs approximately US\$ 150. The equipment in the Kits is completely reusable; only the very small quantities of chemicals are consumables. Hence the School Pack can serve many classes of learners in a school.

All four of the activities, originally designed using traditional scale equipment (Annex 2), can be carried out with the Microscale Kits. The original instructions have been fully adapted for use with these Kits, and tried with a group of grade 9 learners. Data gathered using these Kits is equally valid for recording on the Global Experiment website (Annex 3).

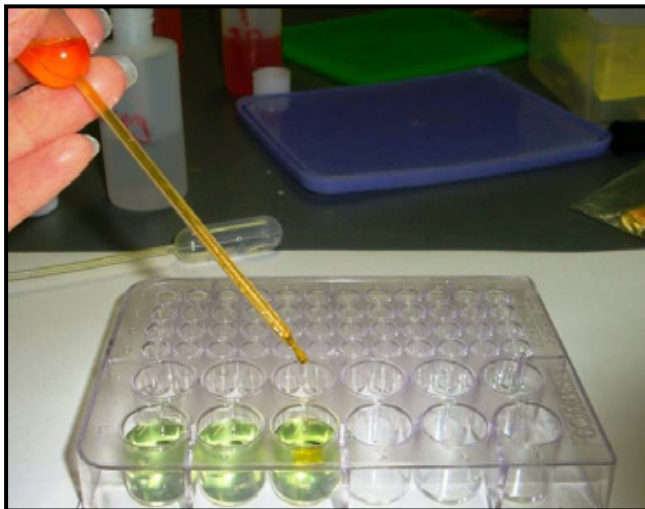
After the IYC has come to an end, the Kits remain in the schools that acquired them, and they may be used for general science experiments. Thus many of the microscale experiments in chemistry and biology and for integrated (primary) science that appear on the UNESCO website for example, can be carried out with the equipment in the Kits. Although chemicals will be required for most of these, the fact remains that the Microscale Kits will constitute a legacy of the IYC that can be very valuable for many years after.

The diagrams and pictures below aim to give an impression of the Kits. Further information about the Kits and instructions for ordering, can be found on [www.microsci.org.za](http://www.microsci.org.za) and/or [www.radmaste.org.za](http://www.radmaste.org.za)

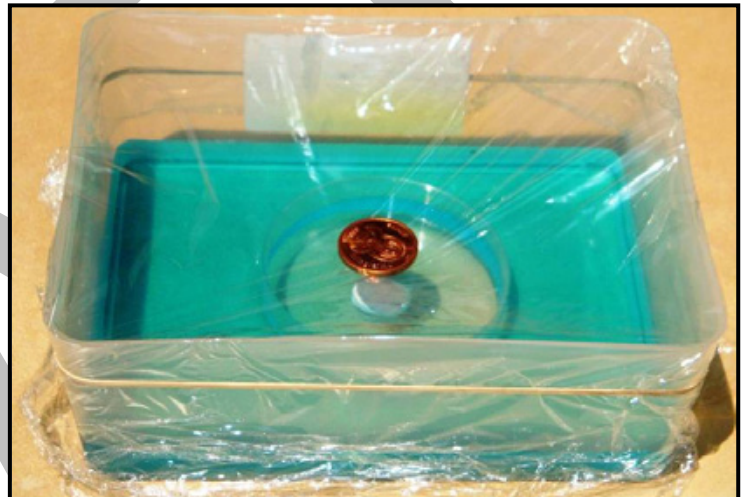




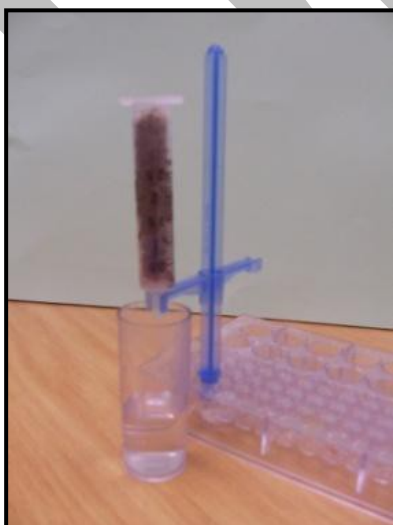
**CONTENTS OF A SCHOOL PACK**



**Adding bromothymol blue indicator solution to a water sample in the *pH of the Planet* activity**



**Making and testing a simple solar still**



**Construction and use of a small scale sand filter**



**Using the DPS to calculate mass of salt remaining in the *Salty Waters* activity**