



## **PUBLIC DISPLAYS AND DEMONSTRATIONS**

Organization of public displays, including hands-on experiments, is a useful method of communicating information on science to the general public, including children. Such a project can be organized by Local Sections, Student Chapters, post secondary departments or other groups. This is one activity that can be successfully undertaken in collaboration with colleagues in other disciplines.

### **Guidelines**

- The exhibition should be run by enthusiastic people. Students are excellent candidates.
- The topic must be made understandable in everyday terms.
- The exhibit should involve 'hands-on' experience.
- If possible, the experiments should comprise a unified exhibit with a common theme. Have student hands-on mixed with industrial information booths.
- Chemistry experiments must illustrate some principle and explain something related to everyday experience. They should not be strictly sensational.
- All experiments and demonstrations must be safe for operator and audience, must have been tested by the prospective demonstrators and be foolproof when carried out repeatedly in a public place. Many malls now restrict such things as the use of helium for balloons, some of the visual experiments with flames and may have other safety restrictions.
- If possible, experiments should involve the audience.

### **Posters**

The positioning and size of any posters used in the display are important.

The content of the posters should be carefully considered.

The budget should include funds for professional production.

## **Acknowledgements**

All donors of equipment or funds should be acknowledged at the exhibition.

## **Location**

For public events, do not hold the event at a university; it is unfamiliar to the public and visits there are not usually part of their routine.

Community, cultural or municipal centres are the best places to set-up public displays because they get a high volume of traffic and families are used to visiting these buildings. Shopping malls are also excellent venues, and reach people who wouldn't normally search out science demonstrations. Book malls well in advance as October is the a busy month for exhibits. Thursday evenings and Saturdays are the best times to guarantee high traffic flow. Science centres and museums have a more focused audience but get relatively good traffic.

Shopping Centre: contact the shopping centre manager well in advance (8 months), requesting space and asking for information on exhibit type, insurance requirements. Insurance for Local Sections may be arranged with the CIC National Office on an individual basis. Don't let this item deter you from holding a public exhibit. For more information, contact the National Office.

Cultural Centre, Library: Choose a location that the public are in the habit of visiting for other events, e.g. libraries, art exhibits, etc. Some venues may help with the advertising and other expenses. Ask them in advance about any restrictions they may have that will prevent you from doing some of your experiments.

## **Logistics**

Experiments should be demonstrated to an appropriate group (e.g. at a Local Section meeting) as soon as details have been worked out. A trial should be staged three to four weeks in advance at a high school or similar location, to verify the operation of the experiments and work out any problems.

The logistics of setting up and manning the event should be reviewed in detail. Determine the layout and assign specific exhibits to specific locations. Arrange for delivery of tables and other materials. Establish with the facility the appropriate time for set-up. Ensure the committee arrives on time. Appoint someone to be responsible for a final inspection. Be "self-contained" although in locations such as shopping malls you will have a little flexibility to purchase supplies if required.

## **Publicity**

Flyers distributed to elementary and high schools, newspaper and radio interviews, advertise on web sites, free radio announcements on community news programs are all recommended.

## **Costs**

Expenses include: insurance, rental of tables and poster boards, postage, mailing, equipment and supplies.

## **Evaluation**

The estimated attendance of one groups survey at the shopping centre exhibit listed 1,000 persons during an 8.5 hour day, 65 % adults, 30 % children, 5 % youth (late high school, early college). There were a larger number of the latter group in the mall but they did not visit the exhibit. Is there a way to attract this age group?

## **Sample Demonstrations and Experiments**

Chemistry experiments:

- Soxhlet extraction of plant components using cabbage, spinach etc.
- Chromatography of spinach extract to show different chlorophylls.
- pH measurement, using pH meter, pH papers, and indicators, of household products -- lemon juice, soft drinks, water, other juices, vinegar etc.
- Effects of liquid nitrogen on substances such as bananas, rubber, flowers etc. (demonstrates states of matter).
- Molecular modeling on a computer -- PC modeling program -- of such things as alcohol, aspirin, heroin, vitamins.
- Hazardous/toxic chemicals -- information about the toxic nature of various chemicals (handout, pamphlet), dummy examples such as flour or icing sugar were used to represent other compounds showing the quantities that are lethal.
- Which is lighter – diet or regular soft drinks. One group of students had an aquarium to show this experiment. Drinks donated by a local grocery store were given away free to visitors who came to check out the experiment.
- A computerized quiz (composed by students).

## Preparing Demonstrations

Public demonstrations of some of the most visual effects of chemistry have always been very popular. Douglas Hayward, FCIC, gave in-class demonstrations for a number of years. His 'Do-It-Yourself Chemistry' video was extremely popular.

Joe Schwarcz of McGill University's Centre for Science and Society has been working on a public lecture series in chemistry for over 20 years in collaboration with Dr. David Harpp and Dr. Ariel Fenster. They have been performing their chemistry shows across the country. Visit their website at <http://ww2.mcgill.ca/chempublic/>.

*Chem 13 News*, produced by the Department of Chemistry at the University of Waterloo, might be of interest to you. Every issue contains interesting ideas. For additional information contact *Chem 13 News*, Department of Chemistry, University of Waterloo, Waterloo, Ontario N2L 3G1; Tel: 519-885-1211, ext. 3701. A one-year subscription is \$14; \$26 for two years. [Web link](#)

Information and guidelines on performing demonstrations can be found in the section **Going out to the Schools**.