

## Workshop 1

### ***Using Data Loggers and Digital Microscopes***

#### **Presenter Information**



Phil Jones has taught science, physics and IT subjects in Australia and Europe and has been a lecturer in the DipEd program at Sydney Institute of Education, Sydney University. He has written a number of software programs and developed a range of interfaces and sensors for science.

He regularly presents workshops for schools, science teachers associations and universities. He is currently chief education consultant with The Logical Interface, a company he formed in 1989 to assist educators implement technology.

#### **Academic qualifications:**

MSc(HONS) Physics (Macquarie University)

BSc(HONS) Physics, (Sydney University)

Diploma in Education, (Sydney University)

#### **Style:**

Phil is an experienced presenter with an informal easy-going style. As a former teacher, he relates well to his audience and the problems they face. He uses humour and coaching techniques to overcome any apprehension participants feel at using unfamiliar technology to ensure they leave his workshops feeling eager to try out their new skills in the classroom.

#### **Comments from previous workshops:**

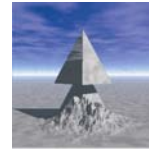
*This is one of the best PD courses I have been involved with. Phil's knowledge has given me confidence to use the skills I have learnt today.*

*Excellent and informative.*

*Very good day full of information and practical application.*

*We wish we had been to Phil's inservice a long time ago.*

*Best information I have received to date regarding use of data loggers.*



## Who will get the most out of this workshop?

- Secondary school science teachers
- Lab technicians in secondary schools
- Primary school teachers

## Outline

Use of technology is now a compulsory part of the curriculum both in primary and secondary schools, however many teachers feel uncomfortable about incorporating the new equipment into classroom learning.

Lab technicians also feel unprepared for the task of purchasing this complex equipment and assisting with lab and field experiments using the technology.

This workshop is designed to increase participants' confidence and mastery of digital technology to enrich the learning experience for their students.

The day is divided into two parts. Part One addresses data loggers using the school's own equipment. Part Two is a 1½ hour session on digital microscopes.

*Equipment is provided for Part Two if it is not yet available in the school.*

Participants will be provided with a booklet outlining the features of the most commonly available equipment along with a set of experiments they will undertake in the workshop and can readily apply with their own classes.

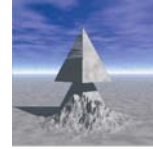
## Learning Outcomes

At the completion of the workshop participants will be able to

- Understand the role and importance of data loggers and digital microscopes to science education
- Understand how to use a data logger and a digital microscope.
- Identify data logger sensor types and their application
- Understand fundamental principles such as
  - sample rate
  - sample number and
  - resolution.
- Collect data
- Display data as a graph and within a table
- Manipulate data within the graph
- Take measurements with graphical data
- Export data to Excel and use Excel graphing features
- Conduct experiments suitable for their level of student

## Length of Program and Timing

The program is a one-day workshop (aligned to a school day).



## **Workshop Numbers**

Since the workshop is practical and hands-on, the ideal number is no more than 12.

## **Equipment Requirements**

The workshop needs to be delivered in a science laboratory equipped with computers and a data projector.

Participants bring their own data loggers, though the presenter also brings and demonstrates a small selection of equipment including digital microscopes/eye pieces.

## **Presenter Fee**

The fee varies depending on travel requirement. Please contact The Logical Interface on 02 9541 0367 or email your enquiry to [info@logint.com.au](mailto:info@logint.com.au)