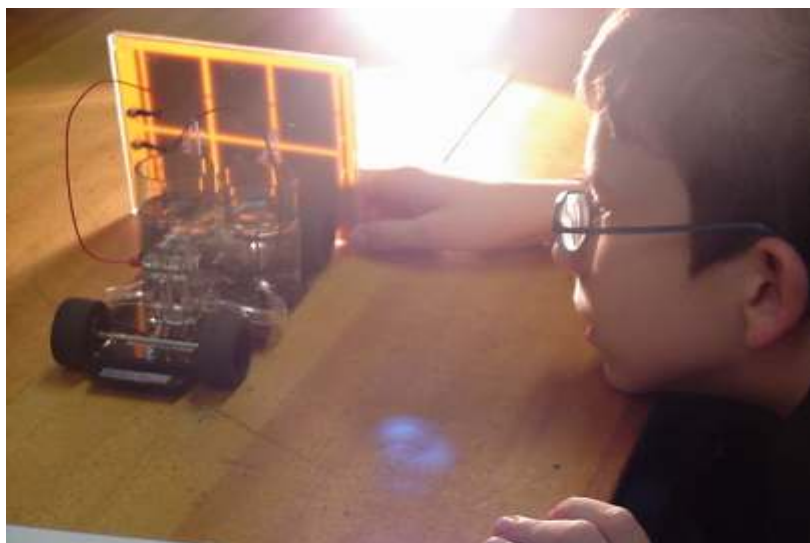




# CSIRO

## Touring Science Education Programs



The CSIRO's travelling science programs are on the road again in 2009 with a choice of two innovative, educational and highly entertaining presentations; **The Electricity & Magnetism Show** and the hands-on **Physical Phenomena Class**. Tours are offered to all of regional New South Wales but demand is very high so to secure a day you must book early.

The format will address the outcomes of the NSW Science and Technology Syllabus and are approved by the NSW Department of Education and Training.

### **Electricity & Magnetism**

Through exciting and interactive demonstrations, students will discover some fascinating properties of electricity and magnets.

### **Physical Phenomena**

A stimulating hands-on class designed to cover areas such as electricity and electrical circuits, energy, gases, properties of light and sound and magnetism.

#### **Comments from Teachers in 2008**

*"Very motivating and stimulating – students were engaged the whole time."*

*"It was great to have access to equipment we don't normally use."*

*"Fantastic presentation – the children's input was frequently requested."*

*"Hands on nature of the activities really got the students thinking scientifically."*

*"The presenter was fantastic and had no problem capturing the children's attention."*

*"Great show – the presenter related very well with the children"*

*"The program worked in extremely well with our science curriculum."*



# CSIRO Science Education

## Touring Programs

### Electricity & Magnetism

#### Program A: Years K-6 (activities vary with Year level)

##### Performance only

Infants: 45 minutes

Primary: 60 minutes

Maximum of 90 students per show

or

##### Hands on workshop

K-6: 60 minutes

Maximum of 35 students per workshop

Students will examine different ways of making electricity, and how electricity moves through circuits. They will also learn how magnets and electricity can be used together with some useful applications. Using interactive demonstrations students will:

- Make an electric circuit using students
- Discover that current electricity 'moves' in electric circuits
- Investigate which things electricity can move through (conductors)
- Make a battery using students, and use the BIG voltmeter
- Use solar panels and moving magnets to generate electricity
- Investigate lightning and static electricity with a Tesla coil and van der Graaf generator
- Discover what things magnets will be attracted to.
- Use a super magnet to lift a bowling ball
- Investigate electromagnets – magnets you can switch on and off
- Explore the Earth's magnetic field and its affect on a compass

##### Requirements

**Show only:** We require a room with space for 90 students to sit on the floor. Chairs not required. 2 trestle tables or equivalent. Set up time 30 minutes, pack up 30 minutes.

**Hands on workshop:** We require a room with 12 tables arranged around edge of room. Chairs not required. 2 trestle tables or equivalent. Set up time 30 minutes, pack up 30 minutes.

### Physical Phenomena – 'hands on' workshop

#### Program B: Years 5-6

Duration: 60 minutes

Maximum of 35 students

This stimulating hands-on class is designed to cover areas such as electricity and electrical circuits, energy, gases, properties of light and sound and magnetism.

Activities include:

- Balloon behaviour      Investigate what happens to volume when air is heated or cooled
- Home alone              Wire up a house using series and parallel circuits
- Energy guzzlers        Use an electricity meter to measure which appliances use the most energy
- How sweet it is         Use a refractometer to measure which drinks contain the most sugar
- Laser target             Use prisms to bend a laser beam around an obstacle course
- Light up my life         Examine the colourful spectrum in white light using spectrometers
- Trick tubes              Find out how magnets can be used to slow falling objects
- What a gas               discover how fast tablets will dissolve in water of different temperatures
- Magnets and motors    Investigate how magnets are used to turn an electric motor

##### Requirements

A room with up to 12 tables arranged around the edges of the room, 3 power points. A space for 35 students to sit comfortably on the floor, chairs are not required. Set up time 40 minutes, pack up 60 minutes.

##### THE TIMETABLE FOR THE DAY

Schools can choose up to 4 sessions of program A or program B or any combination of each. Note that a maximum of 4 sessions possible per day to allow for setting up and packing down time.

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|---|---|
| <b>HANDS-ON WORKSHOP COST: \$7.00 per student</b> | <b>PERFORMANCE COST: \$4.00 per student</b>     |
| <b>* Minimum cost per day of \$800 (gst n/a)</b>  | <b>* CSIRO will issue an invoice on the day</b> |

### **Young Australia Workshop**

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