



CSIRO

SCIENCE

TOURING SCIENCE EDUCATION PROGRAM

CSIRO's travelling science programs are on the road again in 2010 with 'Air, Atmosphere and Weather' show and the hands-on 'LEGO Robotics'. Touring is limited and demand is very high so we suggest you book early.



Programs are educational and entertaining, designed to address the outcomes of the NSW Science and Technology syllabus with all programs accredited by the NSW Department of Education and Training.

Air, Atmosphere & Weather (SHOW)

Students will 'think like scientists' and make predictions and observations during eye-catching demonstrations involving air, water and liquid nitrogen.

LEGO Robotics

During this exciting 'hands-on' class students explore the idea of what a robot really is.

Teacher's Comments

"The program links in very well with our science topics at our school."

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

"An energetic presentation with a vast range of hands on experiments."

"The hands-on participation was great – students could get to use the equipment for themselves."

"I liked the links to real science and its applications in the world."

"A great experience - the children are still talking about it 2 weeks later."

"The presenter was very excited about science and this shone through to the students."

"Super introduction to our science unit – very motivating and stimulating."

"Extremely well run – the children loved it and so did I. Thank you."



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Air, Atmosphere & Weather (show)

Program A: Suitability - Years K-6

Duration - Years K-2 sessions = 45 minutes, Years 3-6 sessions = 60 minutes.

A stimulating interactive show designed to encourage students to 'think like scientists'. Students will make predictions and observations during eye-catching demonstrations involving air, water and liquid nitrogen*. Demonstrations of evaporation, expanding gases and condensation are designed for students to question and gain an understanding of these processes. *(Liquid Nitrogen only used in presentation for Years 3-6). Demonstrations at the appropriate level (Years K-2 or 3-6) are chosen from the following:-

- Lift a Friend - Observing the effects of air - air can exert a force.
- Plunging ping pong - Demonstrating that air takes up space.
- Ruler Snap - An introduction to air pressure – air is powerful stuff.
- Balloon behaviour - Expansion and contraction of air when heated or cooled,
- Rising Air - Simulates a model which scientists use to study rising warm air.
- Tornados - Using models to study weather - make a tornado in a bottle.
- Cloud in a Bottle - Demonstrates cloud formation and the importance of cloud seeding in research.
- Studying Clouds - Scientists using lasers in satellites to study clouds and weather patterns.
- What is Air? - Looks at the composition of air. Using Liquid nitrogen to look at fog, frost, condensation, and properties of gases as they cool down.
- Ancient Air - Scientists collecting frozen bubbles of air from the Antarctic ice core to study pollution, the Greenhouse effect and how the atmosphere has changed.

Requirements:

2 large tables and a chair at front and space for up to 90 students to sit comfortably on the floor.

A power point and a sink with running water close by (in the room is preferable).

Set up time 30 minutes, pack up time 20 minutes.

LEGO Robotics (hands-on workshop)

Program B: Suitability Years 5-6

Duration 60 minutes

This exciting 'hands-on' class explores the idea of what a robot really is. Students work in pairs with a robotic vehicle exploring what the robot vehicle will do and what senses the robot vehicle needs to operate. The robot vehicle is built around an 'RCX Lego Brick' which is a small programmable computer. The programming is all icon based and easy to understand.

After working with the robots to complete a particular task, students will then make modifications to the robot to see if they can improve the design. Finally, the students will examine the actions of a more sophisticated program and what effects different environmental factors, such as light, will have on the robot.

Requirements

A room with 2 power points, 1 table and lots of clear floor space to work on. No chairs required.

The use of light sensors on the robot means that they work best in an even light filled room (a room with blinds or without direct sunlight works best).

Maximum 35 students, set up time 30 mins, pack up 15 minutes.

HANDS-ON WORKSHOP COST: \$7.00 per student	PERFORMANCE COST: \$4.00 per student
- Minimum cost per day of \$800 (gst n/a)	- CSIRO will issue an invoice on the day
Timetable: Maximum of 4 sessions per day with any combination of program A or program B.	
- Appropriate set up & pack up time required.	

Young Australia Workshop

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