



# STAV Physics Workshops

## for teachers of middle years science



- ? Are you a teacher of science in the middle-years (5-8) or lower secondary years (7-10), wondering how to engage students in learning the basics of physics?
- ? Do your students find it hard to see how physics ideas relate to their experiences outside the classroom?
- ? Do you wish your students were asking more questions about physics topics?
- ? Do you feel your own physics background has not prepared you well for teaching some physics topics?
- ? Would you like to feel more confident about your own understanding of the physics in your school's science curriculum?

**Then, these one-day workshops are designed for you!**

(These workshops may also be suitable for teachers of year 11 physics who do not have a strong physics background.)

**Included:**

- Booklet of students notes and activities
- CD of other resources.
- Morning tea, lunch and afternoon tea.

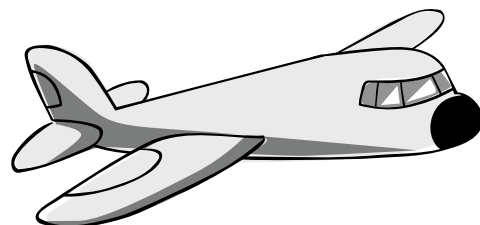
**To register, download a registration form from our website:**

<http://www.stav.org.au/html/scienceEvents.html>

**Registration fee:**

STAV Individual members: \$100

Subscribers/Non-members: \$120



**Turn over for individual workshop details**

## Interactions: Making sense of Newton's laws of motion



Newton's Laws of Motion epitomise the essence of physics: three simple axioms that together account for all the mechanical interactions in our experiential world, and yield elegant mathematical predictions. Yet for many people they also represent everything that is most impenetrable and abstract in physics. In this workshop we will look for the meaning behind the archaic expressions of these laws, and explore their ramifications for understanding everyday experiences such as skateboard riding and trampoline jumps.

This workshop is intended for teachers of years 5-10 science who wish to develop their own conceptual understanding; the concepts are presented at the level of year 9-11 students. Some pedagogical implications of the axiomatic nature of the concepts will be considered, including the year levels at which the concepts can be meaningfully addressed, the limited scope for hands-on activities that contribute to students' conceptual understanding in this topic, and the consequent need for alternative strategies for engaging student interest. The workshop may also be useful for teachers of year 11 physics who have limited experience teaching at this level, and/or have limited formal background in physics.

STAV asks that teachers enrol for this workshop only if they will participate in the whole day.

### ***What previous participants have said:***

- Gave a great opportunity to get answers to questions to ensure clarity on the topic.
- Very interactive.
- Very useful session – great activities to use with students. Christine really helped us to understand the major concepts in forces and how to pass this on to our students.
- Great forum for discussion of queries/concepts.
- My understanding of forces has improved considerably.
- It helped 'smooth out' my understanding of Newton's Laws. Also will use some ideas more often in the future and not confuse students with the jargon.

### **This workshop will be offered 4 times in 2010:**

**29 January, 26 March, 23 July, 15 October**

Time: 9.00am – 4.30pm

Venue: STAV House, 5 Munro Street, Coburg

Presenter: Christina Hart

**To register:** Go to [www.stav.org.au/html/scienceEvents.html](http://www.stav.org.au/html/scienceEvents.html)

