



A PhUn week Incursion in Australia Teaches 3-4 and 5-6 Graders Exercise Physiology

Patricia A. Halpin, Biological Sciences Program, Biotechnology Program,
University of New Hampshire,
88 Commercial Street, Manchester NH 03101



Purpose

To perform an exercise physiology experiment and a pedometer challenge at a public Australian primary school for all 3rd-4th and 5th-6th grade classes.

Methods

The physiologist described the job of a physiologist
Background information on the cardiovascular system was presented.
Students designed their hypothesis; exercise increases heart rate.
Resting levels of heart rate were measured .
The Physical Education teacher led the exercise and co-facilitated the discussion of results.



On the playground one member of each pair ran laps for five minutes while the other cheered them on.
When exercised was completed heart rate was measured.
The exercise was repeated with the other member of the pair.
Results were discussed with the class.



Students measure their post exercise heart rate.



Pedometer Challenge

Students calibrated their pedometers by walking 20 steps, then checking accuracy.

If inaccurate they adjusted the position of pedometer and recalibrated.

Students estimated how many steps to walk to the end of the gym and back.
Then walked and checked their pedometers to determine the accuracy of their prediction.



The final experiment was to estimate how many kangaroo hops to the end of the gym and back.

Results

For all the students heart rate increased with exercise.
Students learned why oxygen demand increases with exercise.
Healthy eating and active living was discussed.
Pedometer challenge demonstrated how different types of activity have different stride lengths: walking, running and kangaroo hopping.



Benefits to Students

The opportunity to meet an American Scientist and learn about physiology. The Vice Principal wrote: "Children learn through the process of meta-cognition leading to reconfiguring pre-existing understandings and knowledge which requires active participation with a range of experts using a range of expressions".

Benefits to Physiologist

The opportunity to teach Australian students and compare their science knowledge base to US students.

Taking a side trip to travel to two states: Victoria and New South Wales, and one territory, Northern Territory



L to R: Dandenong Ranges National Park, Victoria. Sydney Opera House, New South Wales, Watarrka National Park, Northern Territory

Conclusions

Having the use of the track as part of the playground is common in Australia and very useful. If there was no track running around the perimeter of the playground has also been used successfully.

Students discussed their data and it supported their hypothesis. They also learned about the benefits of exercise and healthy eating.

It was beneficial to have the physical education teacher leading the exercise and co-facilitating the discussions. He was in charge of student management as well.

With the older students the additional activity, the Pedometer Challenge, was added. Students learned to estimate the number of steps and adjusted their estimations for each type of activity based on stride length.

Funded by UNH Summer Graduate School Fellowship.