

# Sports science programs

Residential sports science programs for high school students



## Did you know?

We can also provide Sports testing and Sports Science demonstrations at your school, or you could select a Sports Science program as part of your School Camp at the Sydney Academy of Sport and Recreation Centre. Contact us for more details.

## For enquiries and bookings

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**Communities**  
Sport & Recreation

# Senior high school students can enjoy Sydney Academy's fully-equipped sports science facilities and expertise at a two-day residential sports science program. Students test their physical skills while exploring aspects of the PDHPE curriculum.

Our experienced sports scientists deliver a unique and flexible program using equipment not available to most schools, which gives students an opportunity for hands-on learning. These same professionals have worked with members of the Waratahs, NSWIS Winter Sports Program, Manly Sea Eagles and other elite athletes to improve their performance.

The program includes:

- meals
- accommodation
- two days of sports science testing and demonstrations.

We tailor our programs to the learning outcomes you nominate, some of the relevant curriculum outcomes we can cover include:

## Stage 5

### PASS Physical Fitness module

- Physical fitness
- Developing physical fitness
- Measurement and evaluation

## Stage 6

### PDHPE Preliminary Core Topic 2 – The Body in Motion

- How do the musculoskeletal and cardiorespiratory systems of the body influence and respond to movement?
- What is the relationship between physical fitness, training and movement efficiency?
- How do biomechanical principles influence movement?

### PDHPE HSC Core Topic 2 – Factors Affecting Performance

- How does training affect performance?
- How can nutrition and recovery strategies affect performance?

### PDHPE HSC Option Topic 4 – Improving Performance

- How do athletes train for improved performance?
- What are the planning considerations for improving performance?

### Sport, Lifestyle and Recreation Fitness module

- Nature of fitness
- Fitness programming
- Improving fitness

## Sample two-day program

### Day 1

9.30am	Arrive
10am – 12pm	Laboratory demonstration
12pm – 12.45pm	Lunch
12.45pm – 2.45pm	Theory session
3pm – 5pm	Fitness development session

### Day 2

9am – 10.30am	Sports testing
11am – 12 pm	Theory session
12pm – 1 pm	Lunch
1pm – 2pm	Fitness development session

## Laboratory demonstrations

A demonstration in the Human Performance Laboratory gives students the chance to experience a range of tests used to assess the athletic performance of elite athletes, such as:

- height and weight
- blood pressure
- explosive strength – counter-movement jump
- anaerobic tests – 10-second or 30-second bike tests measuring peak power
- VO2 testing-Optional running treadmill /bike test
- cybex isokinetic test – force production capabilities of muscles around the knee joint.

Sports scientists explain the physiological basis of each test, with a focus on the energy systems used for different types of exercise. They discuss how the results compare to those of elite athletes, and which training methods can improve performance.

## Fitness development sessions

These are practical sessions with instruction in training techniques alongside actual training sessions. Students can choose from the options below:

- speed and agility
- core strength and flexibility
- body weight circuit training (introduction to resistance training).

## Theory sessions

These information sessions are in a practical interactive workshop format. Options include:

- instruction in fitness testing and exercise prescription
- nutrition
- periodisation and planning
- fatigue and recovery
- theory of resistance training.

## Sports testing

A fitness testing session provides feedback for each student on aspects of their physical fitness. Each student receives a score card to record their results and compare them to the scores of talented athletes of a similar age. The uses and limitations of each test are discussed, and Sydney Academy staff cover methods of improving each of the following fitness variables:

- aerobic fitness – beep test/ yo-yo test
- explosive strength – vertical jump, counter movement and drop jump
- acceleration and speed – 10m, 20m and 30m sprints with timing lights
- flexibility – stand and reach or sit and reach
- abdominal condition – 7-stage abdominal test
- agility – 5-0-5 test with timing lights.

