



# Sportworks

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*Developed by* Tim Byrne, Peter Pentland, Janet Marlow and Pennie Stoyles, Museum Victoria.

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# Teacher notes

This education kit provides the basis for an integrated unit of work focussed on an excursion to explore the *Sportsworks* exhibition at Scienceworks.

The school-based activities promote the view that sport and physical activity are for all – not just the elite athlete. They also provide linking points into key learning areas such as Maths, Science, Health & Physical Education, Technology and English.

Sportsworks is an exhibition which demonstrates the principles of fitness, movement and skills, three important components of sport.

The exhibition consists of two main interactive areas, **Test Yourself** and **Try It**. A detailed description of the exhibits is provided on the CD.

## Program outline

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Please note that all *Sportsworks* programs are led by you, the class teacher.

A one-hour session in the Sportsworks exhibition consists of:

- 5 minutes for warm-up and stretching activities before arriving at the exhibition
- 25 minutes of Pathway activities
- 25 minutes of Test Yourself activities (record results on Sportspass)
- Last 10 minutes – supervised free time so that students can revisit their favourite exhibit.

The *Sportsworks* exhibition caters for up to 75 students during each session.

### Objectives & themes

The *Sportsworks* exhibition aims to allow the visitor to:

- Discover their sporting potential
- Try sports which require different abilities
- Learn how to improve their performance.

Within this experience the content themes explored are:

- Measuring your own abilities
- Correct sporting techniques
- Human body systems important to sport
- Latest sporting technology and equipment and the science involved.



These objectives are translated into an exhibition experience using these two approaches:

A. **Test yourself** interactive area that allows the visitor to test and measure themselves and learn about their own abilities.

B. **Try it** interactives which provide experiences specific to selected sports.

The exhibition text panels emphasise a healthy lifestyle while the exhibits cover a wide range of sports and fitness areas. They are fun, interesting and encourage activity. Details of the exhibition are provided on the CD-ROM.

### **A special note to teachers**

There are some students who lack confidence or feel uncomfortable about their physical ability and/or taking part in competitive activities. In activities requiring students to race against a partner, try to match up students who are similar in size, strength and skills.

Discuss the concept of 'personal bests' with your students so that they can try to improve their own skills or best times when taking part in activities.

There are some activities that may be unsuitable for some students so it is important to think of other ways they can be involved.

### **Warm up exercises**

In the interest of your group's health and safety, Scienceworks insist on a warm-up for students before starting any of the Pathways. Suggested warm-up activities are listed below (page 6). The best place for engaging in a warm-up is on the Lower Ground Floor or one of the Welcome Rooms.



## Excursion checklist

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- **Book and confirm the details**

Check that the date and time of the proposed excursion, shown on your confirmation letter are correct.

- **Set a context for the excursion**

An excursion to Scienceworks will produce the best results if it is an integral part of a whole unit of work. See the school-based activities section and the resources section to help you prepare such a unit.

- **Select the most appropriate activities for your students**

This education kit contains three pathways for use in the exhibition:

Pathway A is designed for students in Years 3–6.

Pathway B is designed for students in Years 7–10.

Pathway C is a multiple choice suitable for middle years.

In addition a Sportspass, designed for recording individual performance at the various measurement activities in the *Test Yourself* area. The *Sportspass* is suitable for all age levels.

You may adapt any of the material to suit the specific needs of your students.

- **Divide the class into small groups**

Scienceworks suggests students work in small groups, each overseen by a supervising adult.

There are activities in the Sportsworks exhibition which can lead to competition between students and comparisons of strength and skills. While for some students this is a very enjoyable aspect of the exhibition, for others, it can work against their full participation and enjoyment. This problem can be overcome by careful consideration of students when allocating them to groups. In some cases single sex groups may be the best option.

Familiarise the students with the warm-up activities that should be done on arrival at Scienceworks.

- **What to bring**

Make sufficient copies of chosen Pathways (pp 18-25) & Sportspass (p17) sheets for your class.

Students need to bring their clipboards and pens/pencils. One copy of the chosen Pathway per group is sufficient if students are working in groups. However, a copy of *Sportspass* should be provided to each student.



## Warm-up exercises

It is recommended that students do these exercises before entering Sportsworks, especially if they have been sitting in a bus for a long time.

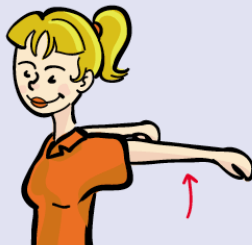
The exercises presented can be done while waiting for the group booking to be processed at the admissions desk. The sitting-down exercises are an optional extra if room allows.

The diagrams are taken from the Warm Up poster provided by Smartplay. A pdf version of the poster is included on this CD.

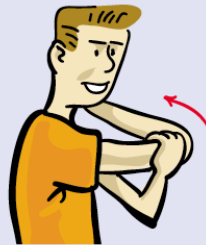
Smartplay provides information on sport safety and injury prevention:

<http://www.smartplay.com.au/>

### Arms, Shoulders, Wrists



**Biceps Stretch**  
(hands apart)



**Shoulder Stretch**  
(keep elbow parallel to ground)



**Lateral Flexion Stretch**  
(one side then the other, push pelvis across as you bend)



**Triceps Stretch**  
(pull elbow across and down)

### Neck

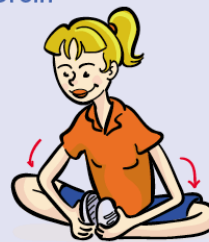


**Neck Flexion and Extension Stretch**  
(forward then back)



**Neck and Lateral Flexion Stretch**  
(one side, then the other)

### Groin



**Abductor Stretch**  
(push down with elbows on knees very gently, keep back straight)



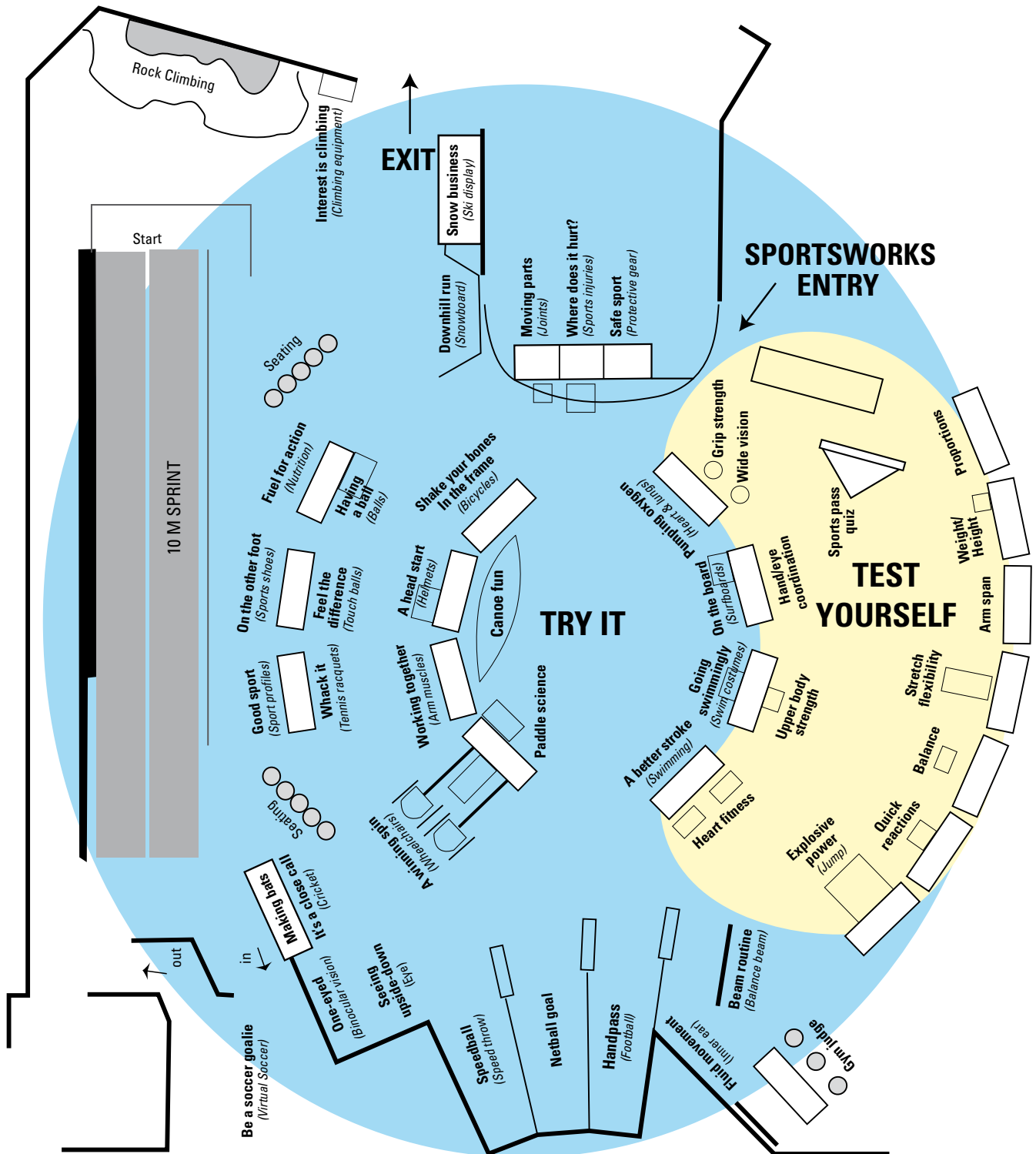
**Abductor Stretch**  
(keep feet pointing forward, lunge sideways on bent knee, keep stretched leg straight)



# Sportsworks exhibition floor plan

Once you are satisfied the students have warmed up and stretched enough (see page 6), direct your group to disperse evenly through the whole exhibition. We suggest groups spend equal time in the two areas **Test Yourself** and **Try It**.

- **TRY IT**
- **TEST YOURSELF**





# Curriculum links

## Victorian Essential Learning Standards Levels 1-6

Sportsworks

Curriculum links

Strand	Domain	Dimension	Sportsworks/ School-based* Activities
<b>Physical, Personal and Social Learning</b>	<b>Health and Physical Education</b>	Movement & Physical Activity	Test yourself area Try it area *Food groups & sport Pathways A, B & C *Everybody's walking *Hydration and sports drinks
		Health Knowledge & Promotion	
	<b>Interpersonal Development</b>	Building Social Relationships Working in Teams	Pathways A, B & C
	<b>Personal Learning</b>	The Individual Learner Managing Personal Learning	Sportspass Test yourself area
	<b>Civics and Citizenship</b>	Civic Knowledge & Understanding Community Engagement	*Sportsmanship *Strong bodies, strong families, strong communities *Racism in sport *Sports stars
<b>Discipline-based learning</b>	<b>English</b>	Reading Writing	Pathways A, B & C *Sports stars



Sportsworks

Curriculum links

Strand	Domain	Dimension	Sportsworks/ School-based* Activities
<b>Discipline-based learning</b>	<b>Mathematics</b>	Number Measurement, Chance & Data Working Mathematically	Test yourself area Sportspass *Monitoring heart rates & personal fitness
	<b>Science</b>	Science Knowledge & Understanding Science at Work	*Air resistance, what a drag! *High tech clothing *Safety vest *Build a force measurer *Forces and physics in sport
<b>Interdisciplinary Learning</b>	<b>Communication</b>	Listening, Viewing & Responding Presenting	*Sports stars *Design a banner
	<b>Design, Creativity and Technology</b>	Investigating & designing Producing Evaluating	*Air resistance, what a drag! *Technology design progressions *Make a model arm
	<b>Information &amp; Communications Technology (ICT)</b>	ICT for visualising thinking ICT for creating ICT for communicating	*What's your logo? *High tech clothing *Stored energy *The Long walk *Gold, Gold, Gold!!
	<b>Thinking</b>	Reasoning, processing, creating Creativity Reflection, evaluation, metacognition	Mind map of sport *Build a force measurer *Be seen, be safe *Centre of gravity



## Relevance to the Victorian CSF II

### Health and Physical Education Key Learning Area

Sportsworks

Curriculum links

Level	Outcome Statement	Sportsworks Exhibits/ School-based* Activities
<b>Level 1</b>	Perform simple movement patterns. Identify feelings experienced during and after physical activity.	All exhibits, especially Test Yourself area
<b>Level 2</b>	Describe how individuals and groups share characteristics yet are also unique. Identify why there are different rules and expectations in different situations. Perform locomotor skills with proficiency.	Test Yourself area  Rock Climbing  Throwing and kicking gallery Explosive Power (Jump)
<b>Level 3</b>	Perform manipulative skills with proficiency.	Quick reactions Throwing and kicking gallery
<b>Level 4</b>	Plan and implement strategies to promote personal and environmental health and safety. Perform motor skills proficiently in complex skill development activities.	*Food groups and sport Heart fitness Rock Climbing Speedball Stretch flexibility Beam Routine
<b>Level 5</b>	Describe health issues about which young people make decisions, and strategies that are designed to maintain or improve their health. Describe hereditary and environmental factors that affect human development. Perform proficiently motor skills, which are appropriate to specific games, activities and sports.	*Food groups and sport *Hydration & sports drinks Everybody's walking Try It area Test Yourself area  Throwing and kicking gallery Beam Routine



## Science Key Learning Area

Sportsworks

Curriculum links

Level	Outcome Statement	Sportsworks Exhibits/ School-based* Activities
<b>Level 3</b> <b>Biological strand</b>	Identify the main structural features that work together to form systems in plants and animals.  Discuss skeletal, muscular, circulatory, cardiovascular systems.	Test Yourself area Heart Fitness, One-eyed, Wide vision Quick Reactions Fluid Movement ( <i>Inner ear</i> ) Working Together ( <i>Arm muscles</i> ) Moving Parts ( <i>Joints</i> ) Where does it hurt? ( <i>Sports injuries</i> )
<b>Level 4</b> <b>Biological strand</b>	Describe how selected skeletal, muscular, circulatory, cardiovascular systems function.  Discuss skeletal, muscular, circulatory, cardiovascular systems of plants and animals.	Test Yourself area Heart Fitness, One-eyed, Wide vision Quick Reactions Fluid Movement ( <i>Inner ear</i> ) Working Together ( <i>Arm muscles</i> ) Moving Parts ( <i>Joints</i> ) Where does it hurt? ( <i>Sports injuries</i> )
<b>Level 3</b> <b>Physical strand</b>	Identify transformations of energy involving electricity, light, sound, heat and movement.  Identify the action of forces in everyday situations.	All exhibits, especially Test Yourself area Working together ( <i>Arm muscles</i> ) Test Yourself area
<b>Level 4</b>	Design and build simple devices that transfer or transform energy.  Describe the motion of objects in terms of simple combinations of forces.	Working together ( <i>Arm muscles</i> ) Test Yourself area *Forces and physics in sport
<b>Level 5</b>	Explain how mechanical systems can direct and modify force and motion.	Test Yourself area



## Technology Key Learning Area

Sportsworks

Curriculum links

Level	Learning Outcome	Sportsworks Exhibits/ School-based* Activities
<b>Level 3 Materials</b>	Compare the characteristics and uses of common materials.	Going Swimmingly <i>(Swim costumes)</i> A Head Start <i>(Helmets)</i> On the board <i>(Surfboards)</i> Whack it <i>(Tennis racquets, etc)</i> Feel the difference <i>(Touch balls)</i> Paddle science
<b>Level 4 Systems</b>	Explain the relationship between the inputs, processes and outputs of simple systems.	Test Yourself area One-eyed Seeing upside-down
<b>Level 4 Materials</b>	Explain how the specific characteristics of materials affect functional and aesthetic design requirements.	Going Swimmingly <i>(Swim costumes)</i> A Head Start <i>(Helmets)</i> On the board <i>(Surfboards)</i> Whack it <i>(Tennis racquets, etc)</i> Feel the difference <i>(Touch balls)</i> Paddle science Shake your bones In the frame <i>(Bicycles)</i>
<b>Level 5 Systems</b>	Explain the components and operations of systems and how people control and use systems.	Test Yourself area One-eyed Seeing upside-down
<b>Level 5 Materials</b>	Explain some of the social and environmental implications of using particular materials in products.	Going Swimmingly <i>(Swim costumes)</i> A Head Start <i>(Helmets)</i> On the board <i>(Surfboards)</i> Whack it <i>(Tennis racquets, etc)</i> Feel the difference <i>(Touch balls)</i> Paddle science Shake your bones In the frame <i>(Bicycles)</i>



## Mathematics Key Learning Area

Sportsworks

Curriculum links

Level	Learning Outcome	Sportsworks Exhibits/ School-based* Activities
<b>Level 1</b>	<p>Estimate, measure &amp; compare the size of objects.</p> <p>Represent, summarise and discuss data using concrete and pictorial displays and oral descriptions.</p>	<p>Test Yourself area e.g. Weight, Height, Proportions, Arm span</p>
<b>Level 2</b>	<p>Use everyday language to describe and compare distances, mass, capacity and area.</p> <p>Measure objects by comparing to formal units and standard units of measurement and using simple, common measuring tools.</p> <p>Record, represent and summarise data in lists and simple graphs.</p> <p>Describe and interpret data in lists and simple graphs.</p>	<p>Test Yourself area e.g. Weight, Height, Explosive power, Proportions, Arm span</p> <p>Sportspass</p>
<b>Level 3</b>	<p>Make increasingly accurate estimates of measurements using informal units and standard units.</p> <p>Describe and interpret data displayed in simple scaled graphs.</p>	<p>Test Yourself area e.g. Weight, Height, Explosive power, Proportions, Arm span</p> <p>Sportspass</p>
<b>Level 4</b>	<p>Use measuring instruments, read simple scales and measure accurately to the nearest marked gradation, taking into account the degree of exactness required.</p> <p>Estimate, measure and calculate time elapsed (duration).</p> <p>Tell the time accurately using analogue clocks and digital clocks.</p>	<p>Test Yourself area e.g. Weight, Height, Explosive power, Upper body strength, Balance, Stretch flexibility, Heart fitness, Proportions, Arm span</p> <p>Sportspass Quick reactions Ten metre sprint Hand/eye coordination</p>



<p><b>Level 5</b></p>	<p>Select, use and adapt instruments to measure length, mass, capacity, volume, angle and temperature.</p> <p>Measure, estimate and calculate time and duration of time.</p>	<p>Test Yourself area e.g. Weight, Height, Explosive power, Upper body strength, Balance, Stretch flexibility, Heart fitness, Proportions, Arm span</p> <p>Sportspass Quick reactions Ten metre sprint Hand/eye coordination</p>
<p><b>Level 6</b></p>	<p>Choose units, measurements and levels of accuracy appropriate to a measurement situation.</p> <p>Use estimates where appropriate and judge the reasonableness of these estimates.</p>	<p>Test Yourself area e.g. Weight, Height, Explosive power, Upper body strength, Balance, Stretch flexibility, Heart fitness, Proportions, Arm span</p> <p>Sportspass Quick reactions Ten metre sprint Hand/eye coordination</p>



# Mind map of sport

Sportsworks

Curriculum links

