

# SAASTEC

and its role in promoting the development of  
science centres  
and related organisations in southern Africa



**Benefits of a science centre:** Science centres bring many benefits to their communities. They:

- Demystify science, technology and related fields and assist society to participate in a technological future
- Strengthen the science and technology culture among the youth
- Provide youth with opportunities for constructive learning during and after school hours
- Support teachers and the formal education sector
- Prepare youth for careers in science, technology and related fields
- Provide a constructive destination for family edutainment
- Promote hobbies and leisure activities on science, engineering and technology topics
- Create opportunities to debate and discuss topical science and technology issues.

#### **Activities offered by science centres:**

Science centres offer a wide range of in-house activities:

- Engagement with interactive exhibits
- Science shows, experiments, technology demonstrations and science theatre
- Teacher training
- Talks, debates, quizzes and discussions on topics of local and global relevance
- 'Meet a Scientist' encounters
- Science, technology, computer and mathematics Olympiads and competitions
- National Science Weeks, thematic months and science festivals on behalf of the Department of Science and Technology
- Computer, electronics and robotics workshops and training sessions
- Environmental, sustainable living and recycling projects
- Academic support for school learners in maths, science & technology.

**Outreach activities:** Science centres also offer a wide range of educational activities from their buildings, including:

- Travelling exhibitions, science shows and science theatre
- Mobile science centres
- Road shows and participation in expos and science festivals
- Excursions to places of scientific and cultural interest.

South African science centres currently attract over a million visitors per year. They also reach millions more through their outreach and online education programmes.

#### **How can you contribute to the development of science centres in southern Africa?**

- Visit science centres and become familiar with their goals and activities
- Participate in in-house and outreach activities offered by science centres
- Offer your expertise to science centres and help raise awareness of your field of endeavour
- Sponsor activities, displays, programmes and/or events in science centres
- Partner with science centres to achieve common objectives
- Provide in-kind donations of equipment and expertise to science centres
- Help to publicise science centres and their role in society
- Serve on the boards or subcommittees of science centres.

**Conclusion:** Science centres are ideally placed to make a significant contribution to the reduction of the 'science deficit' in society, i.e. the difference between the amount of knowledge and understanding that the public, including the youth, needs to have about science and technology versus the amount of knowledge and understanding that they already have. They are able to make this important contribution in a fun and entertaining way that promotes family cohesion as well as national identity and the development of essential life skills.

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This information leaflet is primarily about science centres but SAASTEC recognises that many other institutions, people and events contribute to non-formal science education in South Africa.





Even if you are not a scientist or technologist, science and technology are an important part of your life. Yet the pace of scientific and technological advances today is such that most people cannot keep up. We learn about science and technology in school, college and university, but research shows that as much as 95% of our science and technology knowledge and skills are acquired outside the formal learning environment.

Science centres are sources of non-formal learning. They are specifically designed to demystify science and technology and make it accessible to the public. Learning about science, technology, mathematics and engineering, happens most efficiently in the environments that science centres create, i.e. fun, hospitable, hands-on and minds-on, participative, and partially structured.

**What is a science centre?** A science centre is an educational facility that uses effective methods to teach science, technology, mathematics and engineering. These methods rely mainly on the use of interactive displays, events and activities, but science centres also use new technologies, such as social media, web-based education programmes and remote teaching and learning techniques.

**Origin of science centres:** Modern science centres were first established in North America in the mid 1960s with the opening of the *Exploratorium* in San Francisco and the *Ontario Science Centre* in Toronto.

**Concept of a modern science centre:** Science centres and interactive museums offer hands-on, inquiry-based learning. They promote dialogue and debate while learning, and help people to derive explanations, rather than just providing answers, for important scientific discoveries and inventions. They also promote social engagement across generations and cultures. Science centres straddle the divide between schools and

industry and public and private sector involvement in science and technology education. They are spaces where the different role players in science education engage, co-operate and share resources in order to promote awareness, interest and understanding in their field. Science centres work in partnerships with other NGOs, CBOs and public and private bodies to achieve their objectives.

Science centres recognise that the three pillars of interactive science engagement are

- science awareness, understanding and knowledge
- hands-on interaction, and
- dialogue between scientists and the public.

They also recognise that 'smart play' is one of the most effective ways of learning for people of all ages. Their role is to reach beyond the provision of information into the development of understanding and wisdom that brings about changed mindsets and behaviours leading to the development of more productive and sustainable life styles. Science centres therefore help people to reach their full potential.

**Goal of a science centre:** The goal of a science centre is to contribute to the social development of its community by engaging young people and their families in activities that excite their interest in science, technology, mathematics and engineering so as to equip them to become productive citizens in future.

**Roles of a science centre:** The combination of roles that science centres play in their communities is unique, science centres:

- Promote awareness of science and technology among the youth, families and adults
- Supplement the school curriculum in science, mathematics and technology
- Stimulate curiosity and inquisitiveness among the youth
- Create forums for public debate on current science and technology issues and allow the public to be part of the process of assimilating scientific knowledge
- Recognise the value of 'real' experiences and the inherent

benefits of engaging directly with visitors

- Celebrate the universality of science whilst recognising its multi-cultural origins and the value of indigenous knowledge systems
- Strongly promote creativity, invention and innovation
- Develop partnerships to promote science awareness and engagement across cultural, political, economic and geographical boundaries.
- Promote an awareness of southern African and African contributions to science and technology.

**Science centre development:** There are more than 2 500 interactive science centres in 90+ countries worldwide, receiving over 310 million visitors per year. New science centres are opening at a more rapid rate than any other heritage or edutainment destinations worldwide. The main areas of growth are in Africa, China, south-east Asia, eastern Europe, Russia and the Middle East.

The regional network in southern Africa is the Southern African Association of Science and Technology Centres (SAASTEC), which has 71 members. There are 28 science centres in South Africa and 2 science centres in other southern African countries.

South Africa hosted the 6<sup>th</sup> Science Centre World Congress (6SCWC) in September 2011 on behalf of Africa. During this Congress 430 science centre leaders and thinkers from 60+ countries gathered in Cape Town to review the progress of science centres worldwide and define a path for their future development. At the end of the Congress the 'Cape Town Declaration' was issued that outlines the status and aspirations of science centres worldwide.

**The science centre model:** Science centres are very cost-effective organisations that deliver a wide range of beneficial services to society at minimal cost. They are therefore ideal targets for sponsor and donor funds. Furthermore, science centres provide immediate and tangible benefits to society whilst also having a high public and media profile.