Making sure it's possible

SOUTH AFRICAN NATIONAL SCIENCE MONTH IMPLEMENTATION FRAMEWORK

AI-Assisted Block Themes Image

science, technology & innovation
Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

NRF National Research Foundation
SAASTA South African Agency for Science and Technology Advancement

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1. INTRODUCTION

1.1 Background

The Department of Science, Technology and Innovation (DSTI) leads a policy-based science engagement programme, which started in 1998. The programme aims to build a society that is knowledgeable about science, is science literate and can form independent opinions on science matters. These strategic intentions are realised through a collective contribution of stakeholders such as universities, science centres, government agencies and science councils, which carry out relevant activities, taking guidance from the 2015 Science Engagement Strategy. According to the Science Engagement Strategy, science includes systematic knowledge in the fields of engineering, medicine, agriculture, mathematics, social sciences and humanities, technology, all facets of the innovation chain, natural and physical sciences, and indigenous knowledge.

In pursuit of the science engagement programme goals, in 2000, the DSTI established the annual National Science Week (NSW) as a flagship science engagement event that highlights the importance of science in people's daily lives.

Driven by continuous improvement, NSW has undergone changes such as moving from being observed in just three provinces each year to a nationwide approach where it is observed concurrently in every province.

At the NSW 2025 launch event, Minister Blade Nzimande announced that, from 2026, NSW will become National Science Month (NSM).

This implementation framework offers a background description of NSM as well as guidance on how individuals and organisations can plan and engage in NSM.

1.2 Appropriate time to celebrate NSM.

July has been identified as an appropriate time to celebrate NSM. The main factor in favour of July is that there are no other competing national observances during this month. As 18 July is the annual international Nelson Mandela Day, science activities will be hosted to commemorate former president Mandela's contributions to democracy.

1.3 Designing NSM activities

Programme coherence is a critical part of system-wide coordination in the implementation of the science engagement programme, providing the basis for establishing NSM activities. In this framework, it refers to ensuring the science engagement programme aligns with both the internal and external environments while striving to realise inclusive participation of its target participants. The aim is to achieve productive interactions that, among other things, generate coordinated take-home science messages that enrich knowledge production and enhance progression towards the society that the programme seeks to build. The first step in establishing NSM and ensuring programme coherence is establishing anchor points that serve as central concepts or foundational points of reference linking the DSTI and the external environment to the science engagement programme target participants.

2. ANCHOR POINTS

To guide the operational definition of NSM and its activity design model, the following anchor points have been identified:

2.1 DSTI mantra

The DSTI has adopted as its mantra "Placing science, technology and innovation (STI) at the centre of government, education, industry and society". In the context of science engagement, the mantra is seen as a directive to highlight the ways in which STI impacts service delivery, education, industry and private individuals.

2.2 System leadership and coordination

One of the DSTI's policy priorities is system leadership and coordination. In the implementation of the science engagement programme, this emphasises broadening and strengthening coordination of science engagement throughout the whole government sector.

2.3 Inclusive participation

In the 1996 White Paper on Science and Technology, the founding policy statement of the science engagement programme acknowledges that building an effective and successful national system of innovation requires the inclusive participation of all South Africans, which in turn depends on public access to science information. The science engagement programme's implementation approach divides the public into 16 groups, each of which should participate in the programme and have common and distinct expected participation outcomes. The groups and expected outcomes are presented further in Table 2.

3. OPERATIONAL DEFINITION OF NSM

NSM can be viewed as a nationwide science observance through which the science engagement programme target participants use various means available to them to show their connection to science. This includes how they use science to impact others and how its impact is experienced in service delivery, education, industry and the activities of private individuals.

The objectives of NSM are the following:

3.1 To demonstrate the power of science as a tool for understanding the natural world, creating new technologies, resolving issues, and informing decision making.

3.2 To promote public access to science knowledge.

3.3 To instil in scientists a culture to deliberately exchange knowledge with the public.

"Placing science, technology and innovation (STI) at the centre of government, education, industry and society"

4. DESIGN APPROACHES AND CONSIDERATIONS FOR NSM ACTIVITIES

The DSTI does not dictate or prescribe how stakeholders should celebrate NSM as it is essential to promote the growth of a variety of activities, make NSM citizen-owned and allow participants celebrate science using the best tools available to them. The science knowledge that will be conveyed or shared through NSM activities will be driven by the approaches and considerations outlined below.

4.1 Free-will approach

Target participants are challenged to devise their own activities to observe NSM. The approach is grounded in the understanding that science is everywhere, so participants can better appreciate its value by looking at ways in which they are connected to it and conceptualise their activities accordingly. A publicity campaign to promote the free-will approach is discussed later in this document.

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4.2 Mainstreaming annual international science observances

Every year, the UN Educational, Scientific and Cultural Organization (UNESCO) announces a science observance to raise awareness of global challenges, educate people, inspire political will and strengthen international collaboration while encouraging global action on certain themes. In contrast to National Science Week, which only occasionally included these observances, content relevant to UNESCO's yearly science observances will be institutionalised and mainstreamed in NSM activities, including free-will activities.

4.3 Science diplomacy

The DSTI maintains bilateral and multilateral ties with individual countries and multilateral organisations, respectively. In instances where bilateral or multilateral agreements specify that the countries will collaborate on science endeavours within a certain year or over a specific period, the DSTI will identify and publicise these agreements so that target participants incorporate appropriate activities into their NSM activities. Some of these activities will be overseen directly by the DSTI or through its appropriate entity due to the type and size of resources required.

4.4 Shaping take-home messages

Enhancing the contribution of NSM activities to the science engagement programme outcomes – which are assessed by the five-yearly South African Public Relationship with Science (SAPRS) survey – requires paying close attention to take-home messages. These include making sure that NSM activities can result in, among other things, the public gaining knowledge about specific science topics and developing public trust in science, scientists and scientific institutions through interactions with scientists.

(a) Adopting a theme

In its policy and leadership role of the science engagement programme, the DSTI will, from time to time, oversee the determination of certain science topics or issues that should be highlighted to build public awareness and knowledge about them. This will be accomplished by selecting the NSM theme and the special science topics or issues to be highlighted for a given NSM edition or series of editions over a predetermined period:

(i) The theme will be determined by the DSTI based on relevant factors and suggestions from stakeholder groups.

(ii) Based on significant trends and developments in the field of science, both nationally and internationally, the DSTI will, ideally in consultation with the relevant science sector, identify science topics or issues that should be highlighted in NSM celebrations. These science topics or issues will be chosen because it is believed to be in the best interests of South Africans to be aware of and gain knowledge about them.

(iii) A science content advisory mechanism is anticipated to be established as part of the new Science Engagement Strategy Implementation Plan that will be ready by the end of March 2026. This mechanism will be helpful in determining the NSM theme and particular science topics to be prioritised in NSM.

b) Focused period

Focused periods involve allocating a block of time during NSM to either a theme or a thematic statement. The time block will be a minimum of one day and a maximum of one week.

The duration of the time block will be determined annually during the NSM planning process through consultation with relevant stakeholders – usually bodies whose operational activities are linked to the subject matter under consideration. The final block schedule, which attempts to balance the expectations of stakeholders of interest, will be made public through the NSM popularisation and publicity campaign.

The block scheduling method and the free-will approach mentioned in par. 4.1 above are intertwined and do not clash with one another as individuals or organisations pursuing free-will activities are encouraged to align with the block schedule if they have the capacity to do so. In the absence of the necessary capacity, they are urged to continue with what they can do based on what is available to them.

Nonetheless, this capacity gap will be filled by knowledge-sharing initiatives driven by knowledge-producing institutions through appropriate communication channels such as the media and other outreach activities. Table 1 shows a typical NSM block schedule that is suggested for use in the first NSM in 2026.

TABLE 1: TYPICAL NSM BLOCK SCHEDULE

Time Block (Days)	Block theme	Motivation
1-5	Technology and innovation	Technology and innovation are interwoven, creating a synergistic relationship where one frequently propels the other while continuously transforming the world.
6-10	Science in human health	According to World Health Organization data from 2019, South Africans have a 26% chance of dying between the ages of 30 and 70 from diabetes, cancer, cardiovascular disease or chronic respiratory diseases. Additionally, the country has the highest rate of obesity among sub-Saharan African nations, with over 28% of adults being obese. The Indigo Wellness Index also declared South Africa to be the world's unhealthiest country.
11	Environmental conservation and management	Approximately 10% of the world's plant species, 7% of the world's reptile, bird and mammal species, and roughly 15% of the world's known coastal marine species are found in South Africa and it is the third most biologically diverse country in the world. South Africa is actively involved in marine science research, including significant research in Antarctica and the Southern Ocean through the South African National Antarctic Programme and the South African Polar Research Infrastructure.
12	Science in service delivery	STI enables governments and organisations to develop new solutions, improve existing processes and create better outcomes, especially in areas like water, sanitation, waste management, energy and health.
13-16	Science in education	STI appears in education through the use of digital tools and curricular and extracurricular activities. Artificial Intelligence and other such technologies offer ways to improve academic efficiency and learning but also raise moral questions that may compromise academic integrity. Over-reliance on these technologies may hinder students' acquisition of critical future-proof abilities. The level of learners' participation in the gateway subjects of mathematics and physical sciences is concerning as it limits the pipeline for science, technology, engineering and mathematics careers and negatively impacts the country's development.
17	Science journalism day	By focusing public attention on specific topics, the media influences what people deem essential and if an issue receives a lot of media coverage, people are more likely to regard it as important. Positioning science journalism as a knowledge intermediary should consequently be prioritised if media coverage of science is to be expanded.

Time Block (Days)	Block theme	Motivation
18	Science for human rights	Ever year on 18 July, International Nelson Mandela Day is observed to honour his legacy of defending democracy and human rights. By driving advancements in healthcare, education, information access, food security, and other critical services, STI improves access to fundamental human rights.
19-24	Climate change	South Africa already faces a high level of risk from natural hazards and disasters, including droughts, floods, and storm-related events – all of which are likely to be worsened by climate change, according to the World Bank Group. Understanding climate change is essential to minimising its severe effects and gaining public support for evidence-based mitigating measures.
25	Space science and astronomy	South Africa is a prominent international player in astronomy, housing world-class infrastructure, and with several notable discoveries made in this country. Through initiatives led by the South African National Space Agency in collaboration with the private sector and academic institutions, South Africa also invests in the space sector in, among other things, satellite development, earth observation and space manufacturing
26	Decolonising knowledge systems	Indigenous and scientific knowledge systems are interconnected and complement each other, which is necessary for addressing complex global and national challenges. Demonstrating and acknowledging the value of both systems is essential for developing comprehensive and effective solutions.
27	Science diplomacy	Based on its bilateral and multilateral agreements, South Africa collaborates with other countries to address local and global issues. Science can be used to enhance such collaborations. Public trust in and appreciation of science could be increased by demonstrating and assessing how science enhances international relations.
28	Science for decision makers	Good governance – including resource allocation and policy outcomes – depends on sound decision-making. In turn, sound decision-making depends on using scientific evidence and initiatives to establish a culture of evidence-based decision-making.

Time Block (Days)	Block theme	Motivation
29	South Africans' relationship with science	The SAPRS survey is conducted every five years to assess how close the country is getting to the kind of society envisioned by the science engagement programme. The inaugural survey was conducted in 2022 and its results were published in December 2024. In the build-up to the next survey in 2027, the survey results dissemination activities are continuing to encourage the public to engage with the research report and to raise publicity about the next survey in 2027. The DSTI may benefit from using communication tools to informally assess how the results of the previous survey compare to how people feel today.
30	Public awareness of research institutions	Publicly funded research is largely produced by universities and science councils. Citizens should be informed about these institutions, their activities, and the ground-breaking research they have produced. This will undoubtedly improve public confidence in science institutions, scientists and science, as well as possibly positioning scientific research as an attractive career.
31	Science and youth	The next generation should be motivated to contribute to scientific advancements by inspiring young people to pursue careers in scientific research and innovation. The work of young South Africans who are doing very well in scientific research and as innovators and entrepreneurs could be exemplary and motivational to others. Participation in science fairs like the Eskom Expo for Young Scientists should be encouraged, as it provides a breeding ground for future researchers and innovators.

(c) Outcomes of the participation of target participants

Science engagement initiatives, including NSM, should in some way contribute to the expected outcomes of the participation of 16 target participants presented in Table 2, which are considered a conduit to realise the science engagement programme outcomes. Science engagement programme outcomes are those indicator measures that are used in the SAPRS survey based on the Science Engagement Monitoring and Evaluation Impact Indicator Framework. Therefore, when observing NSM, South Africans should aim to do so in ways that either directly or indirectly contribute to the expected outcomes in Table 2, whether through activities based on the block schedule in Table 1 or entirely free-will activities.

TABLE 2: OUTCOMES OF THE PARTICIPATION OF TARGET PARTICIPANTS

Target participants	Participation outcomes
1. Learners	• Developed an interest in and positive attitudes towards science subjects and careers • Perceived and engaged in science as a recreational activity
2. Educators	• Exposed to inquiry-based science to foster critical thinking, problem-solving and a deeper understanding of scientific concepts beyond textbook memorisation
3. Students	• Motivated to mentor and coach school learners in extracurricular activities • Exposed to lifelong learning
4. Scientists/researchers	• Took their research findings to the public • Demonstrated the relevance of science in relation to the block themes listed in Table 1 • Addressed other pressing social issues that science can unravel • Encouraged collaboration between indigenous and scientific knowledge systems to find solutions to societal issues
5. Industry members	• Demonstrated how STI is transforming business operations • Demonstrated how ordinary citizens are part of the national system of innovation through customer feedback, therefore creating a continuous cycle of improvement and new product development
6. Indigenous knowledge holders	• Appreciated collaborating with the scientific community to address societal issues through integration of indigenous and scientific knowledge systems • Appreciated the commercial value of indigenous knowledge and intellectual property management that should accompany the process
7. Tourists	• Appreciated science infrastructure as tourist attractions
8. Decision-makers	• Appreciated evidence-based decision-making approach • Enabled STI to be considered in the decision-making process • Enhanced conversations on the social context of STI
9. Science interpreters	• Demonstrated the relevance of science in relation to the block themes listed in Table 1 • Stimulated learners' interest in and built positive attitudes towards science subjects and careers • Positioned science as a recreational activity

Target participants	Participation outcomes
10. Journalists	• Appreciated the culture of evidence-based news reporting • Institutionalised the use of science in media reporting to ensure that scientific reasoning and evidence are fundamental to general news coverage, not just limited to dedicated science sections
11. General public	• Gained more knowledge and had greater appreciation of science
12. STEM professionals	• Participated in science outreach, including coaching and mentoring learners taking part in extracurricular activities that enhance the development of future-proof skills
13. Government departments	• Raised public awareness of how STI is transforming government services, including making it citizen-centric • Published scientific advisories received and considered over a designated period
14. Research institutions	• Raised public awareness of their role and ground-breaking research they have carried out • Profiled their collaborative research activities with other countries • Profiled the advice provided to government, including policy briefs • Facilitated access to public research infrastructure
15. Knowledge intermediary institutions	• Performed translative science communication, which involves simplifying and making actionable difficult scientific knowledge relevant to a variety of science topics for a wide range of non-experts
16. Think tanks	• Hosted policy discussions

5. SCIENCE COMMUNICATION APPROACHES

"Science communication approaches" in this document refer to the methods in which science knowledge is conveyed and exchanged during NSM, as well as the models and spoken language that may be employed in doing so. It is impossible to dictate the methods and models of science communication that different target participants should employ in their NSM activities, other than to emphasise that they should try to use approaches that are results-oriented and suitable for the situation.

There are a variety of methods to convey and exchange science knowledge, including policy dialogue, exhibitions and media encompassing mainstream, alternative and social media. The following should be considered when developing approaches:

5.1 When practicable, interfacing science with indigenous knowledge systems will generate opportunities to enhance knowledge sharing between scientists and non-scientists.

5.2 Dissemination, public participation or two-way models are examples of science communication models that stakeholders could employ. There cannot be a one-size-fits-all solution since diverse circumstances require different strategies. However, in-person encounters give priority to the two-way communication model so that participating parties, particularly scientists or knowledge intermediaries and non-scientists, can learn from each other.Due to the nature of the scientific subject under discussion, the scientist or knowledge mediator may need to disseminate knowledge before engaging in a two-way dialogue.

5.3 South Africa is a highly language-diverse country with 11 official languages and recently, South African Sign Language being added as the 12th. NSM activity organisers and science communicators in general should consider local languages and accommodate them accordingly. Any printed and digital materials should follow the same procedure, and they should also be accessible in Braille.

6. TARGETED GRANT FUNDING

NSW followed a more structured approach, with its activities almost fully centrally controlled and/or influenced and grant-funded by the DSTI through the National Research Foundation's South African Agency for Science and Technology Advancement. This approach is considered unsuitable for NSM, which is meant to be open and passively inclusive based on the experience gathered from UN-led observances. Anyone who is aware of NSM can participate by acknowledging it, thinking about its significance, or performing any private acts of recognition – big or small. Therefore, the open call grant funding approach used in NSW will be replaced by a targeted grant funding approach that focuses on the following areas:

6.1 Investing in an intensive popularisation and publicity campaign to achieve an open and inclusive NSM that South Africans are aware of and can participate in. Further details about the publicity campaign are covered later in the document.

6.2 An enabling environment needs to be created to "push" science knowledge from knowledge-producing institutions to the public. Grant funding will therefore be given to universities and science councils to assist their scientists in taking their research findings to the

public, demonstrating the relevance of science in relation to the block time themes listed in Table 1, and addressing any other pressing social issues that science can unravel. While science councils are less sophisticated in terms of their organisational arrangements, universities are complex because of their interdisciplinary nature. To achieve a more coordinated system of collaboration, university research offices will act as the points of contact for facilitating scientists' participation in NSM.

7. NSM POPULARISATION AND PUBLICITY

The Minister will be the face of the NSM popularisation and publicity campaign, which will largely be conducted through different forms of the media. The campaign will entail the following:

7.1 Pre-NSM publicity campaigns, which should ideally begin at least three months prior to NSM. In addition to encouraging and challenging South Africans from all walks of life to participate in the upcoming NSM, this campaign seeks to instil in them a culture of voluntary involvement. To help accelerate NSM's transition to the maturity stage, it is anticipated that the pre-NSM publicity campaign will be intensive during the first five years following the inaugural NSM in 2026.

7.2 Any upcoming NSM will be mentioned as part of the pre-NSM awareness campaign at specific public platforms where the Minister interacts with stakeholders. The Minister's Budget Vote speech could provide a platform to announce the theme of the NSM.

7.3 The Minister-led national launch event in NSW has been institutionalised over time and has proven to be a successful strategy for promoting NSW. Consistent live coverage on mainstream media, especially radio and television – which the 2022 SAPRS study found to be the most popular and trustworthy sources of science information in South Africa – has been one of the best practices. NSM will continue to use the launch format, which has been refined over time and shown to be a successful platform for publicity and science communication due to the way its programme is organised, which includes putting up a sizable public science exhibition.

7.4 At the NSM project coordination level, specific stakeholder groups whose participation will improve the target participants' experience of NSM will be brought on board via a targeted engagement. An arrangement would need to be put in place with industry to encourage the participation of their scientists and related professionals in science outreach during NSM, and for science councils and universities to facilitate their scientists' role in NSM as outlined in par. 6.2 above.

8. MONITORING AND EVALUATION

By 2030, NSM is expected to reach maturity, which will be characterised by a high level of voluntary public participation. The DSTI seeks to promote a transition towards this ideal stage. As a result, the type of NSM monitoring and evaluation activities to be carried out will be intended to measure the geographic distribution of activities, volunteering intensity and related matters, as well as strategic alignment with the foundational reference or anchor points, which will be realised in the following ways:

8.1 Organisations or stakeholder groups and individuals will be encouraged to register their NSM events and activities on the Science Engagement Information Management System (SEIMS).

8.2 Activities registered on SEIMS prior to NSM will generate a provisional geographic spread of volunteer-organised activities. Meanwhile, registered activities that, according to SEIMS protocol, have reached the completion stage after NSM will provide the actual geographic spread of such activities.

8.3 Every NSM edition will be accompanied by a snap survey to gauge the level of public participation and how closely the activities aligned with Table 1 and the outcomes in Table 2. The snap survey will be based on a nationally representative sample.

8.4 The composition and content of Table 1 may change, but the outcomes in Table 2 will remain the same. The process to revise Table 1 will include a strategic alignment analysis to ensure that it is aligned with the foundational reference points set out earlier in this document.

Collectively, the aforementioned actions will generate enough data to direct the DSTI's efforts to lead NSM to maturity and consistently contribute to the overall outcomes of the science engagement programme.

NSM will be deemed mature when about 80% of snap survey respondents are aware of it and about 60% of them attest to having publicly or privately observed it some way.

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