

WORKSHOPS

BASF HOLDINGS SOUTH AFRICA

KIDS' LAB



DATE:	Daily
TIME:	09h30-10h30, 11h30-12h30, 13h30-14h30, 15h30-16h30, 17h00-17h30
VENUE:	Monument, Fountain Court
AUDIENCE:	Grade 4-8
CAPACITY:	20
PRICE:	Free, Booking Essential

BASF Kid's Lab is an interactive chemistry programme that focuses on educating today's children about the role of chemistry in building a sustainable future. Our Clever Foodies programme, especially designed for learners between the ages of 10 and 14, gives them an opportunity to participate in explorative and interactive chemical experiments to detect and identify vitamins and secondary metabolites (pigments). These experiments are simple, fun and engaging.

www.basf.com

DEPARTMENT OF ENVIRONMENTAL AFFAIRS MY 2050



DATE:	Daily
TIME:	09h00-10h00, 13h00-14h00
VENUE:	Monument, Visitors Centre I
AUDIENCE:	Grade 10-12
CAPACITY:	20
PRICE:	R25

Join the Department of Environmental Affairs for an interactive workshop on climate change and energy. The goal of the workshop will be for the students to develop their own low-carbon South Africa in 2050. Along the way, climate change related concepts will be learned and debates on how we use energy and what we use it for will take place.

www.my2050.environment.gov.za

DST/NRF SARCHI CHAIR IN BIOTECHNOLOGY INNOVATION & ENGAGEMENT, RHODES UNIVERSITY

RESPONSIBLE RESEARCH AND INNOVATION - WHAT ROLE CAN SCIENCE COMMUNICATORS PLAY?



DATE:	11 March
TIME:	14h00-16h00
VENUE:	Monument, Ntsikana Galley Annexe
AUDIENCE:	Scientists and Science Communicators
CAPACITY:	20
PRICE:	Free, Booking Essential

This workshop is specifically targeted at science communicators or scientists involved in science engagement. The workshop aims to examine the Responsible Research and Innovation (RRI) framework and its implications for the future of scientific research and science communication in South Africa. The South African Agency for Science and Technology Advancement (NRF-SAASTA), in collaboration with the South African Institute for Aquatic Biodiversity (NRF-SAIAB) are partners of the Nucleus Project, an EU funded initiative which seeks to demonstrate how RRI can be implemented in higher education institutions and research organisations. Through the DST/NRF SARCHI Chair in Biotechnology Innovation & Engagement at Rhodes, case studies of students' engagement with the public about their research are also discussed. Central to the workshop is the role that science communicators can play in the RRI framework.

A collaboration between the DST/NRF SARCHI Chair in Biotechnology Innovation & Engagement of Rhodes University, SAASTA, a business unit of the National Research Foundation (NRF) and the South African Institute for Aquatic Biodiversity (SAIAB)

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH 3D PRINTING



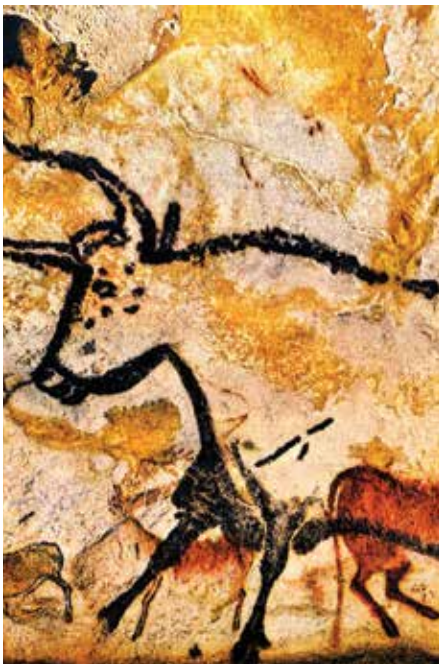
DATE:	Daily
TIME:	10h30-11h30
VENUE:	Monument, The Bridge
AUDIENCE:	Grade 11 & 12
CAPACITY:	25
PRICE:	R25

The CSIR offers specialised laser Research and Development services to local industries such as the medical, automotive and manufacturing industry. One of these specialised services is 3D printing. 3D Printing is becoming one of the fastest growing laser based technology that can be used in the manufacturing industry. This technology is a manufacturing process that deposits materials layer by layer to form a tangible product. Leading at the forefront with this 3D Printing service for local industry is the CSIR. With its 3D printing platforms, the CSIR conducts research for the development of manufacturing and repair processes for high value metallic engineering components used in industries such as aerospace, automotive and medical. The systems that are being used are: Optomec LENS (Laser Engineered Net Shaping) and Aeroswift.

<https://www.csir.co.za/csir-national-laser-centre>

DST-NRF PALAEOSCIENCE CENTRE OF EXCELLENCE /EVOLUTIONARY STUDIES INSTITUTE

ONE HUNDRED THOUSAND YEARS OF AFRICAN ARTS AND CRAFTS WITH OCHRE!



DATE:	Daily
TIME:	09h00-10h30
VENUE:	Monument, Atherstone Room Annexe
AUDIENCE:	Grade 4-12
CAPACITY:	24
PRICE:	R40

Humans have been using ochre for almost a 100 thousand years here in South Africa! It was used for paint, sunscreen, carving, in glue and more! In this workshop participants will get a chance to try their hand at ochre art and crafts – and while doing this they can reflect on the extraordinary artistic, technical and cognitive abilities of our African ancestors from the Middle Stone Age to the Khoisan hunter-gatherers. These are the same abilities that have helped develop computers, have placed robotic explorers on Mars and sent space probes beyond our solar system.

<http://ancient-earth.co.za>, <https://www.wits.ac.za/esi/>, <https://www.wits.ac.za/origins/>

TRAVELLING THROUGH TIME: SOUTH AFRICA FROM THE ORIGIN OF LIFE TO THE ORIGIN OF HUMANITY



DATE:	Daily
TIME:	11h30-13h00
VENUE:	Monument, Atherstone Room Annexe
AUDIENCE:	Grade 7-12
CAPACITY:	30
PRICE:	R30

Palaeontologists and geologists have been unravelling the story told by South Africa's rocks and fossil for over 100 years. Join us as we travel back in time to relive this incredible tale. Hold real fossils in your hands (and replicas when the real fossils are too precious). See two billion year old bacteria, trilobites, prehistoric plants, ammonites, dinosaurs, mammal ancestors and, of course, the prehistoric ancestors of humans. What would it have been like to travel back in time and experience the world millions of years ago? Can you survive the past!

<http://ancient-earth.co.za>, <https://www.wits.ac.za/esi/>, <https://www.wits.ac.za/origins/>

INTERACTIVE HUMAN EVOLUTION!!!!



DATE:	Daily
TIME:	15h00-16h30
VENUE:	Monument, Atherstone Room Annexe
AUDIENCE:	Grade 11 & 12
CAPACITY:	24
PRICE:	R30

One of South Africa's secret treasures is its wonderful fossil record of human evolution. In this workshop participants get to handle replicas of the skulls that demonstrate human evolution. These are skulls that are household names in many parts of the world; the Taung Child, Naledi, Karabo, Neo and Mrs Ples, to name a few. But how do we know that humans evolved? Participants will discover for themselves how the skulls, stone tools, and genetic evidence can be organised into evolutionary trees - revealing a common ancestor between humans and chimps.

www.ancient-earth.co.za



science & technology

Department: Science and Technology
REPUBLIC OF SOUTH AFRICA

WORKSHOPS

NRF/NZG: NATIONAL ZOOLOGICAL GARDENS OF SOUTH AFRICA

POWER OF THE MICROSCOPE



DATE:	Daily
TIME:	09h00-10h00, 15h00-16h00
VENUE:	Monument, Visitors' Centre II
AUDIENCE:	Grade 6-11
CAPACITY:	25
PRICE:	R25

How to use a microscope correctly is one of the most important laboratory skills that a life scientist will need. This workshop covers understanding how a microscope works, preparing your own slide, and discovering a world hidden from a naked eye.

www.nzg.ac.za

DST-NRF CENTRE OF EXCELLENCE FOR INVASION BIOLOGY / LIMBOVANE OUTREACH PROJECT

MAGNIFICANT LIFE BELOW GROUND



DATE:	Daily
TIME:	09h00-10h30, 15h00-16h30
VENUE:	Monument, Restaurant
AUDIENCE:	Grade 4-12
CAPACITY:	15
PRICE:	R25

In our sugar pots, climbing up the wall even in the kettle - ants are everywhere! But have you actually seen them close-up? Join the limbovane Team on a journey discovering the amazing life of ants. Using microscopes, this interactive workshop will open your eyes to a tiny but remarkable world, unknown by many.

www0.sun.ac.za/limbovane/

NRF/ITHEMBA LABS: LABORATORY FOR ACCELERATOR BASED SCIENCES

DIY: DC MOTOR



DATE:	Daily
TIME:	09h00-10h00, 15h00-16h00
VENUE:	Monument, Gallery-in-the-round
AUDIENCE:	Grade 11-12
CAPACITY:	50
PRICE:	R25

Electromagnetism has a huge number of technological applications that range from fun to life-saving; from pinball machines to particle accelerators, and MRI's in hospitals. In this workshop the learners will build a mini DC motor using everyday items for further understanding and conceptualisation of this concept.

www.tlabs.ac.za

NRF/SAASTA: SOUTH AFRICAN AGENCY FOR SCIENCE AND TECHNOLOGY ADVANCEMENT

GET FIRED UP ON HYDROGEN AND FUEL CELLS!



DATE:	Daily
TIME:	11h00-12h00, 15h00-16h00
VENUE:	Monument, Visitor Centre I
AUDIENCE:	Grades 8-12
CAPACITY:	20
PRICE:	R25

Hydrogen fuel cells appear to be the perfect way to generate clean electricity by combining oxygen and hydrogen to produce water with a release of energy. In this workshop, you will interact with a fuel cell specialist to learn what fuel cell technology is, how it works and how it may develop in the future, and you will assemble and drive a small hydrogen fuel cell vehicle.

www.hysa-padep.co.za

WONDERS OF NANOTECH



DATE:	Daily
TIME:	11h00-12h00; 13h00-14h00
VENUE:	Monument, Visitors Centre II
AUDIENCE:	Grade 10-12
CAPACITY:	25
PRICE:	R25

Why do materials behave differently at a nanoscale level? Why does gold appear red at a nanoscale level? Can nanorobots really 'repair' organs or tissues in your body? Interact with our nanotechnologist as we provide answers to these mysteries and other wonders on nanotechnology. Using inexpensive materials readily available at your nearest pharmacy or supermarket, we will show that the world of nanotechnology is all around you. If you are curious about exploring the invisible world of nanotechnology, come and enjoy this fun and interactive workshop.

www.npep.co.za



science & technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

SOUTH AFRICAN ASTRONOMICAL OBSERVATORY (SAAO)

A HITCHHIKER'S GUIDE TO THE UNIVERSE



DATE:	Daily
TIME:	11h00-12h00
VENUE:	Monument, Gallery-in-the-round
AUDIENCE:	Grade 9-12
CAPACITY:	36
PRICE:	R25

Fasten your belts and join us for a fast paced interactive and exciting journey from Grahamstown across the universe. Exploding stars, black holes and cannibal galaxies, we'll see them all and much more. Come and learn, enjoy demos and perform exciting short experiments to learn about this journey.

EXPLORING THE UNIVERSE WITH TELESCOPE 4.0



DATE:	Daily
TIME:	13h00-14h00
VENUE:	Monument, Gallery-in-the-round
AUDIENCE:	Grade 5-9
CAPACITY:	30
PRICE:	R25

Can you find our next habitable planet? Fasten your seat-belts, as we take you on a journey through the known universe and explore the differences amongst stars, planets and galaxies? Solve puzzles, find clues and let's build telescope 4.0.

www.saa0.ac.za

SOUTH AFRICAN COUNCIL FOR NATURAL SCIENTIFIC PROFESSIONS (SACNASP)

UP SCI-CLING



DATE:	Daily
TIME:	09h00- 10h00, 11h00-12h00, 13h00-14h00, 15h00-16h00
VENUE:	Monument, B2 Arena
AUDIENCE:	All
CAPACITY:	30
PRICE:	R25

SACNASP presents a fun and entertaining science show for all ages. The shows aim to generate a scientific curiosity in learners while providing edu-tainment, by combining different kitchen chemistry principles with a couple of more advanced experiments that have been engineered to be more entertaining. The show will incorporate pH changes, oxidation, create smoke filled bubbles and work with dry ice and liquid nitrogen.

www.sacnasp.org.za

NRF/SAEON: SOUTH AFRICAN ENVIRONMENTAL OBSERVATION NETWORK

SALTY SCIENCE AND BUOYANCY



DATE:	8-9 March
TIME:	11h00-12h00
VENUE:	Monument, Ground Floor Classroom
TIME:	13h30-14h30
VENUE:	Monument, Atherstone Room Annexe
AUDIENCE:	Grade 10 & 11
CAPACITY:	25
PRICE:	R25

Ocean currents arise in many different ways. Deep ocean currents are caused by differences in water temperature and salinity. In this experiment, students will hypothesise the cause of ocean currents and develop a model to explain the role of salinity and density in deep ocean currents. Then we will explore how these ocean currents can regulate climate.

www.saeon.ac.za



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

WORKSHOPS

SOUTH AFRICAN NATIONAL SPACE AGENCY (SANSA)

FROM MICRO TO NANO, BUILDING A SPACE CUBE SATELLITE



DATE:	Daily
TIME:	15h00-16h00
VENUE:	Monument, Council Chamber
AUDIENCE:	Grade 4-6
CAPACITY:	35
PRICE:	R25

Planet Earth has its own large natural satellite known as the moon. Man-made satellites are machines made by people. Can you imagine building a tiny satellite of just over 1kg and launching it into space? This is exactly what has been achieved in our country. Join this workshop hosted by CPUT and SANSA and build your own CubeSAT model and learn about how this satellite works and how SANSA uses satellites to improve our lives.

USES OF EARTH OBSERVATION SATELLITES



DATE:	Daily
TIME:	09h00-10h00
VENUE:	Monument, Ground Floor Classroom
AUDIENCE:	Grade 8-12
CAPACITY:	35
PRICE:	R25

Earth Observation is the gathering of information about planet Earth's physical, chemical and biological systems via remote sensing technologies supplemented by earth surveying techniques, encompassing the collection, analysis and presentation of data. Earth observation has become technologically increasingly sophisticated.

www.sansa.org.za

DID YOU KNOW

SOUTH AFRICA IS THE ONLY COUNTRY IN THE WORLD TO HAVE TWO NOBEL PEACE PRIZE WINNERS WHO HAD HOUSES ON THE SAME STREET. THE STREET IN QUESTION IS VILAKAZI STREET IN SOWETO, THE NOBEL PRIZE WINNERS WERE NELSON MANDELA AND ARCHBISHOP DESMOND TUTU.



SQUARE KILOMETRE ARRAY (SKA) SA / HARTEBEESTHOEK RADIO ASTRONOMY OBSERVATORY (HARTRAO)

The South African Radio Astronomy Observatory (SARAO) spearheads South Africa's activities in the Square Kilometre Array Radio Telescope, commonly known as the SKA, in engineering, science and construction. SARAO is a National Facility managed by the National Research Foundation and incorporates radio astronomy instruments and programmes such as the Hartebeesthoek Radio Astronomy Observatory (HartRAO) in Gauteng, as well as the associated human capital development and commercialisation endeavours.

COLOUR BY NUMBERS



DATE:	Daily
TIME:	09h00-10h00
VENUE:	Monument, Ntsikana Gallery Annexe
AUDIENCE:	Grade 8-9
CAPACITY:	20
PRICE:	R25

Radio waves travel through space, just like light, and can be intercepted by radio telescopes like the MeerKAT radio telescope. Astronomers then convert these radio waves into pictures that look like photographs. However, radio waves are invisible! Join scientists from SKA SA and HartRAO to find out how scientists make "radio pictures" of the objects in the Universe. Then, using your imagination, complete your own radio picture.

SATELLITE LASER RANGERS



DATE:	7-10, 12, 13 March
TIME:	15h00-16h00
VENUE:	Monument, Ntsikana Gallery Annexe
AUDIENCE:	Grade 10-12
CAPACITY:	20
PRICE:	R25

Geodesy is the science of measuring and representing the Earth's geometric shape, orientation in space and field of gravity, as well as the changes of these properties with time. Various types of techniques and instruments are used at HartRAO to do geodesy, including satellite laser ranging (SLR). Join scientists from HartRAO to operate a SLR system, take your own measurements and help determine the shape of things!

www.ska.ac.za, www.hartrao.ac.za, www.ska.ac.za/about/sarao/

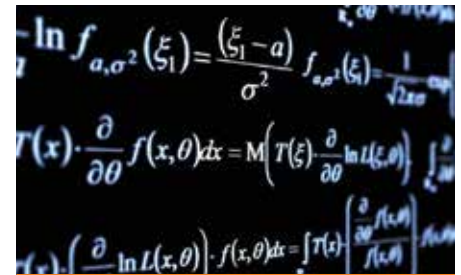


science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

LIVING MATHS

BRAINTWISTERS!



DATE:	Daily
TIME:	13h00-14h00
VENUE:	Monument, Ground Floor Classroom
AUDIENCE:	Grade 4-7
CAPACITY:	30
PRICE:	R25

Give your brain a solid workout with some of the wackiest, funniest and brainiest brainteasers known to man!

www.livingmaths.com

DID YOU KNOW

THE KIMBERLY MINE - ALSO KNOWN AS 'THE BIG HOLE' OR 'DIE GROOT GAT' IN AFRIKAANS - WAS CLAIMED TO BE THE LARGEST HOLE EXCAVATED BY HAND. THAT TITLE HOWEVER BELONGS TO THE JAGERSFONTEIN MINE, ANOTHER OLD SOUTH AFRICAN DIAMOND MINE APPROXIMATELY 109 KM SOUTH-WEST OF BLOEMFONTEIN. MINING BEGAN IN 1870 AND THE PIT WAS HAND-DUG FOR 39 YEARS UNTIL 1909.



KZN MUSEUM CLIMATE CHANGE AND SUSTAINABILITY



DATE:	Daily
TIME:	09h00-10h00 (Grade 10) 15h00-16h00 (Grade 11 & 12)
VENUE:	Monument, The Bridge
CAPACITY:	30
PRICE:	R25

The Kwazulu Natal Museum will host an interactive workshop on climate change, its causes and impacts on the environment and society. Museum-in-a-box is an interactive tool used to engage learners in relating the concept to everyday living.

www.nmsa.org.za

NNA LE BOKAMOSO SCIENCE AND ARTS ACADEMY PLAY SCIENCE



DATE:	Daily
TIME:	11h00-12h00, 15h00-16h00
VENUE:	Monument, Rehearsal Room
AUDIENCE:	Grade 4-12
CAPACITY:	60
PRICE:	R25

The workshop advocates for a Playscience duality as an approach to stimulate learners' curiosity, fostering their creativity and helping them discover and make meaning of the world around them. Children are curious about the world and related systems which engage in this world. It is imperative therefore to nurture this curiosity using both intellectual and creative means. Play is associated with the development of creative skills and fosters creativity of thought, and imagination.

www.facebook.com/nnalebokamoso.sciearts

ESKOM: IDM ESKOM'S ENERGY EDUCATION PROGRAMME



DATE:	Daily
TIME:	09h00-09h30, 10h00-10h30, 13h30-14h00, 15h30-16h00
VENUE:	Monument, Art Gallery
AUDIENCE:	Grade R 4-9
CAPACITY:	60
PRICE:	R25

Eskom's Energy Education Programme aims to educate school children about the value of electricity and the important role it plays in bringing so much comfort into the home. It aims to bring awareness to the fact that 'flicking a switch' is so quick and easy that one almost never considers the huge positive impact electricity has on our daily lives.

www.eskom.co.za/sites/idm/SchoolYard/Pages

MIKE BRUTON IMAGINEERING ANIMAL STORY TELLING



DATE:	10-13 March
TIME:	11h00-12h00
VENUE:	Monument, Ground Floor Classroom
AUDIENCE:	Grade 4-9
CAPACITY:	30
PRICE:	R25

How do different animals feed, breed, avoid being eaten, and find a place to live? How do they move over land in the air and water? What are the major animal groups, and how do they evolve? Why are some of them threatened with extinction? What can we do about it? Become a learner scientist for 40 entrancing minutes and share your knowledge with your friends.

www.mikebruton.co.za

OUT OF THIS WORLD



DATE:	Daily
TIME:	11h00-12h00
VENUE:	National English Literacy Museum, Activity Room 1, 25A Worcester Street
AUDIENCE:	Grade 4-8
CAPACITY:	30
PRICE:	R25

Join Basil Mills in a sci-fi fantasy world of myth and magic. Launch into warp speed by boldly learning how to draw aliens, cyborgs and creatures of your imagination. Become a starship trooper and debug your inhibitions by expressing your inner creativity on paper. Excellent therapy for wannabe Star Wars, Star Trek and Buzz Lightyear enthusiasts.

ALIEN AFRICAN IMAGES



DATE:	Daily
TIME:	13h00-14h00
VENUE:	National English Literacy Museum, Activity Room 1, 25A Worcester Street
AUDIENCE:	Grade 4-8
CAPACITY:	30
PRICE:	R25

Take a shot left onto an extra-terrestrial highway of discovery. Discover ancient African myths and legends and people from the Sky. Basil will introduce you to the Tokoloshe, AbantuBamlambo, the Mbulu, Chitukwane and the Nya-Nya Bulembu. See the sculptures portraying ancient African beliefs. Capture the essence of your nightmares, daydreams and imagination and transform them into 3D creatures. Basil encourages innovation, creativity and hands on ideas. Learn about recycling, make a robot, droid or cyborg using objects you would normally throw away.

BHALA NJENGENZULULWAZI



DATE:	7, 9, 12 March
TIME:	11h00-12h00
VENUE:	National English Literacy Museum, Activity Room 2, 25A Worcester Street
AUDIENCE:	Grade 8-12
CAPACITY:	30
PRICE:	R25

Write like a Scientist. The workshop uses topics from home-based and community science and technology, the prescribed literature and the natural environment, to write science pieces (poetry or drama). Z. Matshoba is the Manager of the Education and Public Programmes at NELM. The section links the museum with public. This is done through education, exhibitions and a number of public programmes such as book launches. He is also a writer, a photographer and a media practitioner (with a keen interest in online content management and filming).

CREATIVE WRITING



DATE:	8, 10, 13 March
TIME:	11h00-12h00
VENUE:	National English Literacy Museum, Activity Room 2, 25A Worcester Street
AUDIENCE:	Grade 8-12
CAPACITY:	30
PRICE:	R25

The workshop uses topics from science and technology, and from the natural world, to write science fiction. Learners will be required to think creatively. They would be supplied with pens and papers to write down their ideas. They would also be given books with creative works, and be shown some pictures in order to stimulate their creativity. These would be used to develop the poems / short stories.

www.nelm.org.za

OCULUS, NCAT, NIA USA, SKA SA
AN INTRODUCTION TO THE WORLD OF VIRTUAL REALITY



No longer a curiosity or gamer's tool, Virtual Reality has entered mainstream technology as the next major disruptive tool alongside the smart phone, the personal computer and the internet. Already, NASA, Surgeons and Pilots use VR. Now, as innovators embrace this new technology, virtual reality will transform our future world in ways that we've only just begun to imagine. In this immersive workshop, learners will experience true virtual reality using the Oculus Rift state of the art VR. Come for a glimpse into how VR is made and what you might have to do to stay on the leading edge of the next tech revolution!

www.oculus.com; www.ncat.edu; www.nianet.org; www.ska.ac.za

DATE:	7-10, 12, 13 March
TIME:	09h00-11h00; 12h00-14h00
VENUE:	Monument, Council Chamber
AUDIENCE:	Grade 8-12
CAPACITY:	18
PRICE:	R25



NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

EXTRACTION
OF DNA FROM
STRAWBERRIES

DATE:	Daily
TIME:	13h00-14h00
VENUE:	Albany Science Museum, Education Classroom
AUDIENCE:	Grade 7+
CAPACITY:	20
PRICE:	R25

Have you ever wondered how scientists extract DNA from an organism? All living organisms have DNA, short for deoxyribonucleic acid, which is basically the blueprint for everything that happens inside organism's cells. Overall, DNA tells an organism how to develop and function, and is so important that this complex compound is found in virtually every one of its cells. In this activity you will make your own DNA extraction kit from household chemicals and use it to separate DNA from strawberries.

ENDOTHERMIC
AND EXOTHERMIC
REACTIONS

DATE:	Daily
TIME:	15h00-16h00
VENUE:	Albany Science Museum, Education Classroom
AUDIENCE:	Grade 7+
CAPACITY:	20
PRICE:	R25

Every chemical reaction that exists is one of two things: endothermic and exothermic. The Greek root therm means temperature or heat, which gives us a clue about all reactions: there is energy exchange! Endo means 'within' while exo means 'outside', so these types of reactions are opposite. Students will observe a series of reactions using household ingredients to determine if they are endothermic or exothermic.

ENGINEERING
CHALLENGE: BRIDGE
BUILDING

DATE:	Daily
TIME:	11h00-12h00
VENUE:	Albany Science Museum, Education Classroom
AUDIENCE:	Grade 1-5
CAPACITY:	20
PRICE:	R25

Can you design a gumdrop bridge? Creating shapes with gumdrops and toothpicks is a lot of fun, but the challenge comes when you try to build a structure using them. The goal is to work as a team to make a load-bearing bridge crossing a 25.4cm span, using only 20 gumdrops and 40 toothpicks.

These workshops are supported by the US Embassy in South Africa

www.nist.gov; <https://za.usembassy.gov/embassy-consulates>

SOUTH AFRICAN SOCIETY FOR BIOINFORMATICS
STUDENT COUNCIL (SASBISC)

BIOINFORMATICS FOR BEGINNERS



DATE:	Daily
TIME:	11h00-13h00
VENUE:	Monument, Ntsikana Gallery Annexe
AUDIENCE:	Grade 11+
CAPACITY:	20
PRICE:	R25

Bioinformatics is a broad interdisciplinary field representing the interface between molecular biology and computers. This discipline focuses on using databases and computer algorithms to answer complex biological questions relating to the functioning of small molecules, pathways, diseases and evolution. This workshop is aimed at introducing young scientists to the new and exciting field of Bioinformatics and prepare them for today's 'data-driven' biological research.

<http://sasbistudents.weebly.com/>

SIYAVULA EDUCATION
SIYAVULA PRACTICE

DATE:	Daily
TIME:	11h00-12h00, 13h00-14h00
VENUE:	Monument, Restaurant
TIME:	15h00-16h00
VENUE:	Monument, Ground Floor Classroom
AUDIENCE:	Grade 8-12
CAPACITY:	30
PRICE:	R25

Siyavula Practice offers high school learners a chance to improve their marks, while helping them master their skills in Maths and Science. With an unlimited number of questions and their fully worked-out solutions available, learners are able to see where they have gone wrong and improve on their mistakes. Want a way to improve your marks at your fingertips? Then Siyavula Practice is for YOU!

www.siyavula.com

SCI-BONO DISCOVERY CENTRE

SCIENCE OF FLIGHT



DATE:	7-9, 11-13 March
TIME:	13h00-14h00
VENUE:	Albany Science Museum, Green Gallery
AUDIENCE:	Grade 4-8
CAPACITY:	30
PRICE:	R25

How is a plane able to take flight? How do birds stay up in the sky? From the Wright Brothers' first flight in 1903 to the modern day planes and jets, come along and explore the science of flight while experimenting with paper planes.

BIONICS



DATE:	8, 10, 11, 13 March
TIME:	09h00-10h00
VENUE:	Albany Science Museum, Education Classroom
AUDIENCE:	Grade 4-8
CAPACITY:	30
PRICE:	R25

The bionic man is no longer a fiction of science, it is a reality. Experiment with, and explore the application of biological systems found in nature, space exploration, and design of engineering and modern technology.

www.sci-bono.co.za

SCIFEST AFRICA

CREATIVE CHROMATOGRAPHY



DATE:	Daily
TIME:	09h00-10h00
VENUE:	Albany Science Museum, Rennie Hall
AUDIENCE:	Grade 7-9
CAPACITY:	30
PRICE:	R25

A homogenous mixture, also known as a solution, is simply any mixture that is the same in composition throughout. Chromatography is a broad range of physical methods used to separate and/or to analyse complex mixtures. Fruit juices, powder drinks and soft drinks all contain a number of ingredients (including food colouring) that are not visible to the naked eye. Use art and chromatography to determine which food colourings are found in your favourite drinks.

DIY DESSERT



DATE:	Daily
TIME:	09h00-10h00
VENUE:	Albany History Museum, Standard Bank Gallery
AUDIENCE:	Grade 7-9
CAPACITY:	30
PRICE:	R25

Exhausted after a hectic morning at Scifest Africa, really feel like an ice-cream, but still have so much to do and so little time? Use ice, milk, salt and sugar to make your own ice-cream, while learning about freezing point depression, endothermic and exothermic reactions and physical change.

FOAM GNOMES



DATE:	Daily
TIME:	13h00-14h00
VENUE:	Albany History Museum, Standard Bank Gallery
AUDIENCE:	Grade 7-9
CAPACITY:	30
PRICE:	R25

Polyurethane foam is abundantly found in manufactured products and has many practical applications, including footwear, insulation and upholstery. Learn to create polyurethane foam; identify obvious indicators that a chemical change has occurred; and make, decorate and name your own foam gnome! Then, and we dare you, use your gnome to photobomb a classmate's selfie.

BUILD A COMET



DATE:	Daily
TIME:	11h00-12h00
VENUE:	Albany History Museum, Standard Bank Gallery
AUDIENCE:	Grade 6+
CAPACITY:	20
PRICE:	R25

On 12 November 2014, the European Space Agency's Rosetta Mission landed its Philae probe on a comet; the first time in history that such an extraordinary feat has been achieved! Find out where comets come from and how to observe them, and then build your very own true-to-life comet using everyday household materials in this cool workshop developed by the Planetary Science Institute, USA.

www.psi.edu

SCIFEST AFRICA

MANKALA



DATE:	Daily
TIME:	11h00-12h00
VENUE:	Albany Science Museum, Rennie Hall
AUDIENCE:	Grade 6+
CAPACITY:	20
PRICE:	R25

Mankala is an indigenous counting board game, similar to checkers, which has been played in Africa since the 6th Century CE. Learn to play Mankala while discovering the contribution of Africa to mathematics, from the oldest mathematical object found in Swaziland to geometric symmetries found in modern African art.

MICRO
ROCKETS

DATE:	Daily
TIME:	09h00-12h00
VENUE:	Monument, Fort Selwyn
AUDIENCE:	Grade 4+
CAPACITY:	14
PRICE:	R25

This workshop, developed by volunteers of Planète Sciences, France, will allow you to dream about travelling to space, design and build your own original micro-rocket, launch it outside Fort Selwyn (weather permitting), and watch it soar!

www.planete-sciences.org

MATHEMATICS OF
BEADING

DATE:	Daily
TIME:	13h00-15h00
VENUE:	Albany Science Museum, Rennie Hall
AUDIENCE:	Grade 8+
CAPACITY:	10
PRICE:	R25

Use the mathematics traced in the integrity of beadwork by South Africa's leading beadwork artists, as well as hands-on beading activities, to learn general mathematical concepts such as numbers, polygynous figures, tessellations, symmetry, proportion, etc., and to promote public awareness and engagement with this art form.

WHAT'S THE
MATTER?

DATE:	Daily
TIME:	09h00-10h00
VENUE:	Albany Science Museum, Green Gallery
AUDIENCE:	Grade 7-9
CAPACITY:	20
PRICE:	R25

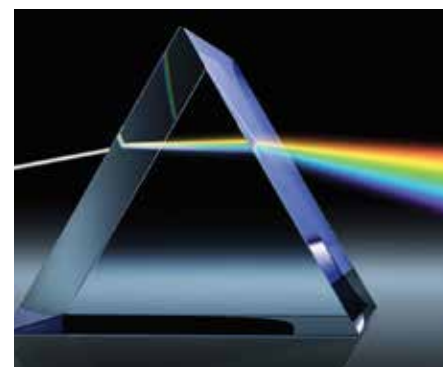
Density is how close together the molecules of a substance are, or how much mass a substance has in a given space. Will you be able to shout "Eureka!" like the great Archimedes? Explore how you can use density to determine the identity of unknown metals by doing a few simple measurements.

www.scifest.org.za

UNIVERSITY OF EAST
ANGLIAMAKE YOUR OWN
SLIME

DATE:	7, 9-13 March
TIME:	13h00-14h00
VENUE:	Monument, Rehearsal Room
AUDIENCE:	Grade 6-12
CAPACITY:	30
PRICE:	R25

You will use inexpensive materials, which are available from supermarkets, pharmacies, and hardware stores throughout the country (and probably your mother's grocery cupboard – but we will deny saying that), and unsophisticated and accessible equipment, to make and test your very own yucky slime.

SPECTROSCOPY IN A
SUITCASE

DATE:	7-11, 13 March
TIME:	09h00-10h00
VENUE:	Monument, Rehearsal Room
AUDIENCE:	Grade 10-12
CAPACITY:	30
PRICE:	R25

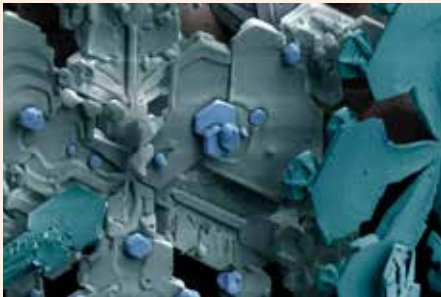
When Isaac Newton passed a beam of sunlight through a prism in 1666, a continuous spectrum of light, consisting of all the colours of the rainbow, could be seen. This discovery led to the invention of the spectroscope in 1819. A spectroscope allows us to learn about the colours present in a light beam, which tells us more about what materials are made of. Make your own spectroscope, see a spectrometer in action, and start to analyse the world around you using light.

www.uea.ac.uk/chemistry

WORKSHOPS

UNIVERSITY OF KWAZULU-NATAL, SCIENCE AND TECHNOLOGY EDUCATION CENTRE

GOING NANO - WHAT MAKES A CRYSTAL?



DATE:	Daily
TIME:	11h00-12h00
VENUE:	Monument, Art Gallery
AUDIENCE:	Grade 10+
CAPACITY:	30
PRICE:	R25

Have you ever wondered why some crystals are hard and some are soft, or some blue and others don't have a colour at all? Join us on a tour to the inside of crystals and explore the roles of atoms and the relationship between the arrangements of atoms and the properties of these materials.

SMART MATERIALS



DATE:	Daily
TIME:	15h00-16h00
VENUE:	Albany History Museum, Standard Bank Gallery
AUDIENCE:	Grade 3-5
CAPACITY:	30
PRICE:	R25

Humans have been modifying the properties of materials for thousands of years. In modern times, scientists have learned more about what gives materials their unique properties, and this has opened up possibilities for designing materials with interesting properties. In this workshop we will explore some of these exciting materials and will investigate what happens to these materials when we change the temperature or expose the material to water and UV light.

www.stec.ukzn.ac.za

UNIVERSITY OF LIMPOPO SCIENCE CENTRE

PHOTOAQUA KIDS PUPPET SHOWS



DATE:	Daily
TIME:	1h00-12h00, 15h00-16h00
VENUE:	Albany Science Museum, Green Gallery
AUDIENCE:	Grade R-7
CAPACITY:	50
PRICE:	R25

The PhotoAqua Kids puppet show consists of two plays, one on water shortage and the other on photosynthesis. The water shortage play will focus on the current challenges we are facing as South Africans with our water being cut-off due to long drought conditions, the importance of water and how to save water. The photosynthesis play will focus on the importance of plants in our lives, looking at the nutrients and how the process of photosynthesis takes place.

www.ul.ac.za

UNIVERSITY OF SOUTH AFRICA (UNISA)

I-SET



DATE:	Daily
TIME:	12h00-14h00
VENUE:	Monument, The Bridge
AUDIENCE:	Grade 8-12
CAPACITY:	30
PRICE:	R25

I-Set (Inspired towards Science, Engineering and Technology) is a community engagement flagship project of Unisa's College of Science, Engineering and Technology (CSET) and Research and Innovation portfolio. Aiming to inspire awareness and interest in the fields of science, engineering and technology, I-SET targets learners between the ages of 9 and 16 and their communities. The exercise uses fun activities, including the building of programmable robots, using Lego MindStorms to achieve robotic challenges.

www.unisa.ac.za/cset