

SCI(ENCE) – KICK POWER of FABI @ National Science Week 2013

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The National Science Week (NSW) is an outreach flagship programme of the Department of Science and Technology, which aims to popularize science to the broader South African society. As an active, enthusiastic and committed participant, FABI was once again in Piet Retief to contribute towards the NSW objective of *“making science appealing (and fun) to learners such that they consider Science, Engineering and Technology (SET) as a preferable career option”*. Team FABI comprised of Markus “Magnificent Markus” Wilken (PhD student), Amy “hello-Amys” Wooding (MSc student), Mmatshapho “Big-Big Mmmmatshapho” Phasha (PhD student), Teboho “Tebooooooho” Letsoalo (MSc student) and Osmond “Osmeeeeendzzz” Mlonyeni (PhD student).

Charged with no less than 29 experiments geared for the broad range of learners from 25 schools (grade 1-12), for the 4 days spanning 29 July – 1 August 2013, Team FABI kicked-off NSW 2013 with the adrenalin-pumping, vocal cords-clearing and ear-numbing cheer, *“we’ve got the spirit, yes we do, we’ve got the spirit, how about you!”* - to which a valiant response from the learners echoed, *“we’ve got the passion, yes we do, we’ve got the passion, how about you!”* With this synergistic camaraderie established, Team FABI was well poised to usher in the fun focused and interactive learning approach accompanying the experiments with the aim of cultivating the curiosity of learning.

Among the popular experiments were *“Falling wine glass”*, *“Egg walk”* and *“Psychic bag”*. The falling wine glass makes use of a wine glass tied with a long string at one end and a counterweight on the other. The wine glass is hung over the index finger with the rest of the fingers clenched into a fist while the arm is stretched out perpendicularly to one’s chest. The other hand is similarly stretched out at the same height holding the counterweight. Instantaneously, the counterweight is released – allowing it to fall. Gravity pulls down both the wine glass and the counterweight, simultaneously though momentum carrying the counterweight enables the string to wrap itself around the index finger, avoiding the wine glass hitting the ground. The objective of this experiment was to illustrate the principles of gravity and momentum.

The *Egg walk* used half a dozen eggs (unboiled) placed in the same orientation within the wells of a carton. The experiment used three cartons and challenged learners and teachers of any

weight to walk on these eggs. No eggs would break provided that the participant walked normally on them. The principle is that eggs are very strong at the top and bottom and applying pressure to these areas, distributes the pressure evenly throughout the egg as opposed to concentrating it at one point; this avoids the eggs from breaking.



Figure 1. **Light and relight** experiment



Figure 2. **Psychic bag** experiment



Figure 3. **Egg walk** experiment



Figure 4. **Burning balloon** experiment

The *Psychic bag* entailed banishing “psychic” Magnificent Markus and Teboooooho from the tent with a loud – *out* or *bye* – from the learners. Six participant-learners were selected and each given a white non-transparent unmarked bag with one of three types of chocolate. Each participant took out their chocolate showed it to their peers before returning it into the bag. After the participants had randomly lined themselves up, all learners in unison shouted Markus and

Tebooooooho' names. Immediately, both psychics returned into the tent and each told three of the participants what chocolate brand was in their bag. Needless to say their record remains at 100%. How? Learners emphatically asked – our sci(ence)-kicks response was that the bag told them the brand of the chocolate. To confirm this, our sci(ence)-kicks dipped the bags into water then showed the learners the stencilled name. The principle of the experiment is that the brand name of a chocolate to be found in a bag was stencilled with a superhydrophobic spray. However the exact sci(ence)-kick prediction power can only be revealed to a FABI student when he/she joins Team FABI NSW 2014!

As NSW 2013 came to a close, the learners wrapped up yet another successful National Science Week, with an adorable twist to the FABI cheer, and they proclaimed, "*we are passion, yes we are, we are passion, how about you!*" Indeed as they are passion and curiosity is their preoccupation, then it suffices to say that Albert Einstein would delight in the fact that FABI played a significant role in developing a "*passionately curious*" generation!