

General message for Science Teachers

From Godwin (G2) Nhauro: NECT - Assistant National Education Programme Manager

Good day colleagues

These are uncertain times for all of us. The sands are shifting daily and many of us are feeling anxious about what happens next to our health and safety, livelihood, to our education, to our freedoms and to life as we know it.

Whilst we practice physical distance and social solidarity, this disruption also provides us with an opportunity to reimagine how we live and how we work. It also allows us to exercise control over the aspects that we can change and, in this instance, how we can start thinking about Science skills, concepts and assessment.

Teaching Science for Understanding: Part 5 Science messaging	WEEK 5 How to teach Technology
Good day scientist groomers: From Godwin (G2) Nhauro – ANEPM (NECT)	
<p>Technology is a practical based subject meant to produce engineers, technicians and artisans needed in modern society as well the need to develop a technologically literate population.</p> <p>As the teacher your main role in this subject is to cultivate innovation, creativity, and critical thinking skills in learners. This is to develop practical solutions to problems, taking social and environmental factors into consideration. Being a practise-based subject (70% mini-pat and 30% test/exam) more time should be spent on learning through practically based activities.</p> <p>How to assess: Across the InterSen phases learners are assessed based on same skills including level of design process skills such as investigation, design, making, evaluation, and communication. The expectation is that learners gradually gets better in each skill with practise. In short, the subject is designed to give learners opportunities to develop and apply specific design skills to solve technological problems—and as a teacher it is your job is making sure that these objectives are met.</p> <p>Further resources visit: https://nect.org.za/materials/natural-sciences-technology</p> <p>Stay home, stay safe, observe social distancing.</p>	

Teaching Science for Understanding: Part 4 Science messaging (145 words)	WEEK 4 Strand: Planet earth and beyond
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<p>This marks part 4 of Teaching Science for Understanding (TSU) series. With planet Earth and beyond strand, one of the best teaching approaches that will enhance learner understanding is the project approach.</p> <p>Learners should build models of solar system being guided by a rubric – let learners use homemade materials (Styrofoam balls or tennis balls, cardboard pieces, glue, sticks, ball stick, beads etc.). Make use of a rubric for assessment. Each member of the group should be given a chance to talk during feedback and answer questions.</p> <p>You can access all teaching resources: tracker and planners, lesson plans, content videos and posters for this strand free on NECT website:</p> <p>http://nect.org.za/materials/natural-sciences-technology</p>	

You can teach a student a lesson for a day, but if you can teach him to learn by creating curiosity, he will continue the learning process as long as he lives. - Clay P. Bedford

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Teaching Science for Understanding: Part 3 Science messaging (141 words)	WEEK 3: 10 April 2020 Strand: Energy and Change
Good day scientist groomers: From Godwin (G2) Nhauro – ANEPM (NECT)	
<p>In our last 2 messages on Teaching science for understanding series we touched on the use of Visual aids, animations, simulations, models as teaching methodologies of promoting interactive learning as well as increasing and improving learner information retention on concepts.</p> <p>This week let's look at how we can teach energy and change for understanding. In addition to employing the above-mentioned approaches to teach this strand, this concept can be easily taught through a series of fun mini-games and play.</p> <p>You can use this to determine what your learners already know and to challenge their own thinking, thereby extending their understanding. This approach will deliver improved learner engagement and academic performance in your classroom.</p> <p><i>"Tell me, I forget, show me, I remember, involve me, I understand."</i> Carl Orff</p> <p>For some examples of mini games check: https://www.legendsoflearning.com/learning-objectives/conservation-of-energy/</p> <p>Please stay safe from the Covid-19.</p>	

Teaching Science for Understanding: Part 2 Science messaging (195 words)	WEEK 2: 3 April 2020 Strand: Matter and Materials
Good day scientist groomers: From Godwin (G2) Nhauro - ANEPM (NECT)	
Matter and materials is one of the areas in which concepts often cannot be learned effectively, and where misconceptions are encountered at the highest rate in NS/Tech.	

Misconceptions can be largely attributed to the abstract/theoretical teaching approach to experimental based concepts due to lack of lab facilities and equipment in most of our schools.

Solution: animation, videos, simulations and models (ball-and-stick) are powerful tools that you can use to transform abstract concepts into interactive visual content, making it easier for learners to understand the concepts and yielding almost the same results as performing the real experiments.

This forms part of inquiry-based learning where learners are provided with opportunities to understand concepts through active learning, make observations, ask questions, test out ideas, think creatively, use their intuition, attain specific science process skills and communicate scientific explanations and arguments.

If learners create models it can make their thinking visible, allowing rapid feedback from teacher to learner and learner to teacher, thereby allowing you as a teacher to make meaningful learning a reality.

For free science animations and simulations check: <https://phet.colorado.edu/>

Always remember this approach must be accompanied by pre-and post-explanations and discussion to address misinterpretations and misconceptions.

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Teaching Science for Understanding: Part 1	WEEK 1: 27 MARCH 2020
Science messaging (133 words)	Strand: Life and Living
Good day scientist groomers: message from Godwin (G2) Nhauro - ANEPM (NECT)	
Did you know that more than 90% of the life and living concepts can be taught through visual aids?	
Visual aids supplements text/words with a picture, chart, or illustration, thus facilitating a more interactive environment with the learners.	
Most learners learn better through <i>visuals</i> and <i>interaction</i> than through listening. So, a good visual aid can really help your learners actively participate, understand and remember what you taught.	
Study shows learners who only heard a teacher retains about 10% of the information; heard and saw visual representation about 65%; heard, saw and interact about 90%. That's a lot more!	
Colleagues let's keep our lessons more interactive and interesting.	
<i>"Tell me, I forget, show me, I remember, involve me, I understand."</i> Carl Orff	
For free charts and posters: https://za.pinterest.com/pin/359373245246941333/	
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